Australian Systematic Botany Society NEWSLETTER

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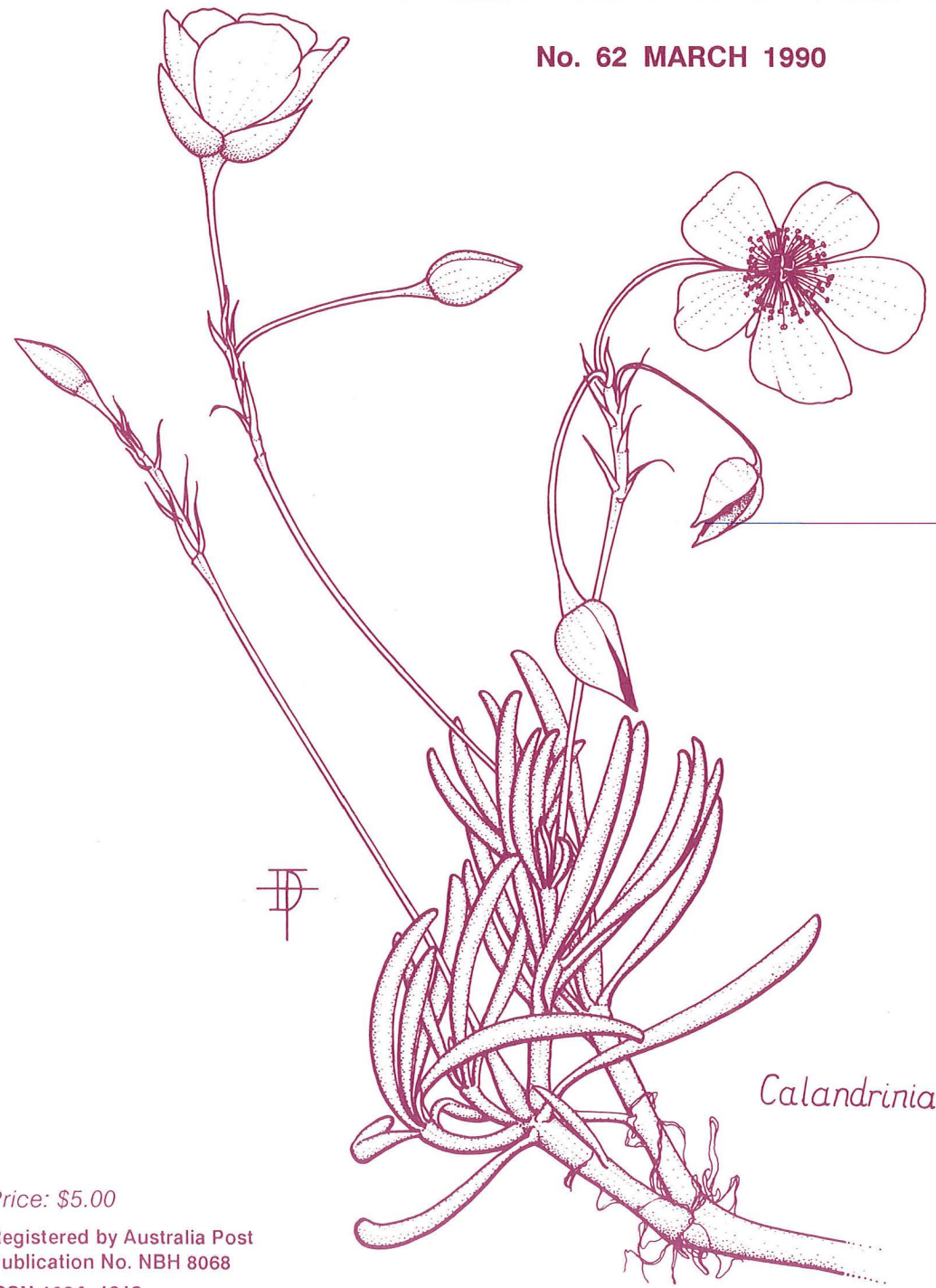

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Office Bearers

President

Dr J.G. West
Australian National
Herbarium, CSIRO
GPO Box 1600
CANBERRA ACT 2601

Tel (06) 246 5113
Fax (06) 246 5000

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Botanic Gardens
GPO Box 1777
CANBERRA ACT 2601

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Fax (06) 248 0682

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ARTICLES

GEORGE CALEY'S CONTRIBUTION TO SYSTEMATIC BOTANY

Joan B. Webb
Lecturer in Science Education, Kuring-gai College

The Banksian collector, George Caley, who worked diligently for his employer in New South Wales from 1800 to 1810, is best known as a collector, plants being his chief interest, but his attention was directed also to insects, birds and quadrupeds. It is the claim of this paper that Caley was more than a mere collector, and contributed to Australian systematic botany to a greater degree than has ever been acknowledged.

Stearn (1974) pointed out that the collections of Banks and Solander, and others like David Nelson, Archibald Menzies and George Caley, who never published, 'made very important indirect and usually little appreciated contributions to Australian Botany.'

The Banks material, freely available for reference at his Soho Square house, was the source of a diversity of publications, some of which drew upon the Banks and Solander names. One example was sufficient, in Stearn's opinion, to support his thesis (*Metrosideros viminalis* Solander ex Gaertner, now *Callistemon viminalis* [Sol.ex Gaertner] G.Don).

I discussed with Dr. Stearn, in London in May 1987, the use of Caley's plant names by others, in particular Robert Brown, and Stearn agreed that Caley names could be in use today, published by others such as Brown; Caley had assiduously named every plant he had collected, and sent his notes and many specimens to Banks, whose doors were open to botanists from all countries. Brown in particular had access to Caley material by way of the Banksian collection and through his association with Caley himself in New South Wales (1802-1805). Brown's Australian diaries make frequent references to Caley and his botanizing; one such reference is the comment from September 14, 1804:

> 'Mr Caley separates *Melaleuca laurina* from *Melaleuca*. He has besides the suppos'd *laurina* 2 other species neither of which I know.'

Melaleuca laurina, named by Smith in 1797, was indeed separated out from *Melaleuca* by Brown, who named it *Tristania laurina*.

A more direct reference to Brown's familiarity with Caley's collections was made in his Appendix to Flinders' *'Voyage to Terra Australis'* (1814):

> 'Since my return from New Holland I have had opportunities of examining, in the same Herbarium [i.e. Banks' herbarium], many new species, found in New South Wales by Mr George Caley, an acute and indefatigable botanist, who resided nearly ten years in that colony;'

Stearn had used one specimen to support his own thesis in 1974; he claimed in 1987 that one example would suffice for my thesis concerning Caley. Examination of Caley manuscripts and Caley specimens at the British Museum (Natural History) has produced evidence that at least eleven Caley manuscript names were published by other botanists.

Three relevant points need to be kept in mind. First, many Caley specimens were tied up in bundles in the basement of the British Museum for most of the 19th Century; Caley specimens were still being mounted in the 1970's (not duplicates). The consequence of this was that the Caley material was not available for examination and study; Bentham's *'Flora Australiensis'* makes reference to Caley specimens only forty times, and when I checked these forty specimens, they were all specimens from the Robert Brown collection, with Brown labels, and annotated in most instances by Bentham. Second, Caley was not a gentleman,

and his lack of money, social standing and formal education, together with his own peculiar character, created barriers to publishing his own findings, although this was a possibility referred to by Brown himself (1811). Third, Caley's botanical abilities were held in high regard by a number of his contemporaries, including Robert Brown and Allan Cunningham. Joseph Maiden, early this century, praised his perceptive abilities, and in recent times Dr L.A.S. Johnson has expressed the view that, from an examination of Caley's specimens and notes, Caley knew much more about the Port Jackson eucalypts than anyone else for the next half century or more (pers. comm. 1988). This regard by other botanists supports the claim that Caley was more than a collector and was capable of making a contribution which to a great extent has been overlooked.

In examining the specimens at the British Museum (Natural History) attention was paid to the names written in Caley's writing, dates and collecting localities, Brown labels, and the nature of the mounting paper (to give a clue to mounting date). Descriptions in the Caley manuscripts were given to botanists at the National Herbarium, Sydney, to check for their consistency with current usage, e.g. whether the description of the plant named by Caley as *Goodenia decurrens* is consistent with the plant named by botanists today as *Goodenia decurrens*. In addition, where possible, the BM specimens were checked for accurate identification by professional Australian botanists. This was mainly done by examination of photographs of the specimens.

Only five of the eleven specimens studied in detail to date will be discussed in detail in this paper:

1. **Leucopogon juniperinus** R.Br., Prod. 546 (1810).
   Caley's MS date: June 1801 (as *Styphelia juniperina*)
   Description: consistent with the current usage: checked by Dr Jocelyn Powell
   Specimens in BM:
   These are classified under:
   1. Caley's note '*Styphelia juniperina*, P. June 1801'. The paper is very new, no Brown labels.
   2. Another Caley sheet, very new paper. '*Styphelia juniperina* near Prospect Aug. 1802'. Another note says 'Sydney old road S Brush Oct 1808'. No Brown labels.
   3. The type specimen is Brown's, 1802, between Sydney and Parramatta. Brown called it '*Styphelia juniperina*' in his label on the type page. The mounting paper is early-mid 19th century.

   Conclusion: This appears to be an early Caley name, pre-Brown. Brown probably saw the Caley specimen in NSW, or saw it in the field with Caley, and then may have used the Caley epithet. Caley's own specimens were not mounted until the 20th century.

2. **Epacris crassifolia** R.Br., Prod. 551 (1810)
   Caley MS: No MS description, but Caley notes on the specimen sheet give name, location and date, February, 1805.
   Specimens in BM:
   1. The type is Brown's, Feb. 1805. No notes on it. However, the second type sheet has a Brown label and note '*Epacris crassifolia*, Middle Harbour, Feb. 1805'.
   2. This sheet has a Caley specimen with this note: '*Epacris crassifolia* on rocks between Sea-sight range and the sea, Feb. 1805'. There is no Brown label; the paper is fairly new. This was collected on Caley's Journey to the Sea (Webb, 1989). Dr Jocelyn Powell confirmed the correct identification of this BM specimen.

   Conclusion: Eric Groves (working on the Robert Brown diaries with T. Vallance and D. Moore) states (pers. comm. 1989) that Brown was not in Middle Harbour in February 1805, and the type was almost certainly collected by Caley and given to Brown, together with the name. Mr Groves believes the Caley specimen should be included with the type.

3. **Persoonia rigida** R.Br., Prot. Nov. 14 (1830).
   Caley's MS date: August 5, 1806.
   Consistency: Dr Peter Weston checked the MS and also the BM specimen.
   Specimens in BM:
   1. The type specimen is Caley's, with a Caley label, 'Baralier's Journey Aug. 5, 1806, *P. rigida*'. This sheet also has a Brown label: '*Persoonia rigida* Caley, *P. spathulata* Cunningham & Sieber, Barrallier's Journey Augt 1806 Caley, Oxley's 1st Expedition Cunningham.'
   2. Another Caley sheet with his note

'*Persoonia rigida*, Aug. 5, 1806'.

Conclusion: Since this species was not described in the '*Prodromus*' of 1810, it was probably a specimen Brown did not see until Caley took it back with him in 1810. Robert Brown has labelled the type sheet '*Persoonia rigida* Caley', which implies that the name did originate with Caley, and that Brown found the Caley name acceptable. As early as 1811 Brown expressed the hope that Caley would publish; it is significant that the year after Caley's death Brown published his '*Proteaceas Novas*' (1830), describing fourteen of Caley's plants, including *Persoonia rigida*. I propose *Persoonia rigida* should be recorded as *Persoonia rigida* Caley ex R.Br.

4. **Pultenaea viscosa** R.Br. ex Benth., Fl. Austral. 2: 127, (1864).
   Caley's MS date: August 1802.
   Consistency: MS checked by Dr Peter Weston. Caley specimen in BM(NH) checked by Dr Michael Crisp.
   Specimens in BM:
   1. The type is R. Brown's, northern boundary of Parramatta, Sept. 1803.
   2. Specimen of Caley's. His note states: '*Pultenaea viscosa*, North Rocks, Aug. 1802'. This sheet has no Brown labels, and the paper is late 19th-early 20th century.

   Conclusion: Bentham did examine the specimens in the Robert Brown collection; he obviously saw the Brown specimen of *Pultenaea viscosa*, but not Caley's, which was not mounted until after Bentham's studies. From the evidence it may be suggested that this was a name Caley and Brown could have discussed when collecting together in NSW.

5. **Thelymitra pauciflora**, R.Br., Prod. 314, (1810).
   Caley's MS date: October 1803.
   Consistency: MS checked by Dr Peter Weston.
   Specimens in BM:
   1. Caley's note - '*Thelymitra pauciflora* P. Oct. 1803', mounted on old paper, watermark 1830. On the back of the sheet is written 'New South Wales, Mr Caley'. No Brown labels.
   2. Type specimen is Brown's, checked by Mark Clements 30.6.87. Brown's note - '*Thelymitra pauciflora*, Port Jackson between Sydney and Parramatta Sept. Oct. No. 1803'.
   3. This specimen sheet has a Caley note, '*Thelymitra pauciflora*? P. Oct. 1803. Compare it'. A Brown label on the same sheet says, '*Thelymitra*, Parramatta, Sept. 1803, Mr George Caley.'

   Conclusion: Since both Caley and Brown named the plant in September, 1803, evidence is insufficient to say more than that it was most likely a name discussed together when collecting in NSW. Mark Clements agrees with this conclusion. (pers. comm. 1989).

Summary of six other specimens (detailed notes available)

The first two species are of interest because they have already been referred to in the literature; species 3-6 are listed as names used by Caley and published by others, presented here as a result of my studies in support of my thesis.

1. *Ceratopetalum apetalum* D.Don, 1830. Hoogland (1960) states that *Ceratopetalum monopetalum* Caley ex Don = *C. apetalum*. Caley's description is headed: *Ceratopetalum/monopetalum/apetalum*, date November, 1803, and the description is consistent with current usage (checked Mr Ken Hill).
2. *Lilaeopsis fistulosa* Caley ex A.W. Hill, 1927. This is Caley's *Hydrocotyle fistulosa* of January 1804, and this specimen is the type specimen in BM for *L. fistulosa*.
3. *Goodenia decurrens* R.Br., Prod. 575 (1810). Caley's description is November 1803, checked for consistency by Ms Joy Everett; Caley and Brown specimens in BM, Brown's is the type.
4. *Scutellaria mollis* R.Br., Prod. 507 (1810). Caley's manuscript description is dated November, 1800, and is consistent with current usage (Dr Barry Conn). Caley and Brown specimens are in BM.
5. *Xanthorrhoea minor* R.Br., Prod. 288 (1810). Caley's description is dated November 1803, but his BM specimens are labelled '*Xanthorrhoea minor*, P. Nov. 1801'. The type specimen is Brown's, 1803.

6. *Pomaderris ferruginea* Sieb. ex DC., Prod. 2: 33 (1825). This is Caley's *Rhamnus ferrugineus*, MS September 1801, specimen in BM with Caley label '*Rhamnus ferrugineus*, among rocks, P. Sept. 1801'. The specimen used for the description was in Sieber's herbarium of New Holland plants; it would appear that Sieber and Caley just chanced to use the same name, but Caley had used the name in both labels and manuscript many years before Sieber published it.

To date, with perhaps one exception, I have been unable to find conclusive evidence that the names published by Robert Brown and also used by Caley were original Caley names of which Brown was fully aware. The one exception is *Persoonia rigida*, for which sufficient evidence exists, I claim, to register the name as *Persoonia rigida* Caley ex R.Br.. However, the thesis of this paper is that Brown and other botanists did adopt Caley names, and the paper is presented for the interest of historians and taxonomists in recognition of George Caley's contribution to systematic botany.

Acknowledgements

I wish to thank the staff of the National Herbarium, Sydney, in particular Peter Weston, but also Jocelyn Powell, Ken Hill, Joy Everett and Barry Conn. Thanks are also due to Michael Crisp, Canberra.

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THE CASUARINACEAE : A PALYNOLOGICAL REVIEW

Yee H. Hwang
Research Division, Natural Science Museum
Taichung, Taiwan

Although the pollen morphology of casuarinas is well documented (Wodehouse, 1935; Erdtman, 1943), Praglowski (1962) was the first to use the descriptions diagnostically. Unfortunately, due in part to its title (cf. Muller, 1981) Praglowski's paper went unnoticed, thus contributing to several erroneous fossil identifications and phylogenetic postulations.

Kershaw's (1970) report on the pollen morphology of 34 species greatly expanded the database of casuarina palynology. Comparing his results with Barlow's (1959a) grouping, he noted that pollen-morphologic groups proposed by Barlow are not discrete entities but that the variation between species is more or less continuous. He also suggested that *Casuarina helmsii* and *C. inophloia* possess characters more in keeping with those of Group A (=Johnson's *Casuarina s. str.*, 1982). In particular, Kershaw demonstrated the palynological variation between Barlow's groups by means of 11 dispersion diagrams in his figure 4. Martin (1982) concluded from Kershaw's results that it was 'not possible to distinguish *Gymnostoma* from *Casuarina* on pollen morphology', a statement with which Kershaw agreed (pers. comm.).

Coetzee and Praglowski (1984), utilizing electron microscope technology, detailed many ultrastructural features of *Casuarina* pollen. This

study established a definite significant distinction between the pollen morphology of *Casuarina* and *Myrica* at the generic level. The most important differences concern the apertures, the sculpture and structure of the exine. Kedves *et al.* (1971) also investigated the exine of 2 species using TEM.

Erdtman (1969) noted that pollen morphology did not support the splitting of *Casuarina* into 2 genera. On the other hand, Chanda (1969a,b) proposed a new classification based solely on exine characters:

- punctitegillate morphotype (*Acuaria*-type)
- striate morphotype (regulate)
  - faintly striate/punctitegillate (*Acutivalvis*-type)
  - striate/punctitegillate (*Collina*-type)
  - distinctly striate/punctitegillate (*Deplancheana*-type)

Observing a good match between this last submorphotype and the *Gymnostomae*, he supported Johnson's segregation of the new genus *Gymnostoma*. However, Coetzee and Praglowski (1984) criticized Chanda's treatment as over-ambitious arguing that SEM-resolved sculpture based on tectal and supratectal details did not reveal features trustworthy enough for an eventual classification of *Casuarina*. With a close look into Chanda's report Coetzee and Praglowski's critique seems justified. It is curious that Chanda singled out one of his submorphotypes instead of making a division corresponding to his two major morphotypes. It is also worth noting that the *Gymnostoma* species in his study constitute only 39% of the striate morphotype.

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THE HERBARIUM COMPUTIST'S LAMENT

(Composed while working on a vast project of national significance.)

I wish my work were a bit glossier
Compiling this database dossier.
At the ANBG
Clatters key after key
There's no end to the genus of *Bossiaea*.

With boredom I grind my *dentata*;
The spp. I've put in aren't *ornata*.
My *spinosa* is sore
(Stop and stretch to the floor-
Not for Science will I be *prostrata*!)

I don't mean to sound crossier and crossier.
P'raps a swap to a family that's mossier
Would broaden my knowledge-
Maybe plants with more foliage?
Oh well; best continue with *Bossiaea*.

Jane Belfrage
Australian National Botanic Gardens ☺

PERSONAL NEWS

COLLIN ELWYN WOOLCOCK M.SC., A.R.A.C.I. (1914-1990)

Jim Ross
National Herbarium of Victoria

Collin and Dorothy Woolcock by courtesy of *The Portland Observer*.

Collin Woolcock was born in the Adelaide suburb of Unley on 23rd September, 1914. As a child he was interested in drawing and painting but when he finished his secondary education at Prince Alfred College in December 1931 at the height of the depression the possibility of making art a career seemed extremely remote. The following year he worked as a cadet in the Barr Smith Library at the University of Adelaide and in 1933 he enrolled at the University where he read for a science degree majoring in Physics and Organic Chemistry. He graduated with a B.Sc. (Hons) degree in 1936 and thereafter worked in Adelaide and briefly in Melbourne before returning to Adelaide.

In 1939, two months before the outbreak of the Second World War, he married Dorothy Williams. With matching interests Collin and Dorothy worked together over the years as a team and in close partnership. During the war years Collin was employed in the central laboratory of an Adelaide firm that processed

hides and wool which in turn were used in the manufacture of clothing and footwear for the armed forces.

Collin graduated with an M.Sc. from the University of Adelaide during the 1940's and in 1949 was asked by Thomas Borthwick and Sons to establish a fellmongery and wool scouring plant in Portland. Following the successful completion of this task, in 1954 he established a pathology laboratory at the Portland and District Hospital where he remained as Chief Biochemist until his retirement in 1975.

On account of other commitments Collin produced relatively little art work until late 1960's when he commenced drawing regularly and developed his skills in botanical art as relaxation from official duties at the hospital. However, during the intervening years from 1954 Collin maintained his interest in the arts while serving as President of the Portland Council for the Encouragement of Music and Arts (CEMA) for eighteen years. During this period Collin and Dorothy devoted much time to activities aimed at raising funds for the construction of an Arts Centre for the citizens of Portland. Among other activities, Open Art Competitions were organised and the winning entries were acquired for a Town Gallery. In 1987 Collin was awarded a Citizenship Award by the Town Council for outstanding services to the community for these activities and subsequently he was made a Life Member of CEMA.

Collin concentrated his attention on terrestrial orchids but following his retirement he broadened his interests and illustrated many other groups. Collin used pencil crayons for his coloured illustrations and perfected a very effective technique. Epacridaceae, Fabaceae and Proteaceae always appear to have been his favourites. Retirement marked the beginning of Collin's 'botanical years' and he often spoke of the pleasure that these years had afforded Dorothy and himself. During this period they travelled widely in Western and eastern Australia. Collin and Dorothy had a very keen eye for plants and many a botanist has benefited from specimens that they collected, often in response to a specific request. I was often informed of the proposed itinerary of an impending trip well in advance and asked to nominate any plants of which material would be particularly welcome. Collin and Dorothy enjoyed working with and for amateur and professional botanists. They worked as a team with Collin concentrating on collecting, drawing and taking photographs and Dorothy making notes and writing.

One outcome of their joint endeavours was marked in 1984 by the publication of *'Australian Terrestrial Orchids'* with the art work by Collin and the text by Dorothy. Towards the end of 1989 *'A Fieldguide to Native Peaflowers of Victoria and Southeastern Australia'* appeared once again with text by Dorothy and illustrations by Collin. Still to appear in books being published by the Society for Growing Australian Plants are Collin's illustrations of the *Grevillea* species and of the mountain flora of the Kosciusko area.

Many readers will be familiar with Collin's illustrations which accompany part 1 of the third edition of J.M. Black's *'Flora of South Australia'* by J.P. Jessop (1978) and the four volumes of the *'Flora of South Australia'* (1986) edited by J.P. Jessop and H.R. Toelken.

Collin's line drawings have appeared in several journals including *'The Orchadian'*, *'Journal of the Australian Native Orchid Society'* and the *'American Orchid Society Bulletin'*. He was a regular contributor to *'Australian Plants'* and illustrated all of A.C. Beauglehole's *'Victorian Land Conservation Council Study Area Reports'*.

In 1976 Collin held a one-man exhibition of orchid drawings in the Russell Advise Gallery, Melbourne. In 1985 his work was exhibited at the Portland Arts Centre and in 1986 at the National Herbarium of Victoria.

Collin gave a collection of his art work to the City of Portland and this is now housed in an extension gallery to the Portland Arts Centre which was recently named the Collin and Dorothy Woolcock Gallery. Collin's art work is to be found also in the State Herbarium of South Australia, the National Herbarium of Victoria, and in private collections. During 1989 Collin and Dorothy very generously donated their herbarium consisting of several thousand sheets to MEL along with their botany library; the orchid material was given to the Australian National Botanic Gardens (CBG).

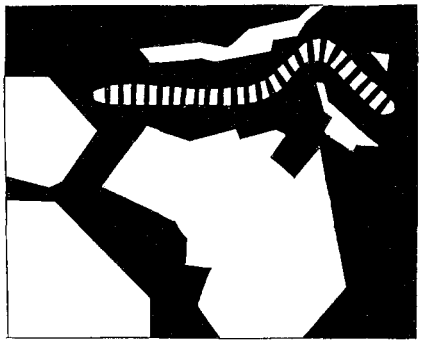
Collin passed away on the 23rd January after a long illness. He contributed much to botany and assisted many and his collections, illustrations, photographs and publications will serve as a lasting reminder of his many talents.

Acknowledgements

Much of this information was given to me by Collin several years ago but I am indebted to Dorothy for responding to several recent requests for particular details and for providing the accompanying photograph. ☺

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INC - BUSINESS

ASBS SYMPOSIUM 1990



Indo-Pacific Biogeography: At the Crossroads

Planning is proceeding well for this symposium, which will be held at the Australian National University, Canberra, on 29-30 August 1990. The registration brochure is enclosed in this *'Newsletter'*.

The theme of the symposium will be the evolution and biogeography of the biota of northern Australia, Malesia and the Pacific and Indian Ocean regions. We expect to attract leading researchers from Australia and overseas, who will speak on topics such as:

- plate tectonics of the Malesian region
- bird endemism in New Guinea
- biogeography of pollination syndromes
- biogeographic methodology
- Polynesian beetles
- orchids
- legumes
- macrofossils

In addition, there will be an 'open forum' for contributed papers on any recent research in plant systematics. This will consist partly of spoken papers and partly of a poster session.

Student Prize

We are especially keen to encourage students to attend the Symposium. To help them, we have set a concessional registration fee at $40.00 (the standard fee for registrations made on time is $85.00). *As a bonus, this symposium will inaugurate a prize for the best student paper.*

Deadlines

Intention to attend	*12 April*
Offers of papers	*12 April*
Registration	*18 May*
Abstracts due	*18 May*

If you have not yet notified us of your intention to attend, please return the postcard which accompanied the Hennig IX brochure in the last *'Newsletter'* immediately. If you do not have a postcard, write to Murray Henwood or Jim Croft at the addresses below.

Organising Committee

Dr M.J. Henwood
Research School of Biological Sciences
Australian National University
GPO Box 475
Canberra ACT 2601
Tel (06) 249 4666
Fax (06) 248 9995

Mr J.R. Croft
Australian National Botanic Gardens
GPO Box 1777
Canberra ACT 2601
Tel (06) 267 1841
Fax (06) 248 0682

Dr J.G. West
Australian National Herbarium

Dr M.D. Crisp
Australian National Botanic Gardens

Mike Crisp ☺

13TH GENERAL MEETING

The 13th General Meeting of the **Australian Systematic Botany Society Incorporated** will be held on Wednesday 29th August 1990 at the Australian National University, Canberra, following that day's symposium proceedings.

Any member wishing to place an item(s) on the agenda should notify the Secretary (Dr B.J. Conn) in writing by the 15th August 1990.

Council Elections - 1990-1991 Term

In accordance with the Constitution of the Society, nominations are called for all positions on the Council for the 1990-1991 term of office: President, Vice-President, Secretary, Treasurer and 2 Councillors.

Each nominee must be proposed by two members and his/her acceptance of nomination must accompany the nomination itself. Nominations must be on the form enclosed with this *'Newsletter'* or on a facsimile of that form.

Mike Crisp, the current Vice President, having served four consecutive terms on Council, is ineligible to continue, and will not be seeking re-election.

Barry Conn ☺

WARNING

Subscriptions for 1990

Subscriptions for 1990 were due on 1st January 1990. Unfinancial members (including those who have not yet paid for 1990) are reminded that they will cease to receive the *Newsletter* after this issue. The rate is $20.00 ($12.00 for full time students). Payment must be made in Australian dollars. Cheques should be made out to 'ASBS Inc.'. Please remit to the Treasurer, Don Foreman. ☺

REPORTS

17TH ANNUAL MEETING OF COUNCIL OF HEADS OF AUSTRALIAN HERBARIA

The Council of Heads of Australian Herbaria met at the Australian National Herbarium, on 30-31 October, 1989.

Present were Dr J.A. Armstrong (PERTH), Mr D. Bedford (NSW), Mr J.R. Croft (CBG), Mr C.R. Dunlop (DNA), Dr R.W. Johnson (BRI), Dr A.E. Orchard (HO), Dr J.H. Ross (MEL), Dr H.R. Toelken (AD), Dr J.G. West (CANB - Chairman).

Two observers were present: Mr K. Kerenga (LAE) representing New Guinea herbaria, and Mr C. Ecroyd (NZFRI) representing New Zealand herbaria. Mr A.S. George was present for a session to discuss matters pertaining to ABRS.

The principal items discussed were:

Index to Taxonomic Literature of Australia

The Council confirmed their commitment to this project, and a further attempt to obtain Kew Record updates in computerised form will be made through Terry Macfarlane, the present Australian Botanical Liaison Officer.

Facilitation of Permits for Interstate Collecting

For most states collection permits can be obtained most readily with advice from the herbarium in the state in which collection is planned. CHAH will investigate either updating the ABRS list of state contacts for permit app

lications, or put together a kit of information on what permits are needed, addresses to write to, and details of restrictions for plant collecting.

Permanent Paper for Publications

It was noted that most herbarium house journals are presently being printed on non-permanent paper. It was agreed that we should be attempting to use archival paper for publications, but cost is a major drawback.

Access to Publication of Manuscript Names

Following recent bad experiences among some herbaria, including that of manuscript names being published by overseas workers prior to publication by Australian botanists, it was decided that all herbaria should be alerted to the offenders to prevent the possibility of it happening again.

Papua New Guinea Observer

Council was pleased that an observer from PNG was able to attend the meeting. Financial assistance was obtained from the Australian Development Assistance Bureau for Mr Karl Kerenga to attend the meeting and the database workshop held later the same week. This support is greatly appreciated.

Current Taxonomic Research on the Australian Flora

The 1987 edition of this publication prepared under the direction of Dr Bob Johnson has now been published with assistance from PERTH and CANB, with printing costs being paid by CHAH. This book lists research projects in progress or newly completed, and/or gives an indication of their state of development. It covers all herbaria, universities and other taxonomic institutions in Australia, and extends to overseas workers known to be studying Australian plants. The book has been distributed to Australian contributors, and further copies are available from myself for A$20.00 each (incl. postage). CBG and CANB will compile the next edition.

Reports

Members from all herbaria reported on the activities, news, staff changes and future plans of their individual institutions.

Herbarium Specimen Database Projects; ERIN & ABIS

Brief discussions were held re the various herbarium specimen database projects running in Australia, but this was largely left for the database workshop held in Canberra later that week. Each herbarium was represented at that workshop, which aimed to coordinate the databases in all of our herbaria and to discuss liaison between herbaria. An independent report will be provided in future.

CHAH members were informed that ERIN - the Environmental Resources Information Network - set up within ABRS to design an integrated resource information system for DASETT, the Department of Arts, Sport, Environment, Tourism & Territories, will take over the role of ABIS (the Australian Biological Information System).

Australian Botanical Liaison Officer (ABLO)

A set of selection criteria for the position of ABLO have been drawn up through consultation between CHAH and ABRS.

At last year's CHAH meeting we had considerable discussions with ABRS concerning funding of the ABLO position. CHAH has now been advised that a grant of $25,000 will be provided from the ABRS Participatory Program for the ABLO position for 1989-90. In future this amount will be linked to an appropriate salary at the Royal Botanic Gardens, Kew for indexation purposes.

Australian Biological Resources Study (ABRS)

The meeting was given an outline of the reorganisation that is taking place in ABRS. The Bureau of Flora and Fauna (BFF) has been reconstituted. The overall staff structure of the ABRS and ANBG has been reviewed and the duties and classification of the scientific staff of BFF have also been reviewed.

Flora of Australia

Considerable time was devoted to discussing

various aspects of the proposal 'Flora 2001' and particularly the consequences resulting from the increased production of Flora volumes. CHAH members support the principle of 'Flora 2001' and would like to see an increase in the rate of publication of the Flora. However, concerns were expressed in relation to the proposal to use a considerable proportion of the funds from the ABRS Participatory Program for editorial and flora writing purposes. The Council believes it is important that ABRS maintains the allocation of funds for competitive grants for research into systematics of the Australian flora. The quality of the flora treatments and knowledge of Australian systematic botany largely depends on the Participatory Program funding scheme for research grants.

The Chairman has written to the ABRS Advisory Committee expressing our concerns, and we also suggested that since the Federal Government is supportive of 'Flora 2001', then every effort should be made to obtain further support from DASETT.

Census of Australian Plants (CAP)

The meeting was informed that the final draft with corrections of the Census is with ABRS. ANBG is to take on its maintenance and distribution. Complimentary copies (as hard-copy) will go to all Australian herbaria this financial year.

Australian Plant Name Index (APNI)

The members emphasised the importance of APNI to the progress of taxonomic research in Australia and for the production of the *'Flora of Australia'*. The Index must be published in the near future in order to maintain credibility with the botanical community. Discussions with Mr George included suggested cut-off points for the addition of new records, and various means of hastening the final editing processes. The Chairman wrote to Senator Richardson, the Minister concerned, seeking a commitment to complete the first edition of the Index by the end of 1990. The response indicates that the BFF has given its priority to APNI, and 31 Dec. 1989 was the cut-off date for addition of new records. It is expected that the first two thirds of the Index will be ready to submit for publication by 30 June 1990 and the remainder by Dec. 1990.

Central Register of Herbarium Specimen Photos

It was decided to set up a central register of photographs held in Australian herbaria of type specimens housed in overseas institutions. Dr Orchard will endeavour to collate the information from herbaria (in database format) by the next CHAH meeting.

CHAH Submission re Systematic Biodiversity Funding

It was decided that CHAH should make a brief submission to the Federal Government via the Chief Scientist concerning funding for biodiversity projects relating to the Australian flora.

Update of List of Microfiche held in Australian Herbaria

Since several members indicated recent purchases of microfiche of herbaria, it was agreed to update the 1979 list of microfiche of herbaria compiled by Dr Jessop and published in this Newsletter (19: 9-10). CANB will compile an updated list and distribute it.

The Role of AARNet

Dr Robin Erskine, Director, Computer Services at Australian National University informed CHAH members about AARNet - the Australian Academic and Research Network. This is a high performance computer communications network within Australia with a possible role in herbarium research, particularly with respect to data exchange.

Retirement of Bob Johnson

Members thanked Bob Johnson for his considerable contribution to the Council over many years. All members of CHAH expressed their best wishes to Bob for a happy and fruitful retirement due to begin during 1990.

J G West
Chairman
Australian National Herbarium
CSIRO, GPO Box 1600, ACT 2601 ☺

HIGHLIGHTS FROM OVERSEAS VISIT TO THE NETHERLANDS, ENGLAND, ZIMBABWE AND SOUTH AFRICA, AUGUST-SEPTEMBER 1989

1. A very interesting and stimulating week was spent at the Rijksherbarium in Leiden, including attendance at most of the sessions and one workshop of the Flora Malesiana Symposium. Many useful contacts were made with botanists from the FM area. Useful information was obtained in discussions with Jef Veldkamp concerning the taxonomy and nomenclature of *Sporobolus* from the FM area. About half of the FM taxa of *Sporobolus* also occur in Australia and Veldkamp's manuscript treatment, resulting from examination of most of the types (including those of Trinius from Leningrad) elucidates some of the problems we have been having with a number of Australian taxa. These include the taxa included within the *Sporobolus indicus* complex, extended in Veldkamp's manuscript to include the weedy species *S. pyramidalis*. Material of FM *Aristida* species was also consulted as well as the library for a number of journals not held at BRI.

I attended a meeting to discuss resources for inventorying plant resources in the south-east Asian tropics, convened by Peter Stevens and John Burley from Harvard University. The purpose of this meeting was to draw attention to the need for increased systematic collecting in the SE Asia region and the need to assist the herbaria within the region improve and sustain their level of curation.

Three main resolutions were passed at the meeting:

i. That collection in Malesia needs to be increased if taxonomic decisions made in *'Flora Malesiana'* are to be soundly based and the health of taxonomic work in the 21st century is to be conserved.

ii. Any program that does not pay attention o the distribution, mounting and preservation of collections is so much money wasted. Many institutions world wide suffer from serious manpower shortage and material or space problems.

iii. Any collection programs must pay attention to the interaction between collecting and applied aspects of taxonomy and between collecting and motivated herbarium staff.

At this meeting the function of the *South East Asian Botanical Program* (SEABOP) was explained by Neville Marchant from the Western Australian Herbarium, Perth.

2. A three week visit to the Kew Herbarium and library was extremely profitable:

i. Types of many tropical grasses of the genera *Sporobolus*, *Eragrostis*, *Eriachne*, *Triodia*, *Plectrachne*, *Brachiaria* and *Panicum* were extracted from the herbarium, photographed by the Kew photographer and subsequently presented to BRI as cibachrome prints. These amount to 269 cibachromes and will be extremely valuable for future taxonomic work in tropical Australian grasses.

ii. Useful discussion was held with Derek Clayton on his work with Mike Lazarides of the Australian National Herbarium in relation to the choice of characters for a standard world-wide list of characters for grass species to be run through the DELTA program.

iii. Chorological analysis of the Australasian region was discussed with Tom Cope in relation to combined work we are undertaking for the region.

3. Two days were spent at the British Museum (Natural History) when valuable time was spent with Richard Pankhurst in learning of new DELTA software to be used in assembling data for taxonomic revision. Two useful programs are an interactive program for the construction of identification keys (KCONI) and a database design for the production of floras and monographs. Robert Brown's Australian holotypes and some types of Asian species of *Sporobolus* which occur in Australia were photographed.

4. A visit was made to Wakehurst Place, the country extension of the Royal Botanic Gardens, on the Sussex downs. It includes the Kew seed bank incorporating ca 1% of the World's flora. I was taken on tours of both the seed bank and the garden.

5. Two visits were made to the Royal Geographical Society, one on behalf of the Royal

Geographical Society of Australasia (Qld) Inc., in connection with the latter organisation's planned expedition to Cape York in 1991 and the second in relation to the geomorphology of the Kimberley region, at which geomorphological papers and findings from Kimberley Research Project 1988 were presented.

6. I attended a symposium at the Jodrell Lecture Theatre, Kew on The Living World of the Australian Kimberley. Sixteen papers on life sciences from the results of the Kimberley Research Project 1988 were presented in the two day symposium, including my own paper 'The Grasses of the Kimberley'. I chaired one of the sessions and enjoyed interacting with fellow members of the Project. A dinner was held on the evening of the first day at a Greek restaurant on Kew Green and lunch on the second day was hosted by Ghillean Prance, Director of the Royal Botanic Gardens, at his home, following a visit to the restored Palm House.

7. *En route* back to Australia, I paid a visit to the institution where I started my botanical career, the National Herbarium and Botanic Gardens of Zimbabwe in Harare. Specimens of *Sporobolus pyramidalis* were examined to establish the range of habitat types of this species (recently established as a major pest in eastern Australia) in its native geographic range. I had discussions with the economic botanist and grass taxonomist and was given a tour of the garden by the curator, Tom Muller. A particularly interesting feature of this garden is that it has a very large percentage of the woody species of Zimbabwe represented.

8. A visit was made to the Botanical Research Institute in Pretoria. Discussions were held with Beth Gibbs Russell, grass taxonomist, regarding the choice of characters for use in producing grass manuals using the DELTA programs. A mock-up of a grass manual for South African grasses using 26 characters, of which only 6 were morphological, was inspected. Attributes included various aspects of ecology, biogeography, economic properties, flowering times and conservation status. This character list will be of benefit in the setting up of a format for a manual on Queensland grasses. Consultation was held with Mike Wells concerning the ecological behaviour of *Sporobolus pyramidalis* in South Africa.

Acknowledgements

I am very grateful to the Australian Academy of Science, the Royal Geographical Society of Australasia (Qld) Inc. and the Royal Geographical Society for supplementary financial assistance in covering travel costs.

Bryan Simon
Queensland Herbarium. ☺

BUREAU OF FLORA AND FAUNA

Two more temporary appointments have been made to the Flora Section until the end of June. Laurie Adams, formerly of theAustralian National Herbarium, is assisting the final editing of the *Australian Plant Name Index*. Diana Boyer is preparing illustrations for several volumes of the *'Flora of Australia'* to be published in the next few years.

Progress is being made on the appointment of new editorial staff, as indicated in the last report.

Dr Greg Leach, Northern Territory Herbarium, Darwin, has been confirmed as the Australian Botanical Liaison Officer at the Royal Botanic Gardens, Kew, for the 1990-91 term.

ABRS grants for 1991

The Preferred Objectives for ABRS grants in 1991 have been advertised. Copies and application forms may be obtained from the Bureau (phone (06) 274 1072 or 274 1052). Applicants are reminded that the closing date is 10 April and are advised that FAX copies of applications are not acceptable. Current grantees who have not yet completed their planned project are reminded that they must apply for continuing support since renewals are not automatic.

Description of distribution for the 'Flora of Australia'.

For the three latest volumes of the *'Flora'* - 3, 19, and 18 (now in press) - the description of geographical distribution of species and infraspecific taxa has been supplemented by listing the 'Barlow' botanical regions. Following inquiries around the botanical community and discussion by the Flora Editorial Committee it appears that this system of regions is not as relevant to the *'Flora'* as had originally been thought. It has therefore been decided to discontinue their inclusion in future volumes. Distribution will continue to be circumscribed in geographical terms together with a map.

Alex George
Bureau of Flora and Fauna, Canberra. ☺

PS.Is Alex George in the Bureau of Flora or Fauna?!?

A recent strange odour (at ANBG) revealed that Alex was in fact harbouring a deceased animal inhabitant of Australia in the form of a snake! It was inadvertantly put in his room (straight from the freezer) instead of to the Fauna Section. The inevitable result was a near evacuation of the lower level of the Botany Building at ANBG as the putrifying remains held sway!!

AUSTRALIAN BOTANICAL LIAISON OFFICER

Dublin visit

I was made very welcome at Trinity College (TCD) and the National Botanic Gardens, Glasnevin (DBN), both of which are keen to have their Australian collections looked at by specialists. Both herbaria are interesting and both are willing to lend material. The important holdings of each have been dealt with in previous articles (see E.C. Nelson, *'ASBS Newsletter'* 27: 12-13 (1981). The anomalously numbered Preiss set at TCD (and some at DBN), with Preiss's handwritten (original?) labels are interesting. TCD have a set of Sieber collections made in NSW. The TCD collection is remarkable for the fact that nothing seems to have been done to the Australian collections since before Bentham's *'Flora'*, and so are often in long outdated genus folders. Professor D.A. Webb is currently working on the first detailed inventory of the collectors represented at TCD.

Storm damage to Kew Gardens

The series of storms in January and February caused the loss of many trees and extensive damage to others, The scale of tree loss was much less than in 1987 but there were still about 150 destroyed and certain individual losses were as bad. The remaining large 200 year old *Zelkovia* fell, along with about three other trees near the main entrance. Among valuable specimens lost were the original plantings of Leyland Cypress, a *Perotia persica* and a cork oak (unusual in Britain) and the only large *Eucalyptus gunnii*. Evergreen oaks and cypresses suffered badly. The strongest gust of the worst storm in late January exceeded the 1987 wind speeds, but there were fewer strong gusts. The gardens were closed for about a week after the worst storm and again during later ones. For weeks after, large areas of the gardens, especially the arboretum, were roped off from public access. There was also damage to Herbarium roofs, and incidents involving windows blowing open. The only good thing was that there was no stock market crash this time (except in Tokyo, which was presumably not related). Whilst on the subject of weather, I should mention that no more ice has been seen, at least in this area, since I wrote my last report in November. (Acknowledgements to John Simmons, Gardens Curator.)

Index of Author Abbreviations

An updated edition is in preparation for going to press. hopefully in 1990. People who have

published a name at any rank are eligible for inclusion, and all plant groups are being covered. Anyone not included in the draft edition or knowing of names omitted may send the information, where possible including:

(1) full name
(2) date of birth (and death if appropriate)
(3) name of at least one plant described and its reference
(4) other biographical details such as alternative names used.

Information is required within six months (of the end of February). Contact R.K. Brummitt.

London phone number changes

On 6th May 1990 the existing London area telephone prefix will change to (071) or (081) depending on whether the exchange is in central or outer London. The prefix for Kew Gardens and CMI will be (081) and for the Natural History Museum [BM(NH)] it will be (071). Thus international calls will use the country and area sequence 4481 and 4471 respectively.

Visits to European herbaria

I plan to visit the following herbaria in the next months: Berlin, Lund, Geneva, Hamburg, Paris, Prague and Vienna. Please forward your requests as early as possible.

Kew Bulletin Editorship

The position of editor of Kew Bulletin and associated duties has been advertised. When filled, Mark Goode will move to other duties within the Herbarium.

Official openings of buildings

The renovated Palm House was reopened to the public on 1 December 1989 and officially opened by Prince Charles on 6 February 1990. The new Sir Joseph Banks Building for displays and storage of museum items will be officially opened by Princess Anne on 20 March 1990.

Health risks from FAA

UK Government health regulations requires the deletion of formaldehyde from preserving liquids. Consequently at Kew FAA (Kew Mixture) is to be replaced for new and old spirit collections by Copenhagen Mixture(70% ethanol, 29% water, 1% glycerol). In the meantime material in FAA has to be handled with gloves and in a fume chamber, and the waste liquid disposed of properly.

Change of name for BM

The British Museum (Natural History) was renamed The Natural History Museum in late 1989.

Future conferences

The following are some future conferences which have come to my notice.

First Kew International Compositae Conference (KWICC-1 1994), Royal Botanic Gardens, Kew, 24 July-5 August 1994. Contact: Mr C. Jeffrey.

Advances in Labiatae Science, Royal Botanic Gardens, Kew, 2-5 April 1991. Contact: Dr R.M. Harley, Kew.

Grasses of Arid and Semi Arid Regions, Linnean Society of London, February 1991. Contact: Dr G.P. Chapman, Wye College, Ashford, Kent TN25 5AH.

Third International Legume Conference, Royal Botanic Gardens, Kew, second week of July 1992. Contacts: Dr M.D. Crisp, Australian National Botanic Gardens, Canberra (the coordinator for evolutionary systematic sessions) or Dr R.M. Polhill, Kew (overall coordinator).

Other sessions; structural botany, reproductive biology, biogeography, plant/animal interactions. There are tentative plans to append a short meeting on genetic characterisation of legume crops.

Species Plantarum Project

Major Herbaria have been notified of this proposal by the Director, Royal Botanic Gardens, Kew. A second meeting of the six institutions concerned in the initial exploratory meeting (K, L, MU, NY, P, US) are to meet again in Missouri, USA, in April 1990 for more detailed discussions.

Technology corner

I recently attended a Linnean Society meeting entitled 'CD-ROM and videodisc: New Media for the Teaching and Recording of Biological Diversity.' Many readers will know about the possibilities and to some extent actualities of these technologies for storing and quickly retrieving images (e.g. flowers; illustrations of character states) which can be linked to computer databases and other programs (e.g. Pankhurst's and now Dallwitz's identification systems) and displayed on computer screens. A new device which may be less widely known is the Sony LVR-6000/LVS-6000P Laser Videodisc Recorder. This records images, still or moving, colour or high definition B&W, with or without sound, onto removable 12" write once videodiscs using a variety of image capturing devices such as scanners, video cameras, cameras on microscopes, and computers for graphics. Advantages include the portability of the recording equipment, the ability to record further images as required on unused parts of the disc (the disc is not made from a master), optional recording under computer control (i.e. indexing of images), instant replay after recording, fast retrieval averaging 0.5 seconds for any one image, and suitability for making masters for the more familiar type of videodisc. A disc can store 36,250 images, and up to ten player/recorders (LVR-6000) can be linked to one signals processor (LVS-6000P), thus multiplying by up to ten the number of on-line images. Disadvantages include the inability for these 12" discs to be played on existing players, thus severely inhibiting dissemination of collections of images to others (videodisc technology has the general disadvantage of high cost of the players), and the bottom line, ca 40,000 pounds according to the UK prices. It seems that only fabulously rich institutions will be able to afford these , and that the application will be limited to in-house or public access use.

Terry Macfarlane
Royal Botanic Gardens, Kew, Richmond
Surrey TW9 3AB ENGLAND
(Tel) 081 940 1171/4 (Fax) 081 948 1197 ☺

REVIEWS

The Potatoes of Bolivia: Their breeding value and evolutionary relationships. By J.G. Hawkes and J.P. Hjerting. *Oxford Science Publications, Oxford, 1989. 472 pp. 60 Figures, 28 Maps. 40 pounds.*

In 1969 these two authors published *'The Potatoes of Argentina, Brazil, Paraguay and Uruguay'* and have now continued their trek northwards to Bolivia. While not titles of gripping interest to many Australians except potato breeders, these volumes are models of the detailed study of the species related to an important world crop - the potato. Not only is the taxonomy presented in detail. The following chapter headings indicate briefly the areas covered:- Breeding value of Bolivian potatoes; Cytogenetics and crossability; Species concepts and evolutionary relationships; Phytogeography and ecology; Potato exploration in Bolivia; Taxonomic methods; Classification of the genus *Solanum*. However the treatment does not finish there as three appendices list herbaria that were consulted, give species and subspecies abbreviations and then details of collectors and their collections. All followed by a large bibliography of about 560 titles.

For each of the 42 species specimens are cited, range, habitat, cytology, natural and artificial hybrids, breeding value which includes reaction to up to 25 items are discussed thus making this volume, like the last, essential reference works for scientists concerned with potato breeding.

However the volumes are also models for the detailed study of the relatives of crop plants and if ever the conservation of wild species is to be justified they can be used in support.

One only hopes that the two authors will live long enough to reach and write on the equally rich areas of Peru and Colombia.

One might also hope that current work in Australia on the genus *Glycine* might be followed by such impressive monographs.

D.E. Symon
Adelaide ☺

The Australian National Dictionary: Australian Words and their Origins. Ed. W.S. Ramson. *Oxford University Press, Melbourne, 1988. 814 pp. $75.00.*

> 'Now he's courting,
> So transporting,
> Nothing his mind can fix,
> - Not even **Bot-an-y**!
>
> *Botany p.85*'

We Australians think we are recognised for our pronunciation rather than our version of the English language. Now that the *'Australian National Dictionary'* is available, we might do well to reconsider our linguistic image. Ten thousand words (or new meanings for old words) have been added to English by Australians.

The *'Australian National Dictionary'* is a treat. It is not just another dictionary of meanings, pronunciations and etymology. It actually cites the references of sources of meanings. Consequently it embraces a history of the development of the Australian vocabulary.

Many of the words, of course, are relevant to plants because of our rich use of common names. The oldest entry I found was YAM with a 1770 citation:

> '**1770** J. BANKS *Endeavour Jrnl.* (1962) II. 127 The only vegetables we saw them use were Yams of 2 sorts, the one long and like a finger the other round and covered with stringy roots, both sorts very small but sweet.'

The definition reads:

> '[Transf. use of *yam* the starchy, tuberous root of *Dioscorea* species.] Any of several plants having an edible tuberous root, incl. MURNONG, and species of the genus *Dioscorea* (fam. Dioscoriaceae) and of other families; the tuber of these plants; *native yam*, see NATIVE *a.* 6 *a.*; *wild yam*, see WILD 1. Also *attrib.*'

And so you are lead to a research of MURNONG and WILD and WARRIGAL and any which-way that your curiosity might take you.

No doubt you will become aware that terms are missing. I was disappointed when discouraged from using *Split Arse* for *Capparis* spp. in the *'Flora of Australia'*. *Split Jack* (*C. lasiantha*) was acceptable but even that did not 'make it' into the *'Australian National Dictionary'*. Why? Certainly not for reasons of prudery! Readers who did the research for the dictionary read 9,500 works to 'find' the words included in the dictionary. Perhaps no one wrote about *Capparis* in the selected publications! Perhaps the common names are not of Australian origin! Perhaps the terms don't have sustained popular use!

Doubtless Bernadette Hince (Science Editor) badjered many of you for your expertise in various areas as the work was being compiled - certainly some well known botanists appear in the acknowledgements. The dictionary gives every indication of having very solid academic foundations and of being very thoroughly researched. The *'Australian National Dictionary'* must be regarded as the most comprehensive and authoritative reference on the Australian contribution to Australian English. It is compelling that a copy be on your shelves - even if you are not a bibliophile or a neologist.

Helen Hewson
Bureau of Flora and Fauna, Canberra. ☺

The genus Utricularia - a taxonomic monograph. By Peter Taylor. *Kew Bulletin Additional Series XIV pp. xi, 724 (October 1989). HMSO, London. Price 40 pounds Sterling.*

More than forty years' study culminate in this impressive monograph. It demonstrates what can be achieved with essentially classical taxonomic techniques - a practical treatment, the morphology thoroughly and consistently researched and illustrated, and perceptive discussion of evolution, reproduction and distribution. Peter Taylor is refreshingly frank, however, in explaining his work and its limitations, often highlighting fields for further research such as DNA sequencing and cytology; but this monograph provides a marvellous platform for such research.

Utricularia or bladderworts, those fascinating marsh and aquatic plants with traps that capture and digest minute fauna, consists of 214 species. The genus occurs in most countries but is concentrated in tropical and subtropical

regions. Fifty-seven species occur in Australia and New Zealand. For the keys, species are divided into groups for geographical regions; there is one for Australia, New Zealand and New Caledonia. Great weight is placed in the keys on corolla colour, but the other characters and states used are readily observable.

The genus is divided into two subgenera (one being subgenus *Polypompholyx*, formerly treated as a genus in Australia) and thirty-five sections. All taxa are fully described, with synonymy and a discussion. Each species is illustrated by a full page of the author's meticulous line drawings and there are scanning electron micrographs of a selection of seeds, showing a very diverse array of shapes and surfaces.

Peter Taylor has previously described new species of *Utricularia*, and the monograph contains very few new taxa. The only one relevant to our region is sect. *Australes* which contains two Australian species and one in New Zealand.

No infraspecific taxa are recognised. Taylor admits that this would imply 'a knowledge of relationships that I do not have'. He has, however, attempted to address the evolution of the genus and presents a systematic sequence.

The descriptions are comprehensive but not too long, consistent throughout the work except where, occasionally, material was not seen, e.g. the fruit of some species. Terminology is straightforward, the only one that may be unfamiliar being *turions* for the clustered reduced leaves that form on the shoots of some species in periods of stress. For a group of plants that are quite difficult to collect (e.g. the traps easily become detached as the plants are extricated from the soil), the completeness of the work reflects remarkable application on the part of the author, who saw some 90 species in the field, and the many people who assisted by specially making collections.

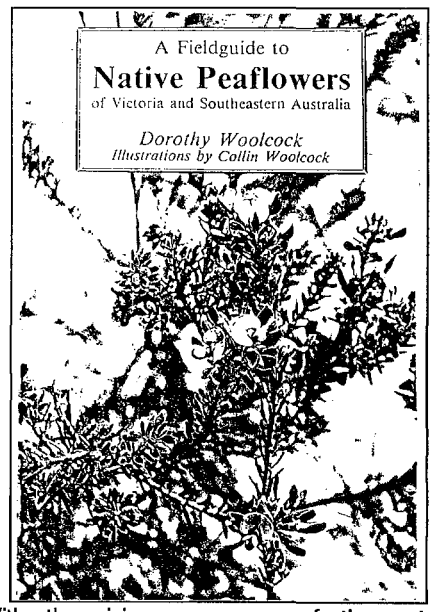
The Index leads the reader only to main entries, by taxon (not page) number. This works reasonably well since left-hand running headings give the sectional names and right-hand the species.

A delightful feature of the monograph is the idiosyncratic comment that appears from time to time. In discussing techniques for collecting specimens in spirit, for example, Taylor describes the preferred solutions and adds that 'in emergency any potable spirit will do if the collector is prepared to make the sacrifice.' Again, the very fine peduncle of the minutely flowered *U. quinquedentata* is described as 'only a little thicker than a hair of my head and often less than half as thick as one from my beard.' For readers who do not have access to the indumentum of Peter's head, the precise thickness is given in the description.

I congratulate Peter Taylor for his achievement, one of the few large world monographs to have been completed. I feel sure that it will do far more than, as he hopes in his introduction, 'prove at least to be useful.'

Alex George
Bureau of Flora and Fauna, Canberra. ☺

A Fieldguide to Native Peaflowers of Victoria and Southeastern Australia. By Dorothy Woolcock. Illustrations by Collin Woolcock. *Kangaroo Press in association with The Society for Growing Australian Plants: Kenthurst, NSW. Pbk., 120 pp., 165 line drawings, 46 colour plates. 1989. $14.95. ISBN 0-86417-259-1.*



With the rising awareness of the natural environment in general and our indigenous flora in particular, a plethora of field guides is appearing on the market. Many concern

taxonomic groups of special appeal, such as eucalypts, acacias, banksias and melaleucas. The present book is a labour of love on a group which has been neglected by the popular press until now: the pea-flowered legumes. To my knowledge it is the first field guide specifically about Australian native peas.

This is no ordinary field guide. It is born out of fifteen years' patient study by the Woolcocks since Collin's retirement. This husband and wife team worked as amateurs but were scarcely naive. They consulted with professional botanists and the official herbaria, while at the same time assembling a reference collection from their own extensive field work. Jim Ross's obituary of Collin Woolcock earlier in this *'Newsletter'* relates their working life in more detail.

This delightful little book is the culmination of a series of articles by the Woolcocks on the peas which have appeared in *'Australian Plants'*. The eye is immediately caught by Collin's neat line drawings, one illustrating each taxon from genus to variety, 165 in all. His style is distinctive and idiosyncratic but botanically accurate and pleasingly uncluttered with irrelevant detail. I have the impression that these deceptively simple drawings are done with great care. It is a pity that some detail has faded in the printing. With each drawing is a short description by Dorothy in relatively plain English but, like the drawings, accurate. Both a Latin and a common name are given for each taxon, as well as details of distribution, habitat and flowering period.

Unlike some oversized 'field guides', this book is small enough to fit in a large pocket and will not cause the hiker to collapse under its weight. The bright cover carries a nice sharp photo of *Aotus subspinescens* in flower. All known native species of 27 genera in Victoria are included in the book but the coverage of 'southeastern Australia' is only through the extension of some distributions outside the state. Thus the title is a little misleading. The majority of the book is occupied by the descriptions and illustrations of individual taxa, arranged alphabetically. A short, well written introduction outlines the diversity of the family, describes and illustrates its diagnostic floral characters and provides a checklist of characters useful in identifying genera and species. A map of Victoria shows the 13 Land Conservation Council study areas. These are coded and used to cite distributions within Victoria for each taxon. As a bonus, there is an attractive block of 46 colour plates in the centre of the book. At the end is a glossary, a short bibliography and an index.

The accuracy and naturalness of the drawings, together with the accompanying descriptions, should ensure that an intelligent non-specialist can identify plants in the field using this book. However, a key and some diagnostic notes for species which are difficult to separate would have increased its usefulness. I found a few small errors which are scarcely worth mentioning. Consultation of herbaria by the authors has ensured that most names are accurate but two should be corrected: *Indigofera australis* var. *signata* is now known as *I. adesmiifolia* and *Goodia 'latifolia'* should be spelled *G. lotifolia*.

Mike Crisp
Australian National Botanic Gardens ☺

RECENT PUBLICATIONS

Flora of South-eastern Queensland Volume 3. By T.D. Stanley & E.M. Ross. *Queensland Department of Primary Industries, Brisbane. 532 pp., 64 figures, 1989. ISBN 0 7242 2523 4. ISSN 0728-0688.*

The final volume of this three volume set documents the monocotyledons and the gymnosperms occurring in Queensland's south-eastern corner.

It contains descriptions of over 1100 species, keys to identification, 64 plates of line drawings, information on distribution, habitat, weed status and known poisonous properties, and an index to all three volumes.

The region covered by the *'Flora'* is from the Queensland/New South Wales border east of Talwood, north to t*he Dawes Range and Bundaberg area.

It is available from the Information Centre, Queensland Department of Primary Industries, GPO Box 46, Brisbane 4001, at a cost of $40 plus $7.50 postage and packing. Volumes 1 and 2 are still available at a cost of $30 and $40 respectively plus $7.50 postage and packing

each, or $9 for either two or three books.

Rainforest trees of Mainland South-eastern Australia. By A.G. Floyd, Forestry Commission of New South Wales. *Inkata Press, Melbourne (1989). ISBN 0 909605 57 2. 420pp. $45.*

Field Guide to Eucalypts. Vol 2. South-western and Southern Australia. By M.I.H. Brooker & D.A. Kleinig. *Inkata Press, Melbourne (1990). ISBN 0 909605 59 9. 428 pp. $75.*

Biology and Utilization of the Cucurbitaceae. By D.M. Bates, R.W. Robinson & C. Jeffrey. *Cornell University Press, (1990) January.*

The Herbarium Handbook. By I. Forman & D. Bridson (eds). *Royal Botanic Gardens, Kew (1989). 13.80 pounds including postage and packing.*

Advances in Legume Biology. By C.H. Stirton & J.L. Zarucchi (eds). *Monographs in Systematic Botany from the Missouri Botanical Garden, Number 29 (Jan. 1990). US$100.00 plus postage ($2.50 for one book).*

Morphology of Flowers and Inflorescences. By F. Weberling. *Cambridge University Press (1989).* Translated from the German edition by R.J. Pankhurst. ☺

REQUEST

I received news recently that I have been awarded a grant from ABRS to complete a treatment of *Cullen* for the *'Flora of Australia'*. So after the Hennig meetings (23-27 August, 1990) I'll be taking off through the southeastern quarter of Australia to do my collecting. Would any other researchers, or particularly graduate students, who need to do field work in the same region at the same time, please contact me.

Jim Grimes
The New York Botanical Garden
Bronx, New York 10458-5126 USA ☺

AUSTROBAILEYA

A JOURNAL OF PLANT SYSTEMATICS

Austrobaileya is the journal of plant systematics published by the Queensland Herbarium, Brisbane. It is devoted to the publication of results of sound original research and informed discussion on plant systematics, with special emphasis on Queensland and nearby tropical areas. One issue is published each year, in October. Papers in the most recent issue, Volume 3, No. 1, covered such subjects as newly described species of grasses, eucalypts and orchids, and revisions of *Zornia* (Fabaceae), and genera of Vitaceae and Asclepiadaceae.

Until recently, it has been available free of charge to a select clientele, because only a small number could be printed due to rising printing costs and a limited budget. However our policy regarding charges has changed and now, beginning with 3(1), the journal is obtainable on subscription. This means we can now advertise the availability of the Journal, and perhaps reach those who are interested in tropical botanical research but do not have the opportunity to obtain the journal through their workplace.

Austrobaileya is priced at A$20 (individual subscription) or A$35 (institutional subscription) per issue, including postage and handling. It is available from the Editor, *Austrobaileya*, Queensland Herbarium, Meiers Road, Indooroopilly, QLD 4068, Australia. The Editor may also be contacted if any other information is required.

E.M. Ross
Editor

NOTICES

XVTH INTERNATIONAL BOTANICAL CONGRESS 1993

The Organizing Committee of the XVth International Botanical Congress wishes to announce that the XV IBC will be held in the Tokyo area during August and September, 1993: nomenclature session 23 - 27 August; general session 28 August - 3 September. The first circular of the XV IBC will be prepared in 1990 and distributed to those who are interested in the Congress. Request for information and other questions and comments may be sent to the Secretariat at:

XV International Botanical Congress Tokyo
Department of Botany, Faculty of Science
The University of Tokyo, 7-3-1 Hongo
Bunkyo-ku, Tokyo 113 JAPAN

Kunio Iwatsuki
Secretary General
XV International Botanical Congress ☺

FAX NUMBERS FOR AUSTRALIAN HERBARIA

Format: Australian dialling sequence above;
International dialling sequence below.

ABRS/BFF	DNA
06 249 1750	089 32 3849
[61] 6 249 1750	[61] 89 32 3849
AD	HO
08 223 1809	002 20 2186
[61] 8 223 1809	[61] 02 20 2186
BRI	MEL
07 371 6655	03 650 5917
[61] 7 371 6655	[61] 3 650 5917
CANB	NSW
06 246 5000	02 251 4403
[61] 6 246 5000	[61] 2 251 4403
CBG	PERTH
06 248 0682	09 367 0515
[61] 6 248 0682	[61] 9 367 0515 ☺

RUDI LEMBERG TRAVELLING FELLOWSHIP

Nominations are invited for the Rudi Lemberg Travelling Fellowship in 1991/92. The Fellowship commemorates the contribution of Professor M.R. Lemberg, FAA FRS, to science in Australia.

The Lemberg Fellow may be drawn from any field of biology but special consideration will be given to those areas in which Professor Lemberg had a special interest, namely biochemistry, conservation and the Australian flora.

The Australian Academy of Science awards Fellowships to enable:

(a) Australian scientists of standing to visit Australian scientific centres and to deliver lectures to scientists and to the general public.

(b) overseas scientists of standing to visit scientific centres in Australia and to deliver lectures to scientists and to the general public.

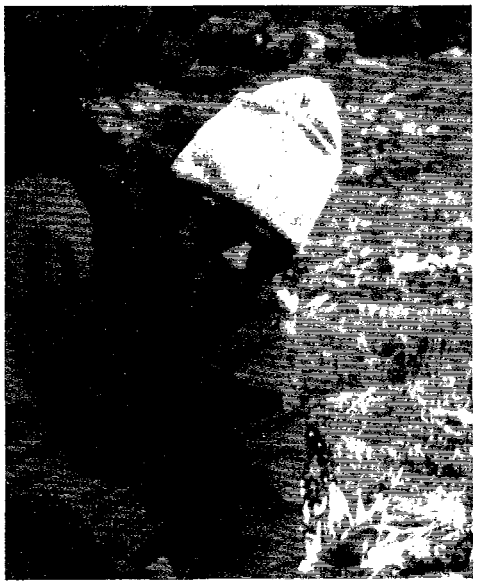
Fellowships are tenable for visits to and within Australia of not less than two weeks and not more than three months. Overseas and domestic air fares and a daily allowance are provided.

Nomination forms are available from the Academy secretariat. Nominations should include a publications list, a detailed curriculum vitae and a proposed itinerary. Nominations are confidential and should be addressed to:

The Executive Secretary
Australian Academy of Science
GPO Box 783
Canberra ACT 2601 Australia

Telephone enquiries: Mrs Faye Nicholas
(06) 247 5777

Nominations close on 30 April1990. ☺



A Yowie or a Feral Botanist?
Answer next issue.

IUBS COMMISSION FOR TAXONOMIC DATABASES

in partnership with the Systematics Association, the Linnean Society and the European Cultural Center of Delphi

- INTERNATIONAL SYMPOSIUM -

Designs For A Global Plant Species Information System

Location: European Cultural Center of Delphi, Greece 12-16 October 1990

International symposium for the exposition of a range of designs for a global species diversity information system for plants. Such a design should enable scientists in all countries to access information on the names, classification and geographical distribution of all of the world's plants. The designs would involve technical aspects both of biological computer information systems and decision-making amongst taxonomists. Assessments of the type of demand from conservation, agroforestry, natural products research and other research applications will be set in scenarios for implementing such a system.

PROGRAM

Session 1: The demand for a global plant species information system
Session 2: Botanical decision-making and data collection strategies
Session 3: Data structures and logical designs
Session 4: System configuration - machines and communications
Session 5: Management, ownership and funding

Each session will involve formal presentations as well as organised group discussions. There will also be demonstrations and poster sessions during the symposium.

Further details from co-organizers:

George F. Russell
Botany Department
NHB-166
Smithsonian Institution
Washington DC 20560 USA

Frank A. Bisby
Biology Department, Building 44
University of Southampton
Southampton S09 5NH UK

Roger Hnatiuk
Australian National Botanic Gardens
GPO Box 1777
Canberra ACT 2601 Australia

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CODATA ☺

PLANT TAXONOMIC LITERATURE IN AUSTRALIAN LIBRARIES

Copies of *'Plant Taxonomic Literature in Australian Libraries'* by Nancy Burbidge are available from Dr Laurie Martinelli, Managing Editor of *'Australian Systematic Botany'*, for no charge. Members of ASBS in Melbourne are welcome to call at 314 Albert Street East Melbourne and collect a copy; please ring Laurie Martinelli on (03) 418 7326. Members outside

Melbourne, please send a cheque for $6.50 to cover postage and packing. Please make cheques out to 'Collector of Moneys, CSIRO'.

Laurie Martinelli
CSIRO Australia, Editorial Services Section
PO Box 89, East Melbourne, VIC, 3002 ☺

LETTER

The Institute of Banksia Studies has submitted the following letter for publication in the *'Newsletter'*, with permission from Cyril Appleby.

PO Box 390
Moruya NSW 2537

David Morrison and Michael Crisp
Institute of Banksia Studies

Dear Colleagues,

I have been overseas on a post-retirement holiday for most of the time since delivering my lecture at the July 1989 ASBS Symposium and the appearance of your responsive article, 'An Hennigian Analysis of the Eukaryote' in *'Austral. Syst. Bot. Soc. Newsletter'* 60: 24-26 (1989). This will explain (in the words of the late John Foster Dulles, sometime Presbyterian lay preacher and US Secretary of State) the absence of 'instant and massive retaliation' from myself. The expanded version of my lecture is presently *in press* in *'Aust Systematic Botany'* Vol. 3 (1990). The situation in respect of your profession is even worse than you suppose. Not only do these newer studies on haemoglobin origins require the disappearance of botany and zoology as separate disciplines (not before time); they must now be regarded as sub-disciplines within microbiology. My published article talks about haemoglobin in the bacterium *Vitreoscilla*. Since writing it others have presented new work on the haemoglobins of two other bacteria, *Escherichia coli* and *Alkaligenes eutrophus*. Yet others are proposing that the first animal cell was a primitive (amoeba-like?) nucleated organism that engulfed and nurtured a bacterium which became the first mitochondrion. The first plant cell also had to engulf a cyanobacterium, which became the first chloroplast.

To falsify your fantastic phylogeny, in which monocots precede insects which precede vertebrates which precede dicots (fig.1; your article) it will be necessary to demonstrate the presence of haemoglobin in monocots. In all seriousness, I seek your help to accomplish this.

As I see the situation, because monocots do not form nitrogen fixing root nodules, and because plant haemoglobin genes are expressed abundantly only in such nodules, the common prejudice is that plant haemoglobin is present only in dicots. By smuggling modified *Parasponia* or *Trema* haemoglobin genes into tobacco one can demonstrate their expression in root tips. The implication is that tobacco (and other non-nodulating dicots and monocots?) have the natural ability to turn on their own haemoglobin genes to make tiny amounts of native haemoglobin in root tips. After looking at sugar cane setts and *Zea mays* seeds, both of which produce fat, succulent roots, maize has been chosen by a USA colleague as a monocot for mass production of roots from which the terminal 1 mm will be cut off into liquid nitrogen for accumulation until enough material is available for an attempt at haemoglobin isolation and purification.

It has been a matter of chauvinistic pleasure that the first non-leguminous symbiotic haemoglobins were purified in my laboratory from Australasian species of *Parasponia* and *Casuarina*, and the first nonsymbiotic dicot haemoglobin was obtained from *Trema tomentosa* cv. 'Appleby's Pride' growing on my property at Moruya. How nice it would be if the first nonsymbiotic monocot haemoglobin could be isolated from an Australasian genus. Can you think of any Australian monocot which produces abundant, easily-available large seeds which germinate rapidly in sand or vermiculite or on blotting paper to produce large succulent primary roots whose tips are not full of polyphenol oxidase or other browning enzymes? Or, are there Australian genera whose stems can be cut, like sugar cane, to produce abundant, succulent roots from nodes or elsewhere?

With best wishes,
Sincerely

Cyril Appleby
Honorary Research Fellow CSIRO ☺

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY PUBLICATIONS

EVOLUTION OF THE FLORA AND FAUNA OF ARID AUSTRALIA

Edited by W.R. Barker & P.M. Greenslade. ASBS & ANZAAS, 1982. Price $20.

This collection of more than 40 papers will interest all concerned with Australia's dry inland or the evolutionary history of its flora and fauna. It is of value to those studying 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; concluding remarks.

FLORA AND FAUNA OF ALPINE AUSTRALASIA: AGES AND ORIGINS

Edited by Bryan A. Barlow. ASBS & CSIRO, 1986. Price $21.

The alpine environments of Australia, New Guinea and New Zealand differ from each other in terms of topography, genesis, climate and biota. They also contrast strongly with alpine habitats in the northern hemisphere. Paleoclimatology, paleobotany, biogeography, ecology and plant and animal systematics have been used here to given an understanding of the biohistorical relationships of these isolated islands of alpine terrain in the southern hemisphere.

SYSTEMATIC STATUS OF LARGE FLOWERING PLANT GENERA

ASBS Newsletter no. 53, edited by Helen Hewson. December 1987. Price $5.

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

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY NEWSLETTER

Back issues of the *Newsletter* are available from number 26 (March 1981) onwards, excluding nos 29 and 31. Here is the chance to complete your set. Cover prices are $3.50 (nos 26-59, excluding 53) and $5.00 (nos 53 and 60 onwards).

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The Society

The 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 and entitles the member to attend general and chapter meetings and to receive the *'Newsletter'*. Any person may become a member by forwarding the annual subscription to the Treasurer. Subscriptions become due on the 1st January.

The Newsletter

The *'Newsletter'* appears quarterly and 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 pages in length) will be considered. Contributions should be sent to the Editor at the address given below, preferably as an unformatted word-processor or ASCII file on an MS-DOS or Macintosh diskette accompanied by a printed copy, or as two typed copies with double-spacing. All items incorporated in the *'Newsletter'* will be duly acknowledged. Authors alone are responsible for the views expressed.

Notes

The deadline for contributions is the last day of February, May, August and November.
ASBS Annual Membership is $20 (Aust); students (full-time) $12. Please make your cheque out to *ASBS Inc* and remit to the Treasurer.
Advertising space is available for products or services of interest to ASBS members. Current rate is $100 per full page, $50 per half page or less. Contact the *'Newsletter'* Editor for further information.
All address changes should be sent to the Treasurer.

Editor

Mrs B. Barnsley
Tel (06) 286 1805

Associate Editor

Dr M.D. Crisp
Tel (06) 267 1821

Australian National
Botanic Gardens
GPO Box 1777
CANBERRA ACT 2601

Fax (06) 248 0682

Cover

Don Fortescue

Austral. Syst. Bot. Soc. Newsletter 62 (March 1990)

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