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FROM THE PRESIDENT

HANSJOERG EICHLER RESEARCH FUND

The research fund has sufficient resources to provide several small research grants in 1996. The ASBS Council is working on the application forms and procedures for operating the grants program.

FORMATION OF AUSTRALIAN SYSTEMATICS SOCIETY

The formation of this society occurred late last year. Mike Crisp's article on the background and aims of this society is included in this newsletter.

The ASBS is the oldest systematics society in Australia and has successfully promoted plant systematics. The Australian Systematics Society will provide another voice for systematists in Australia.

MELBOURNE CONFERENCE: 29 SEPTEMBER TO 5 OCTOBER 1996

The 1996 annual meeting of ASBS will be held at the Melbourne Conference on *The Scientific Savant in Nineteenth Century Australia: a Celebration of the Life, Times and Legacy of Ferdinand von Mueller* and the future of taxonomic research in Australia *Beyond the Floras*. Professor Pauline Ladiges will present the Nancy Burbidge Memorial Lecture.

Gordon Guymer
President, ASBS Inc

ARTICLES

CLADISTICS WORKSHOP

Jenny Hart
School of Biological Sciences
The University of Sydney

The ASBS workshop "Cladistic Analysis: Morphological and Molecular" was held on the 25-29th September 1995 at ANU, Canberra. The workshop was convened by Mike Crisp, and Mike, John Trueman and David Morrison taught the course with assistance from Belinda Alvarez and Greg Chandler. The course had 34 participants from around Australia and New Zealand, including not only botanists but also entomologists, zoologists and a mycologist.

Most of the lectures and pracs were held in the Faculties Teaching Centre, which was rather cold due to an industrial dispute and picket line at entrances to the campus preventing the supply of goods (such as paper, the computers kept reminding us!) and the repair of the building's heating system.

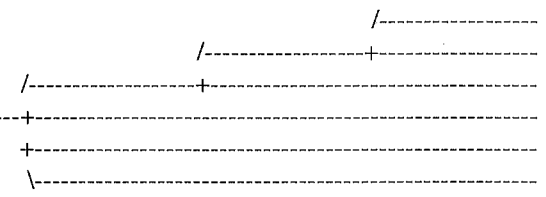
The lectures were well presented and well dispersed through the course, and were used to teach the theoretical principles of phylogenetic reconstruction for application to both

morphological and molecular data. John spoilt the illusion of a well prepared lecture by pointing out that the time on the computer screen in the overhead he was showing us was actually during lunchtime, less than an hour before.

The practical classes introduced several computer software packages for phylogenetic analysis, including MacClade, PAUP, PHYLIP and Hennig86. These classes were most enjoyable, enabling each of us to work at our own speed and ask questions or for assistance. However, when it came to experiencing Hennig86, many people were pleased to learn the command "yama" to quit. We were also introduced to some computer programs used with molecular data to align DNA or protein sequences. We had been encouraged to bring along and analyse our own data sets, which enabled us to apply what we were learning to data collected on organisms that we were familiar with.

To thank those who ran the course, we thought we'd demonstrate the skills we had learnt and created a data set on the lecturers and demonstrators of the course, using ourselves as the dubious and somewhat polymorphic outgroup. I have my doubts about whether we took in the parts of the course dealing with selecting characters with evolutionary meaning and assessing homology when creating this data set. This data set was presented to Mike, John and David at the BoZo happy hour on the Friday afternoon before Coopers and Cladistics. However, there were some mistakes in the original analysis presented, mostly mislabelling of states, caused by hurriedly trying to assemble the data set without attracting the attention of David Morrison, who was curious as to what we were doing in the corner of the computer room that Friday afternoon. Mike Crisp pointed out the errors, and I have corrected and rerun the analysis.

The data set consists of six taxa and 18 characters which are provided below. Two minimal length trees were found in an exhaustive search by PAUP and the strict consensus of the two trees is shown. The two resulting trees differed in their positioning of David Morrison. Further work to resolve this discrepancy may wish to be undertaken in a future cladistics course.



Data Matrix

	Mike Crisp	**David Morrison**	**John Trueman**	**Belinda Alvarez**	**Greg Chandler**	**Outgroup**
wears glasses City	yes Canberra	no Sydney	yes Canberra	no Canberra	no Canberra	no Sydney
At Tilley's on Thursday	no	yes	no	no	yes	yes
Loves Hennig 86	no	yes	no/yes	?	?	no
noise output	lowest	high	low	lowest	medium	medium
wears tshirts	yes	no	no	no	yes	?
hair on head	yes	no	no	yes	yes	yes
beard	no	yes	yes	no	no	no
lecture advance preparation	yes	no	no	?	?	?
works on plants	yes	yes	no	no	yes	no
has PhD	yes	yes	yes	no	no	no
rides bicycle rollerblades	bicycle	?	bicycle	rollerblades	no	no /
sloppy joe	yes	yes	no	no	no	no/yes
has uni position	yes	yes	no	no	no	no
former ASBS editors	yes	yes	no	no	no	no
Mimosoideae vs Faboideae	Faboideae	Mimosoideae	?	?	Faboideae	?
no children children	children	children	children	children	no children	/
sandshoes	yes	no	no	no	yes	yes/no

COLLECTING IN COBOURG PENINSULA, 1961

George Chippendale
4 Raoul Place,
Lyon, ACT 2606

During early 1961, while I was in the herbarium at Alice Springs, officers of the Animal Industry Branch were planning a trip to Cobourg Peninsula, so I was included to collect plant specimens. There had been collections before, and these are listed in "Fauna Survey of the Port Essington District, Cobourg Peninsula" (Div. Wildlife Res. Tech. Paper No 28, 1974). Mostly, these collections are cited in Bentham's Fl. Aust (1863 - 1878). The veterinary officers were interested in capturing some of the feral animals which had been abandoned in the area by an earlier British settlement at Raffles Bay. These animals included Timor ponies, banteng cattle and buffalo.

On July 13 July 1961, with my assistant and friend Des Nelson, I met Stock Inspector Arnold Baker at Pine Creek, and also Ron Withnall, Crown Law Solicitor for the N.T., and Ralph Demp from the Forestry and Timber Bureau. We had refreshments and "discussions" at the Pine Creek Hotel, and somewhat later camped at the Mary River, which now forms a boundary of Kakadu National Park. Next day we passed the South Alligator River and Barramundie Creek, both now in the National Park, and later Red Lily Lagoon, now apparently called Billabong, where I collected the first specimen for the trip, the red waterlily *Nelumbo nucifera*. We saw lots of magpie geese and many buffalo during the day, and camped at Oenpelli Settlement, now just outside the Park. On Saturday 15 July we left Oenpelli, following a faint track northwards, accompanied by several aboriginals who were to help in guiding. Interesting plants collected during the day included *Trachymene didiscoides, Ptilotus distans, Goodenia armstongiana, Hibbertia brownii, Eucalyptus miniata,* and *Pachynema dilatatum*. We covered about 44 miles during the day. On 16 July we drove to Murganella Creek in the middle of a large plain, and spent most of the day reconstructing a small makeshift bridge to get our three Landrovers across. We camped in the *Melaleuca viridiflora* community fringing the plain. Other plants collected included *Lobelia dioica, Limnophila brownii, Stylidium schizanthum, Xanthostemon paradoxus,* and *Coldenia procumbens*. Only 13 miles travelled this day.

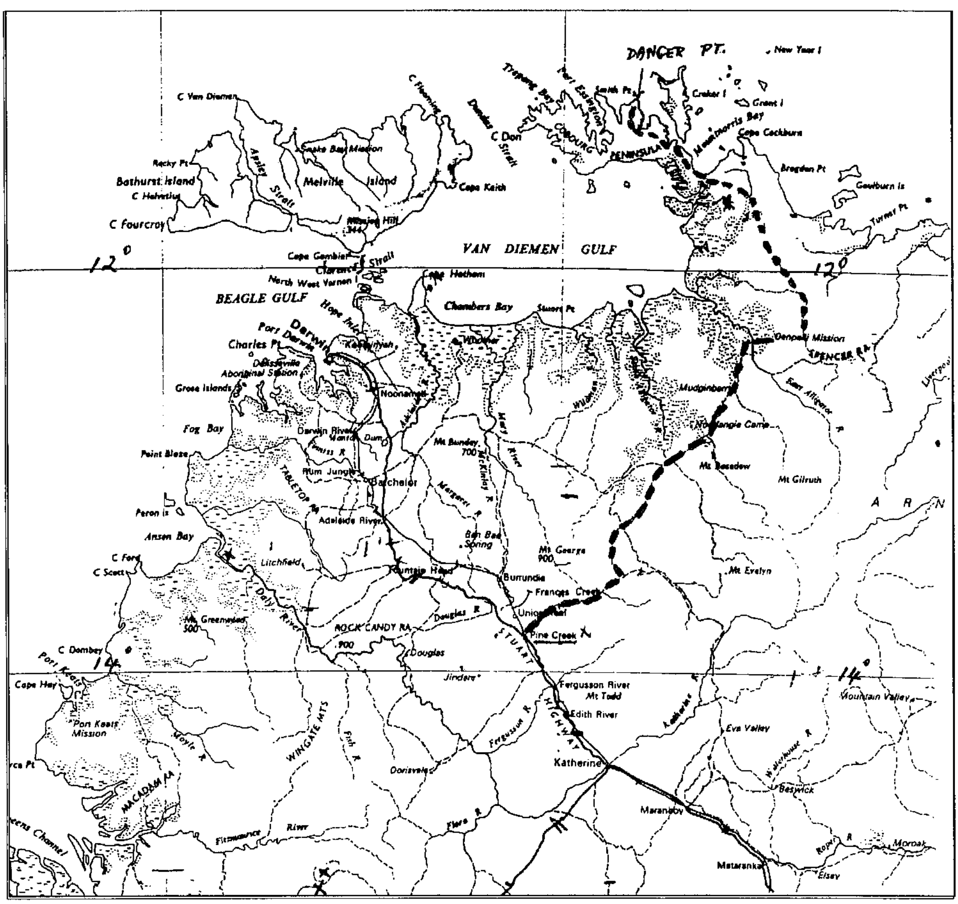
On Monday 17th July, the aboriginals decided to walk back to Oenpelli, and some time after they left we saw fires, so we guessed they were firing the country as they walked. We were to see the effects on our return trip. This day we passed through forests of *Eucalyptus tetradonta,* the bark of which is used by aboriginals in bark-painting, *E. confertiflora, Acacia aulacocarpa, Xathostemon paradoxus,* and had lunch in the shade of the fringing *Casuarina equisetifolia* at Mountnorris Bay. Later we passed an old timber camp in a stand of Callitris intratropica, and only a few miles further on we made camp on Buffalo Creek Beach, opposite Croker Island. About 42 miles were covered, and we had also collected the yellow-flowering *Cochlospermum fraseri*. On the beach sand we collected *Euphorbia atoto, Tribulus cistoides, Vitex rotundifolia* and *Ipomoea pes-carprae* subsp. *brasiliensis*. Behind the beach was a forest of *Eucalyptus papuana*, and in a depression we collected the samphire *Tecticornia australasica, Sesuvium portulacastrum*. Also, on a dune behind the beach we collected *Spinifex longifolius, Flueggea virosa* ssp. *virosa*, and *Ficus opposita* var. *micracantha*, while at the tidal edge of the sea we got the mangroves *Rhizophora stylosa* and *Ceriops tagal*.

We covered 14 miles on 18th, being held up for a lot of time on a very small, steep creek where the Forestry vehicle became bogged. We cut logs of the palm *Gronophyllum ramsayi* to

make a crossing, and using a hand-winch, got the Forestry vehicle out of the bog by about midnight. Interesting plants during the day were *Philydrum lanuginosum, Maranthes corymbosa, Melastoma affine,* the orange-flowered *Asteromyrtus symphiocarpa,* the climbing *Stenochlaena palustris,* and the waterlily *Nymphaea violacea.* During the afternoon we had seen a number of the Banteng cattle which seemed "toey" as Des recorded in his diary.

Next morning we added more logs to the crossing and all crossed without further incident. Specimens this day included the fern *Dicranopteris linearis, Utricularia sp, Osbeckia australiana, Comesperma secundum, Choriceras tricornis, Stylidium leptorrhizum, Eucalyptus nesophila* (first mainland record), and the ubiquitous *Livistona humilis.* Nine miles traversed, and 25 specimens collected.

Soon after leaving camp on 20th July, Des cut down a tree of *Eucalyptus porrecta* for specimens, and we drove on through rather thick scrub towards Danger Point. We saw a Timor pony and a buffalo in a lagoon and arrived at the eastern shore of the Danger Point peninsula. We saw a launch off shore, and later, after some people landed from the craft we met Jim Whittem (Director), Goff Letts (Assistant Director), Naish Ganley and Cam White (both stock inspectors), all from our Animal Industry Branch. They landed several horses by letting



them swim ashore. A well was dug into the sand, and we camped for the night. About 12 miles and eight specimens for the day.

On Friday 21 July, Des found we had lost a stud from the exhaust manifold to exhaust pipe, and he made another gasket from asbestos and wired up the connections. We collected around the Danger Point area, and at lunch time changed the drying papers in the plant presses. Plants collected included *Suriana maritima, Guettarda speciosa, Vitex rotundifolia, Ptilotus conicus, Pemphis acidula, Messerschmidia argentea, Strychnos lucida,* and *Thespesia populneoides.* All of these were in sandy soil near the waterfront. During the day, the Forestry vehicle arrived, with Ralph Kemp, Ralph Evans and John Hauser. We again camped in the Danger Point area.

On Saturday we collected in the area of the creek, and the fringing forest of the salt water lagoon, and also helped bring petrol ashore from the launch Gunyanah. A different association gave us specimens of *Timonius timon, Evolvulus alsinoides, Pandanus integer,* the mangrove *Ceriops tagal* and *Rhizophora stylosa, Alstonia actinophylla, Calytrix exstipulata, Acacia dimidiata, Flagellaria indica, Celtis philippensis, Sterculia quadrifida, Psychotria nesophila* and *Ficus opposita* var. *indecora.* During the day we also watched some spear fishing by aborigines with the Forestry people. Also, landed from the launch were Mr Roger Nott, Administrator of the NT, and Mr A.L. Rose, former Director of the Animal Industry Branch; these later re-boarded the vessel, along with Reg Marsh and Jim Whittem. We camped in the same area, an on Sunday we saw some brolgas en route to some collecting near the fresh water lagoon. Extra species collected were *Petalostigma quadriloculare, Macaranga tanarius, Excoecaria agallocha,* the vine *Stephania japonica* var. *timoriensis,* the fern *Acrostichum speciosum,* and *Typha domingensis.*

We departed the Danger Point area on Monday 24th, and had a tedious drive back to the area where we made the corduroy palm trunk bridge. We had vehicle trouble, having to repair the manifold-exhaust connection again, and the radiator fan was rubbing on metal, and the track-rod was bent. Animals seen were a large brown snake, a native cat, five Timor ponies, and some Zebu cattle. I mostly made ecological notes while Des drove. Next morning, Des made repairs for the vehicle, sufficient for us to travel safely, but during the morning the butt of a sand palm crashed through the floor of the Landrover on the driving side, luckily without other harm, and we had lunch at Buffalo Creek beach. Afterwards, while diving along a flat stretch, near Mountnorris Bay, a helicopter landed near us ... some mapping fellows wondered what we were doing there. We camped again on the edge of the Murganella Plain.

On 26th July we crossed the plain, saw the effects of the fire started by aboriginals earlier on the trip, but mainly were able to follow our tracks, except late in the afternoon. Next day we re-found our tracks and drove to Oenpelli, then on to Pine Creek and further to Katherine. Before we reached Pine Creek, darkness occurred, and we saw a 'flying saucer', a greenish and travelling more or less eastwards. Next day we heard that there were sightings throughout the Top End. We were back in Alice Springs on Saturday 29th July.

219 specimens were collected mainly in the Cobourg Peninsula area, but the experience of viewing this country before the present developments took place was one of the benefits of living in the NT at this time.

I LEARNT A TREMENDOUS AMOUNT ABOUT BOTANY, BUT MORE ABOUT PHOTOCOPYING -

an overview of the 4th CPBR Botanical Student Internship Program

Rebecca Last
with poetic comment by Bruna Mumbulla

Twenty one of us from across Australia, including one from Indonesia, have completed all or part of an eight week internship at the Centre for Plant Biodiversity Research in Canberra. Our time there was filled with lectures, fieldtrips, copious amounts of interleaving and work on various projects throughout the centre, CSIRO and ANBG (Australian National Botanical Gardens).

The lectures given each day, ranged from taxonomy and conservation to Occupational Health and Safety, and also ranged from inspiring to mind numbing. This variety provided inspiration for most of the interns but did not stop some from using the lectures to catch up on sleep.

Scientists from different areas of the environmental field contributed to the widening our view of the botanical world. We visited ANCA (Australian Nature Conservation Agency) to receive lectures on endangered species, wildlife protection, conservation and biodiversity. Back at CSIRO the different divisions walked us through the fields of Entomology, Microscopy and Ecology.

The field trips proved to be experiences which will not be easily forgotten. The best example was Yaouk Peak. Twenty interns plus supervisors visited it to explore, trample and sample. A two hour trip in convey of white vehicles, morning tea, then an hour long bush bash meant arrival just in time for lunch. An hour or two of collecting followed, then nature took control by a down-pour to beat all down-pours. Wet, cold, muddy and beaten into submission the convoy crawled back towards the end of the day.

Equally enjoyable but less dramatic trips included, surveying at the Kiandra Gold fields, collecting Cryptogams on Black Mountain and grass sampling at Cooleman Ridge.

Interleaving was the most time consuming work and, all would, agree, the most tedious aspect of the eight weeks. Interest flared briefly when species were to be identified or redetermined but this quickly died as the monotony returned.

Projects that were in progress, will continue throughout the year and maybe beyond.

Canberra residents will never rest from the volunteer work and projects available to them, while others will continue to search for further opportunities.

With some surprise, the sacrifice of eight weeks holiday brought about good things.

Twenty one people gained insight to what they can contribute to the botanical field (although some have decided they have nothing to contribute and are in the process of finding their niche outside Botany).

A lot was learnt, many friendships were formed and, of course, many idioms will be remembered.

"I really didn't find interleaving that bad. It got quite interesting when we started Poaceae".
..... Sunni Boulton

"For me, it's been brilliant!"
..... Maryanne Humphreys

"Oh, it was OK".
..... David Cunningham

"I learnt a tremendous amount about Botany, but more about photocopying than I thought I ever needed to know".
..... Frances Knight

"Faaantastic! I just live across the road!"
..... Lee Halasz

"I knew that ages ago!"
..... Prue Wilkey

"True!"
..... Selwyn Smith

"No one knows anything about insects and plants, man!"
..... Beth Mitchell

"Next time I'll bring my mother".
..... Nik Lam

"Are we there yet?" "Are we bogged yet?"
..... Natasha Leist

"Hey guys, how long haven't I been wearing my hat?"
..... Trevor Wardill

"Do ya want a beer mate?"
..... Julie Matarczayk

"Yeah, yeah!"
..... Sunni Boulton

"Sorry!"
..... Selwyn Smith

Lejla Buza: Didn't comment but just smiled, whistled and raised one eyebrow.

.....

What a Yaouk experience, to be here at the end,
To say good bye to my interleaving friends.

The projects are finished,
We slaves have graduated,
From just being strangers to intimate mates.
We'll say good-bye to the people of influence,
The ones we'll call upon,
For that fantastic reference.

The program was magic, an eye opener for all,
I think I can speak for one and all.
Thank you to Helen and Ian and Jo,
And thank you to Andrew and Judith Curnow.

See you around the botantist trek,
Under the specimens of Mueller and friends.
Remember these days when you are old,
as the point of your life that was truly gold.

PARNASSUM BOTANICUM REVISUM

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Ten years ago (ASBS Newsletter 46, pp. 8–12 (March 1986)) the late Dr Andrew Kanis published two useful synopses under the title "Gradus ad Parnassum, or A Step-by-Step Approach to Botanical Nomenclature": (1) an analytical chart of dates limiting the operation of the Rules of the International Code of Botanical Nomenclature; (2) a step-by-step procedure in the form of a flowchart for assessing the status of scientific plant names under these Rules.

Since then there have been two International Botanical Congresses (Berlin, 1987 and Tokyo, 1993), each of which brought about changes to the published ICBN (W.Greuter et al. (eds), Berlin Code, Regn. Veg. 118: 1988; W.Greuter et al. (eds), Tokyo Code, Regn. Veg. 131, 1994). As these have rendered parts of Andrew's

synopses somewhat obsolete, especially Article Numbers of the Tokyo Code, it was thought that to bring his synopses up to date would be useful to many members, particular those latter-day ones who may not even be aware of the previous versions.

More recently, a list of starting dates, albeit in a highly condensed form, has appeared in the Berlin Code (1988, p. xiv), and repeated in the Tokyo Code (1994, p. xviii). However, Andrew's approach to date limitation had a somewhat different slant and covered the subject in much more detail. As to his flowchart, Andrew probably got the idea (although there is no evidence per se) from Charles Jeffrey's Biological Nomenclature (1973, Table 3). Both operate as a 'nomenclatural filter', but Andrew's was much-expanded to more closely reflect the essence of the Code's Articles.

I have taken the liberty of slightly revising, not only the sequence of his procedural flowchart, but also some of the original wording of both synopses, to clarify the points dealt with in the light of the latest Code.

Dates Limiting the Operation and Retroactivity of Particular Nomenclatural Rules
With reference to relevant Articles,
International Code of Botanical Nomenclature, 1994 (Tokyo Code)

I. Starting Points for Valid Publication of Names (Art. 13):

A. Non-fossil plants

1 May 1753 (Linnaeus, *Species Plantarum* edn 1):
Pteridophyta
Bryophyta *p.p.* (Sphagnaceae, Hepaticae)
Fungi (but note that names of some groups, accepted in certain publications by Persoon (31 Dec. 1801) and Fries (1 Jan. 1821), are sanctioned and to be treated as conserved)
Algae (excl. Nostocaceae, Desmidaceae, Oedogoniaceae)

1 Jan. 1801 (Hedwig, *Species Muscorum*):
Musci (excl. Sphagnaceae)

1 Jan. 1848 (Ralfs, *British Desmidiae*):
Desmidaceae (Chlorophyta)

1 Jan. 1886 (Bornet & Flahault, *Révision des Nostacacées hétérocystées*):
Nostocaceae heterocysteae (Cyanophyta)

1 Jan. 1892 (Gormont, *Monographie des Oscillariées*):
Nostocaceae homocysteae (Cyanophyta)

1 Jan. 1900 (Hirn, *Monographie und Iconographie der Oedogoniaceen*)
Oedogoniaceae (Chlorophyta)

B. Fossil plants

31 Dec 1820 (Sternberg, *Flora der Vorwelt,* Versuch 1: 1–24, t. 1–13)
All taxonomic groups

II. Effective Publication of Names

Under the Rules the following means of publication are no longer effective, from the given dates:

1 Jan. 1953:

(a) indelible autograph (Art. 30.1-2)
(b) tradesmen's catalogues and non-scientific newspapers (Art. 30.3)
(c) distribution of printed matter accompanying exsiccata (Art. 30.4)

1 Jan. 1973:

Seed exchange lists (Art. 30.3)

III. Valid Publication of Names

The following Rules apply from the given dates:

1 Jan. 1890:

An **infra-specific taxon,** published in a work in which the author uses **only one undetermined rank below species**, can no longer be accepted automatically as **variety** (**Art. 35.3**)

1 Jan. 1908:

An **illustration** of any kind alone can no longer be a substitute for a written description or diagnosis (**Arts. 42.3, 44.1-2**)

1 Jan. 1912:

(a) A **newly-published generic name** may no longer coincide with a technical term currently used in morphology (**Art. 20.2**)
(b) In addition to the description or diagnosis, a **new taxon of fossil plants of specific or lower rank** must be accompanied by an illustration or figure, or reference to one published previously and effectively showing the essential characters (**Art. 38.1**)

1 Jan. 1935:

A **name of a new taxon, algae and all fossils excepted**, must be accompanied by a Latin description or diagnosis or by reference to one previously and effectively published (**Art. 36.1**)

1 Jan 1953:

(a) A **new combination**, or an **avowed substitute** (nomen novum), for a previously and validly published name, must be accompanied by a clear indication of its basionym or replaced synonym plus a full and direct reference to author, place of valid publication and date (**Art. 33.2**)

(b) **Two or more different names** (so-called **alternative names**) may no longer be published simultaneously for the same taxon by the same author (**Art. 34.2**)

(c) A **name** must be published with **clear indication of rank** of the taxon concerned (**Art. 35.1**); prior to this date, provided all other criteria for valid publication are fulfilled, such a name is treated as valid but inoperative in questions of priority (except homonymy) (**Art. 35.2**)

1 Jan. 1958:

(a) A **name of a new taxon of non-fossil algae** must be accompanied by a Latin description or diagnosis, or by reference to one previously and effectively published (**Art. 36.2**); if the taxon is of specific or lower rank, additionally it must be accompanied by an illustration or figure showing the distinctive morphologial features, or by reference to one previously and effectively published (**Art. 39.1**)

(b) The **name of a new taxon of the rank of genus or below** must be accompanied by indication of the type of the name (**Art. 37.1–3**)

1 Jan. 1973

All requirements for valid publication must be met simultaneously, or full references given to the places where these requirements were previously fulfilled (**Art. 45.1**)

1 Jan. 1990:

(a) For the **name of a new taxon of the rank of genus or below**, indication of the type must include the word "**typus**" or "**holotypus**", or its abbreviation or equivalent in a modern language (**Art. 37.4**)

(b) If the **type of a new taxon of the rank of genus or below** is a specimen or unpublished illustration, the institution in which the type is conserved must be specified in full or in a standard abbreviated form (**Art. 37.5**)

1 Jan. 1996:

The **name of a new taxon of fossil plants** must be accompanied by a Latin or English description or diagnosis, or by reference to one previously and effectively published (**Art. 36.3**)

1 Jan. 2000:

Subject to the approval of the XVI International Botanical Congress, **newly published names (other than autonyms)** must be registered (**Arts. 32.1, 45.2**)

MORE FROM WIERD SCIENCE...

"The moon is a planet just like the earth, only it is even deader."

"Artifical insemination is when the farmer does it to the cow instead of the bull."

Procedure for Assessing the Status of Scientific Plant Names
With reference to relevant Articles,
International Code of Botanical Nomenclature, 1994 (Tokyo Code)

1)	**Is the name admissible?** i.e. in a form as specified by the Code (or correctable to that specification) for that particular taxonomic rank (**Arts. 16–28**) **YES** ⇓	**NO**⇒ ⇐⇐	**Inadmissible name**– to be corrected to the form appropriate to its rank, if possible.
2)	**Is the name effectively published?** i.e. printed and distributed as specified (**Arts. 29–31**) **YES** ⇓	**NO**⇒	**Unpublished name**– usually to be ignored (**Recommendations *23A.3(i), 34A.1***)
3)	**Is the name operative?** i.e. with clear indication of rank, either by the publishing, or a later, author (**Arts. 35.1–.2**) **YES** ⇓	**NO**⇒ ⇐⇐	**Inoperative name**– i.e. if published before **1 Jan. 1953** without rank, **valid** but inoperative in questions of priority (except homonymy), but may become operative later. From **1 Jan. 1953**, a rankless name is **invalid**, i.e. a ***nomen nudum.*** ⇓
4)	**Is the name validly published?** i.e. (a) accepted by the author(s), and with description and/or illustration, or relevant reference as specified; (b) with indication of the nomenclatural type as specified (**Arts. 12, 13, 19.5, 20.2, 22.2–.3, 24.3–.4, 26.2–.3, 32–45, 61**; for typification see **Arts. 7–10**) **YES** ⇓	**NO**⇒ ⇐⇐	**Invalid name** (= ***nomen nudum***)– i.e. has no status under the Code. May be validated by description/ typification/ranking later, either by an "ex" author or independently.
5)	**Is the name's author-citation right?** i.e. assuming name is accepted by publishing author(s) (**Arts. 22, 26, 33, 46–50**) **YES** ⇓	**NO**⇒ ⇐⇐	**Wrong author-citation for this name**– to be corrected.

6) **Is the name legitimate?** NO⇒ **Illegitimate name**– i.e. superfluous name or later homonym; legitimised only by conservation, but a rejected taxonomic synonym of a conserved name may be available in a different circumscription.
i.e. in accordance with the Rules of the Code (**Arts. 18.3, 19.5, 51–58**; for conservation of names see **Arts. 14, 15**)
YES
⇓ ⇐⇐

7) **Is the name correct?** NO⇒ **Incorrect name**– i.e. either a nomenclatural or taxonomic synonym, but which may become correct later.
i.e. the name which must be adopted for that taxon with a particular circumscription, position and rank (**Arts. 11–15, 52.3, 58**; for orthography and gender see **Arts. 60–62**) ⇐⇐
YES
⇓

8) **This name has nomenclatural status under the Code, is typified, and is available to be used for a particular taxonomic circum-scription.**

N.B. For the names of hybrids some special provisions apply: see **Arts. H1–H12** in **Appendix I** of the Code. The Rules of the Code are retroactive unless explicitly limited (**Principle VI**); consult relevant Articles for limiting Dates where applicable (see above).

COMMENTARY

FORMAL DESCRIPTIONS AND A DIFFERENT REALITY

Julian Humphries
Ecology and Systematics, The MUSE Project
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There has been much traffic in the last few days on the exact format and nature of new taxon descriptions. Although most of the discussion concerned botany, there is little conceptual difference in plants and animals.

Consider the hypothetical scenario presented below as a possible "your worst nightmare" view of what might happen if we continue to spend significant amounts of our time arguing about the arcane aspects of species descriptions. Don't get me wrong here, I have little specific complaint with either these discussions or the needs and concerns of practicing taxonomists for accurate, accessible descriptions of new taxa. I am just concerned that our traditionally conservative nature of assuming that change is dangerous may not serve our science or our desires in the long term.

* *

Headline in January 27, 1998 Science: Molecular Systematic Community announces new system of nomenclature.

In a shocking announcement today the newly created Organization for Molecular Txonomy (OMT), a consortium of several university and

privately funded molecular systematic labs, announced that they were completely discarding the formal constraints of all existing nomenclature organizations. Organization President and CEO, Marion Bumblebuss said, "We just couldn't wait on those guys to get their act together, we have 70,000 new species of nematodes ready to go and they wanted us to create Latin names for each." Driving this announcement was the recently enhanced technique of molecular diagnosis, allowing complete and rapid specification of divergent sequences for "grab" samples from the environment. Although the technique currently has primarily been applied to soil samples, rumour has it that marine planktonic sampling is the next hot area of research.

Departure from traditional paper based publication of new taxa occurs in two ways, elimination of a requirement that species descriptions be paper based and elimination of the long cherished binomial system. Dr. Bumblebuss explains: ".. we decided that the the main problems with current practice, restricting valid names to those occuring in published paper journals and the need for a properly formed name based on dead languages had a common solution. Our new system assigns a URL (uniform resource locator)identification to every new species. These are internationally and instantaneously available once a new species descriptions pops out of our system." When asked now one locates a new species, Bumblebuss described a classification scheme stored in object oriented databases that allow both consenus and individual classifications to be maintained and/or computed. Because the species descriptions are themselves in the database, any lab can verify the identity of new material, test their hypothesis of relationship, or expand the known range of variation for an existing taxon.

When presented with the views of Ariel Statesmen, describer of 400 new species of grass, that such a system was illegal and the new taxa would not be recognized by the scientific or lay community, Dr. Bumblebuss replied: "Ha, who are we kidding here? We can publish 1000 new descriptions per week, more than Dr. Statesmen can publish in a lifetime. Who has more money for this work? What law says we have to follow those rules? That community made up their rules and claimed those were the only names that were valid, well we're a new community and we're making up our rules. The piddling million species already described will be eclipsed by us within two years. After that, its all downhill for those dinosaurs."

* *

Yea, yea, this is all so much hyperbole and science fiction and I am sure that "somebody" in authority would stand behind us in face of such an attack. I bet I made a few technical goofs (anybody know of actual real laws that say a name has to be like we say it does?) in the above scenario and maybe those goofs make such a future unlikely. But I firmly believe we had best figure out how to do "good" science without restricting ourselves to methods more suited to Victorian times. We are replaceable. I don't like it, you don't like it, but our methodology is not sacred. No pope is going to declare it infallible, no nation is going to stake its national pride on Linnean taxonomy.

When we consider our methodogies, our rules, our "standard" practices", do we ever ask other communities how they have adjusted to changing technology? Certainly we are not alone in facing these kinds of challenges. If we only turn inward looking for solutions, I fear we will ultimately fail in adapting to rapidly changing times.

End of tirade and fiction. Comments are welcome, but most appreciated would be suggestions on how we can make positive changes in our productivity and science.

Happy naming, Julian Humphries

REPORTS

Australian

Biological

Resources

Study

NEW STAFF

The Flora section of ABRS has two new staff: Ross Rowe who has been appointed Assistant Scientific Editor for 12 months from January 1996, and Barbara Bell, who has a halftime position as Assistant Scientific Editor for 3 months, from February. For the first time in over 6 months we thus have a full complement of staff, and editing can proceed at a more satisfactory rate.

Work is well advanced on Flora of Australia Volumes 1 (2nd edn.), 2, 5, 11A, 11B, 17, 48 and 51, and on Fungi of Australia Volume 1B.

FLORA OF AUSTRALIA VOLUME 16, ELAEAGNACEAE, PROTEACEAE 1

As foreshadowed in the last issue of this Newsletter, Flora of Australia Volume 16 was officially published on 30 November 1995. Also, as anticipated, there was a minor delay in availability of the hard-cover version, but this has now been taken care of, and both versions are available from CSIRO Publishing, Australian Government Bookshops and through most booksellers.

At ABRS we are very pleased with this volume, which contains an extra block of colour plates illustrating some of the spectacular diversity of the family. We thank all the authors, illustrators and photographers who have contributed to the volume. Without their cooperation in preparing the text in a timely manner, and their patience as we work through the editing process with all its queries, corrections and redraftings, the series could not proceed, nor reach such high standards.

FLORA OF AUSTRALIA VOLUME 28, GENTIANALES

This volume is now with the printer, and should be available about May/June. It will consist of 335 pages, dealing with 4 families, 62 genera and 326 species. It has contributions by 8 authors, 12 illustrators and 12 photographers. As for volume 16, it covers some unusual and at times spectacular species, and again, the illustrations in particular will be a feature.

FUNGI OF AUSTRALIA VOLUME 1A, INTRODUCTION

As this report was being written, the first volume in the new series Fungi of Australia was only days from completion. It is expected to go the printer during March, with publication about June. The other half of the Introduction, Volume 1B, which contains the habitat-related essays on current knowledge, is well in hand, and is expected to go to press about mid-year.

BIOLOGUE

Our annual newsletter has been posted to all those on our Participatory Program Register in January 1996. It contains a summary of activities over the last 12 months, details of membership of our various Editorial and

Advisory Committees, news on ABRS staff, and of course, details of the Participatory Program Grants round for 1996 (just finalised) and 1997 (applications close on 10 April). Those thinking of undertaking postgraduate taxonomic research in 1997 should take particular note of the ABRS Postgraduate Award Scheme (applications close on 1 November 1996).

If you did not receive a copy of Biologue, please contact Liz Visher (ABRS Administration, GPO Box 636, Canberra ACT 2601; Email: lvisher@anca.gov.au) asking for a Participatory Program Registration Form. She can also supply information and application forms for the Grants, ABLO or Postgraduate Awards Scheme.

AUSTRALIAN BOTANICAL LIAISON OFFICER

The appointment of the ABLO in Kew for 1996-97 has been confirmed. Don Foreman from the National Herbarium of Victoria will start his tour of duty in August, succeeding the present incumbent, Bob Makinson.

Tony Orchard

Australian Botanical Liaison Officer

With apologies to Garrison Keilor, it has been a quiet (though cold and busy) couple of months at Lake Wobegone. The British winter has alternated between mild spells and intensely cold snaps, with temperatures in the minus 10s and 20s in Scotland over the Christmas/New Year period (and guess where your ABLO had gone for the break). There have been few visitors in the winter months, with Andrew Doust (University of Melbourne), and Pauline Catt (James Cook University) being welcome faces.

Winter of course minimises distractions for busy botanists and enables them to concentrate on complex enquiries and overdue Flora treatments. If your enquiry has not been answered yet please stay tuned, there are some delays; you have not been forgotten.

KEW LOTTERY WIN TO FUND MILLENIUM SEED BANK.

RBG Kew was awarded a grant of 21.6 million pounds from National Lottery proceeds by the Millenium Commission just before Christmas, towards the building of what is to be known as the Millenium Seed Bank at the Wakehurst annexe in Sussex.

Potentially one of the biggest projects in Kew's history, the aim is to establish a seedbank covering 10% of the world's seed-plant flora, especially from drylands habitats, by the year 2010, with a longer-term goal of 20% by 2020. Total cost of the project is estimated at 76 million pounds. Kew sees the Seed Bank as a major contribution to conservation of biodiversity, and as in accord with the objectives of the Biodiversity Convention which Britain signed at the Rio Earth Summit in 1992.

The Millenium Commission's grant covers two phases; 9.3 M pounds to pay for half the building costs, and some of the costs of collecting and storing seed from all 1400 British species of spermatophytes, with balancing funding from English Nature (the national conservation agency). The remainder will be used to start overseas collecting, with supplementation to be sought from international environment and conservation agencies, and private sources.

Kew says that the Millenium Seedbank will function on a collaborative basis with other institutions and countries of origin. Seed material will be made available under the terms of the Convention on Biological Diversity, and subject to at least some control by, and benefit to, the country of origin.. The major uses envisaged include seed samples for work on restoration ecology, sustainable development, and research on potentially domesticatable or multi-use species.

Foreshadowed research programs will also address issues such as diagnosis and provision of optimal storage regimes, germination and viability problems, collecting methods, and field preservation. Training of personnel from collaborating countries, where needed, is seen as a big part of the project.

For further information, contact Millenium Seedbank Steering Group, c/o Dr Charles Stirton at Kew (and keep buying the scratchies!).

MAJOR SCIENTIFIC REVIEW COMPLETED

Kew staff are winding down after a major, week-long external review of the scientific areas, held in late January. The Science Visiting Group (SVG), is a high-powered review process with several external members, which occurs every five or six years and reports to Kew's parent Ministry (of Agriculture, Food and Fisheries), with major implications for funding levels.

Preparations for the SVG were intensive, and for some staff have extended over more than six months. In the final weeks, several dozen staff were involved in up to six successive rehearsal presentations for their areas of involvement. Both structural and functional arrangements were scrutinised, and most projects in the Herbarium and the Jodrell Laboratory were involved. The SVG also covered issues of further computerisation of the scientific sections, although a real plan of attack on this has not yet been fully developed.

Liaison Officers and Associates were not directly part of the review process, but did have a brief opportunity to meet with some members of the SVG, at a reception on 24th January. Delayed arrival of SVG members left only about 30 minutes for discussion of various issues. Points made by ABLO to SVG members included:

* the continuing need for Australian access to collections and literature housed at Kew;
* the relatively high percentage of UK-origin enquires answered or facilitated by ABLOs;
* the role of ABLOs in improving information level of the Kew collections in families of expertise;
* networking activities;
* contributions to Kew publications;
* funding arrangements of the position.

The SVG_s report will be finalised in early March, though not necessarily released in full. Its implications for structures and funding should become apparent over the next few months.

'AUTHORS OF PLANT NAMES' UPDATE.

Dick Brummitt advises that he will soon be finalising a list of major corrections to

Brummitt & Powell's 'Authors of plant names', for publication probably in Taxon. He wishes to pass on his thanks for corrections and additions already received, and asks that users provide any further information on incorrect data in the published version, with corrected data if available, to him at Kew as soon as possible.

Dick welcomes additions of new authors to his database, which he is continuing to maintain. The minimum information he needs is: full name; date of birth (and death if deceased); major group(s) in which the author has published (e.g. Spermatophyta); and citation of at least one name published, preferably the earliest, with full details of the place and date of publication. If you are not listed in the book but would like to be added to the database, please send these details to him at Kew.

DRYLANDS CONTACT DATABASE

The Centre for Economic Botany (CEB) at RBG Kew runs a project known as the 'Survey of Economic Plants for Arid and Semi-Arid Lands' (SEPASAL). This centres on a major economic botany database on useful plants of dryland environments, used to provide development organisations and individual researchers with information on useful plants, and to target species for germplasm collection and storage.

At present, the database contains information on approximately 6000 useful dryland species, excluding major crop species. Data currently held in the computer database include: scientific names (including synonyms); geographical distribution (to country or state level); life form, life cycle, habit, site and climate tolerances, and various categories of use.

A three-year upgrade to the database is underway, to increase the number of taxa covered and incorporate additional data on species or use-groups of particular interest. The upgrade will include:

* adoption of TDWG Economic Botany Data Standard for plant-use descriptors;
* vernacular and trade names;
* more fields for environmental, morphological, cultivation, and use/management data;
* data source for each item;
* storing of photographic images of plants and plant products.

An outline of the SEPASAL project can be viewed at the Internet location: http://www.rbgkew.org.uk/ceb/sepinfo.en.html

SEPASAL also maintains a contacts database, and would like to receive and exchange contact data and general information on projects focusing on useful drylands plants, including those with an orientation to ethnobotany, economic uses, and land rehabilitation. If you wish to add your project, or find out more about the database content or protocols, contact Hew Prendergast at CEB, or email SEPASAL@rbgkew.org.uk.

NEW CONTACT DETAILS FOR UNIVERSITY OF UTRECHT

The Dept of Plant Ecology and Evolutionary Biology (Herbarium Division) at the University of Utrecht, Netherlands has new contact numbers:

phone: [31] 30 253 1823; fax: [31] 30 251 8061.

RAY HARLEY RETIREMENT.

Dr Ray Harley retired from the Kew Herbarium on January 11th, but will continue his long-standing involvement in studying the flora of South America - he will be moving to Brazil for a year from early March. Anyone wishing to contact him is advised to go through Kew for the time being.

DR HEINO HEINE

Dr Heino Heine (1923-1996) passed away unexpectedly on 21 January in Mannheim, Germany. He worked on the Flora of West Tropical Africa at Kew between 1958 and 1961, when he moved to the Museum National d'Histoire Naturelle in Paris as Head of Research, where he remained until his retirement in 1988.

Bob Makinson

FASTS TOPICS

Science and Technology for the Social, Environmental and Economic Benefit of Australia

Excerpts from the President's Report to FASTS' Board & Council - November 1995

Graham Johnston
c/o Department of Pharmacology
The University of Sydney, NSW, 2006

FASTS has had an excellent year, thanks to the extensive restructuring that took place last year and to the sterling efforts of many individuals associated with the Federation. The restructuring was necessary owing to the change of focus of the Federation from being a purely lobbying body to, in addition, actively developing policy and encouraging the greater involvement of member societies.

The year started with the election of our first President-Elect, Dr Joe Baker, a new Secretary, Dr Graham Heath, and a new Treasurer, Ms Marion Burgess. Early in the year we appointed a new Executive Director, Mr Toss Gascoigne. Towards the middle of the year, we moved to new office accommodation in Deakin, closer to Parliament House.

The undoubted highlight of the year was the Policy launch at Parliament House in June. The proposals put forward in 'A Science Policy for Australia in the 21st Century' have been very well received. They have led to extensive discussion with key people involved in the preparation of the government's long awaited Innovation Statement. Favourable comments on the policies have been received not only from Australian scientists but from people in Europe, Japan and North America, who are interested in science policy.

FASTS now has a good interaction with politicians, bureaucrats and journalists. Its interactions with member societies is improving but should be better still. FASTS needs to increase its interaction with other organisations important in science policy, especially consumer and related community bodies. A major task ahead for all Australians is to dramatically increase Australia's industrial research and development efforts, while at the very least maintaining our great strength in basic research.

Thanks to staff at the Department of Pharmacology, The University of Sydney, FASTS now has its own World Wide Web site to provide current and easy-access information about the Federation, including the policy document and newsletters. Links to those of our member societies already on the web have been made and help offered to other societies wishing to establish a web site. The FASTS site can be reached at:

http://bimbo.pharmacol.su.oz.au/fasts/fastshome.html

"Dew is formed on leaves when the sun shines down on them and makes them perspire."

COUNCIL OF HEADS OF AUSTRALIAN HERBARIA

CHAH held its 23 rd annual meeting in Brisbane on 20-22 November 1995. Under the established order of rotation, CHAH would have met in Darwin but the opportunity was taken to meet this year in association with the Council of Australian Faunal Collections (CHAFC). **Members present**: Mr C R Dunlop (DNA, Chairperson), Dr G P Guymer (BRI), Dr B G Briggs (NSW), Dr H J Hewson (CANB), Dr J P Jessop (AD), Dr G Kantvilas (HO), Dr N G Marchant (PERTH), Dr J H Ross (MEL), Dr J Alcorn (BRIP). Observers: Dr J J Bruhl (UNE, representing University herbaria), Dr E McKenzie (Landcare Research, Auckland, NZ, representing the New Zealand National Herbarium Network), Dr G Shaughnessy (ABRS), Dr A E Orchard (ABRS).

Cryptogamic Workshop. The workshop planned for 1996 at CANB is postponed at least until 1997.

Return of Type material. The practice of authors lodging type material of Australian origin in overseas institutions is a continuing problem for Australian taxonomists. Members agreed that CHAH should write to a number of international journals pointing out the situation, reminding authors and collectors of their obligations to the Australian taxonomic community.

Flora of Australia. Dr Orchard presented a report on progress of various volumes, tabling a pre-publication copy of Vol. 16 and promising six volumes in 1996 including two of Fungi of Australia. At least four other volumes were almost ready for submission to the printer in 1995 but awaited some late manuscripts. Late manuscripts have always been a problem but perhaps more disturbing is the perception of the editors that there is an increasing number of poorly prepared manuscripts. In extreme cases, contributions have had to be rewritten by the editors. CHAH members welcomed the suggestion of Dr Orchard that he and Dr Shaughnessy would visit authors in their home institutions more often in the future, a measure which should improve communication and aid the steady flow of manuscripts.

Dr Orchard reported on the Species Plantarum project which would possibly be produced along the lines of the Flora of Australia with involvement of ABRS in the publishing.

ABLO. Guidelines for ABLOs, modification of the Duty Statement and literature purchases were some of the matters discussed. ABLOs need to be advised by their colleagues very early in their term if there is a special request for a visit to a particular European herbarium. The ABLO can then develop an itinerary which may allow for the request and can then advise Australian taxonomists before the proposed visit. Dr Briggs tabled the report of Dr Barry Conn (ABLO 1994-95).

University herbaria. Dr Bruhl reported on ARC grants funding capital works for herbaria at Charles Sturt and New England Universities. Dr Bruhl also tabled information on two ARC schemes offering grants to university herbaria and systematists.

Bionomenclature. Papers published by the International Union of Biological Sciences on harmonizing the various codes of nomenclature, of botany, zoology and bacteriology, were distributed by Dr Orchard. A draft copy of "Code of Bionomenclature" was also tabled.

Herbarium Database /IT workshop. Perhaps the most important initiative of the herbarium network in 1995 was the IT meeting held at NSW in early November. Recommendations formulated by the meeting were wide ranging, touching on all areas of data management of

concern to Australian taxonomists. CHAH accepted the majority of the recommendations including the formation of a working group, consisting of representatives from all herbaria, to advise CHAH on IT matters. Cooperation in IT among herbaria is expected to produce efficiencies in exchanging specimens and data.

Robert Brown's Diary Since the article on this subject appeared in this *Newsletter* in September last year both Kew and ABRS have offered to publish the diary. At the time of the meeting it was unclear who would be the publisher though the unqualified offer from ABRS still stands.

ERIN: Australia-wide data basing. Members see the nation-wide project for databasing of taxonomic or ecological groups as essential to achieving the ultimate goal of having all herbaria databased. Suggested target groups were the grasses, the aquatic vascular flora and the completion of *Acacia* and the chenopods. The project has in the past been funded by ERIN and they will be approached to gauge their interest in the continuance of this work.

CHAFC - CHAH joint session. Time constraints and the large numbers present predetermined the format of the meeting to short presentations by individuals on various subjects. Amongst the topics discussed were *Data licencing agreements*, proposed *Society for Australian Systematists, International Code of Bionomenclature, BIONET International, Marine databases* and *Charges for services.* The need for bilateral lobbying for funds, especially for the support of the nation's biological collections, was seen as the *raison d'etre* for our combined session. It was agreed that the meeting should acquaint the Minister for the Environment with our need for increased support for taxonomy (through ABRS) and for the establishment of a Grant Scheme for the ongoing support of biological collections.

REVIEWS

TREES OF THE BALIKPAPAN-SAMARINDA AREA, EAST KALIMANTAN, INDONESIA: A MANUAL TO 280 SELECTED SPECIES.

Paul J.A. Keßler & Kade Sidiyasa.

Wageningen, the Tropenbos Foundation (Tropenbos Series 7). Pp 448, ill.
ISBN 90-5113-019-8. Netherlands fl. 95,00.

Reading this book I was transported back to when, in my early twenties, I wrestled with the task of learning the bottoms of trees a week ahead of teaching the tops to my students at the Bulolo Forestry College in PNG. They already knew them whole; I already knew something of their abstract botanical parts. I was introduced to the actual things and came eventually to know them intuitively; they were introduced to the vocation and vocabulary of botany. Both parties on that vertiginous year long learning curve were kept from plunging off it by R.J. Johns' shoestring 'Common Forest Trees of Papua New Guinea' series.

In the more glossy and compact 'Trees of the Balikpapan-Samarinda Area', Keßler & Sidiyasa

attempt a 'first guide to the (primary) lowland forest of East Kalimantan'. In such an aim, there is always the difficulty of addressing a common need in a user population of diverse types and levels of knowledge - a difficulty which almost invariably leaves the endeavour open to criticism. They have, however, succeeded for the most part and the result is an admirable achievement useful widely outside the rather narrow confines of the study area. It is all the more remarkable for its rapidity: the project commenced in April 1990, the herbarium at the Wanariset station was completed at the end of that year; building up the herbarium infrastructure from zero, over 9000 numbers were collected and the manual was ready for publication about mid-1993, though delayed until June 1994.

The book is a guide to 66 families and 210 genera represented by 280 tree species selected for inclusion on the basis of their being economically and/or ecologically important. The study area, some 100 km long and from sea level to ca. 700m alt., is in the southeastern part of East Kalimantan. A map is provided of the study area, but sadly it is without scale, is not set in perspective by comparison to a map of Borneo, and does not mark most of the listed main collecting localities.

A synoptical key is provided to the families based entirely on leaf and bark characters, together with a bracketed key to all the genera based almost entirely on a wider range of vegetative characters - flower and fruit characters being restricted to near ultimate dichotomies. The synoptic key to families is undoubtedly a helpful approach, allowing new users to begin with the characters they find most obvious. The key to genera is somewhat daunting, I would have thought, to the uninitiated, and some alternative approach including diagrams, such as that of Johns (1978), might have proved more user-friendly. It would also be helpful in a guide such as this to provide keys that can be pulled out and laminated (or to have had them printed on water-proof paper) for use in the field.

Families, genera and species are treated in alphabetical order. Reference is given to the protologue of each genus, the protologue of each species or, where the current name is a subsequent combination, the reference to that combination and not the basionym. Reference is also provided to recent 'accessible' literature on the genera and species, where such exists. Each family and genus is provided with a short description and key to the genera or species where more than one member of the lower-ranking taxon is included. Infraspecific taxa are someties included, e.g. in *Nephelium*. The most important family, the Dipterocarps, additionally have a synoptical key to the genera and to timber-type groups within *Shorea* and separate keys to sterile and fruiting specimens of the species in *Dipterocarpus* and *Vatica*. The descriptions, though technical, are concise and emphasise field characters. The authors commendably avoid, with occasional lapses, indulgence in unecessary jargon. Neither do they apologise for the fact that their content is botanical and that science's intimate engagement with the natural world does necessitate a terminology which must be learnt by those wishing to use and appreciate its knowledge. To this end there is a glossary in which definitions vary from most which are clear and concise, to those which include a further technical term which is not listed (e.g. 'pinnae', 'node' and, quaintly, 'papils', the last a wrongly anglicised rendering of *papillae*), to the to me almost incomprehensible definition of berry: 'middle layer of the fruit wall well developed, with immersed seeds'. Unfortunately several technical terms appear in the text but not in the glossary - 'heterodistylous', 'filament', 'claw', 'truncate', 'leaflet', 'ovule', and 'cell [of ovary]' in the description (selected at random) of *Sarcotheca diversifolia* alone. It does however, include the delightful term 'dippled' which the same adenoidal scholar would presumably latinise as

'*babillatus*' but whose definition suggests it is a mis-spelling (recurrent) of the inverse term 'dimpled'. Added to the descriptions are brief notes on uses (principally timbers), vernacular names (with language code), distribution (mostly at a very general level - 'endemic to Borneo', 'Malay Peninsula, Sumatra, Borneo'), habitat (very succinct), synonyms in recent use in Kalimantan, occasional miscellaneous notes, and citation of herbarium vouchers collected in the study area.

While photographs are sadly absent, at least one species of each genus is illustrated by a line drawing, and in the case of the Dipterocarps, every species included is drawn. The drawings themselves are of high quality, prepared by the Indonesian artist Priyono who was trained for the project under the supervision of the famous Mr van Os at Leiden. However, the material on which they are based is often incomplete (mostly only fruiting), and the smaller drawings (all are one to a page) are unpleasingly crammed to the bottom of the page leaving the top blank as though something is missing. The drawings are separate from the text, collected at the end of the book, but the thoughtful inclusion of the family name on the outer sides of facing pages speeds up finding the right one.

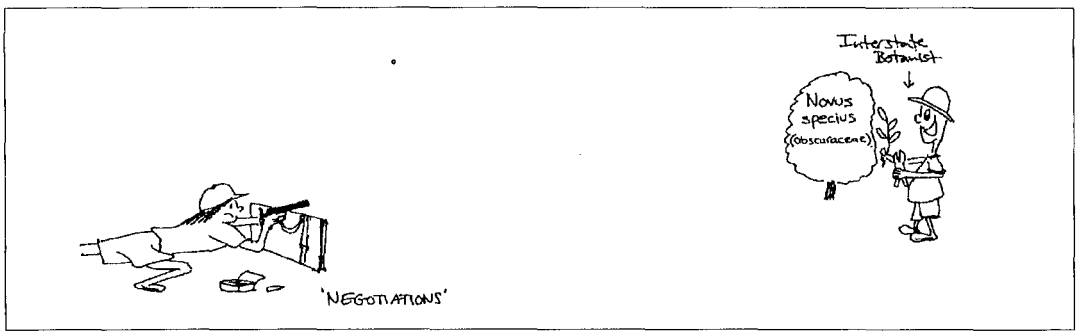
Indices are to scientific and vernacular names separately. A brief list is given of further relevant titles in Bahasa Indonesia, English and Dutch.

Beyond the relatively trivial criticisms above, my principal one is the lack, in a guide which empahsises identification in the field, of commentary on the characteristics of tree crowns or the architecture of the developing tree, which can readily be communicated by means of photographs and reference to simple elegant diagrams like those of Hallé & Oldeman. Even the most striking, such as the layered form of *Terminalia catappa*, the spreading flat crown of *Parkia speciosa* or the sympodial trunks of *Alstonia*, for example, are barely described or not at all, while in the bare architectural descriptions that are included, the branches of *Alstonia* are said to be '*Terminalia*-like' when they are quite radically different.

Nevertheless the authors have amply demonstrated that a very valuable contribution can be made in quick-time. May they inspire us to do all we can to further hot up the all too stately progress of Malesian botany in all its multiple levels!

Johns, R.J. 1978. A new approach to the construction of field keys for the identification of tropical trees. Austr. J. Ecol. 3: 403-409.

Alistair Hay
RBG Sydney



HORTICULTURAL FLORA OF SOUTH EASTERN AUSTRALIA. VOLUME I - FERNS, CONIFERS & THEIR ALLIES

Roger Spencer

University of New South Wales Press, Sydney, 1995
xxxvii + 358 pp. 16 Colour plates
ISBN 0 86840 167 6 (set)
ISBN 0 86840 206 0 (Vol.1)

Horticulturists and botanists in Australia have for long had to rely on publications from overseas, mostly Britain and America, for detailed botanical or cultural information on the large number of plants commonly grown within Australia. We are increasingly well served for such information on our native flora. The cultivated garden flora, which includes both native and exotic species, has been largely ignored so that there has been no inventory of the range of plants growing and no easy means of identifying the plants. The problem is increased as many cultivated plants are selections or cultivars.

Roger Spencer with this first of four volumes devoted specifically to the cultivated garden plants of South Eastern Australia has attempted to fill this void and provide the comprehensive information we have been lacking. The geographical scope of this book covers South Australia, Tasmania, Victoria and New South Wales north to Armidale ie. the mainly temperate areas of Australia, however due to the wide cultivation of many taxa, the relevance will extend beyond this area.

The introductory section gives clear instruction on how to use the book and how to interpret the layout of the text in the descriptive area. In so doing, catering for users who may not be overly familiar with botanically based texts. An "illustrated glossary of plant shapes" follows which with simple line drawings effectively provides a guide to habit, frond or rhizome shape, spore structures etc. A more traditional glossary of terms is included in a separate section and includes several terms eg. pinetum, Malesia, Oceania, witches broom which do not often find their way into a glossary. The use of botanical terminology has been reduced to a minimum to provide more readable descriptions for a wider audience range. Consequently the need to refer to the glossary will also be minimised.

An illustrated key to each of the major sections, ie. ferns and allies and conifers and allies, provides a quick identification guide via a series of small line drawings. The usefulness of the keys may have been enhanced by slightly larger illustrations however the aim appears to have been to keep each key to one double page spread for ease of use. These provide a very useful guide particularly if one has limited knowledge of the group. Formal botanical keys are also provided, based mainly on vegetative characters, and limited tests indicate that they work quite easily.

The main body of the text covers each Division of, firstly, the ferns and fern allies and secondly, conifers and their allies. Families are arranged alphabetically within each Division and alphabetically within families. Keys to each family and then to generic level are provided, all based mostly on vegetative characters which is usually the main kind of material encountered. As this book covers the cultivated flora, both native and exotic species are dealt with together. Descriptions at each level, ie. genus, species or cultivar have been kept concise while still providing sufficient detail for identification purposes. Each generic description, and sometimes individual species, contains a section entitled "Recognition" with a summary of the main distinguishing features. This provides a useful tool for quick checking where there is some idea that the plant in

question is known. Many descriptions, in particular with the ferns, are accompanied by line drawings that, although small, illustrate some of the main distinguishing characters and are a useful adjunct to the descriptions. Botanic names have author citations and it seems that Roger Spencer has put considerable effort into making sure the nomenclature used is current. Common names are also added if available, as are brief propagation and distribution notes. Throughout the text, only a small number of typographical errors were noted.

The cultivated flora in Australia contains a large number of selections or cultivars in private and public gardens. Often it can be difficult when attempting to identify this flora to ascertain which cultivars may have been introduced and to find suitable descriptions. A strength of Volume I is that each species contains a listing of a majority of the known cultivars in Australia, a concise description and where known, the time and place of origin of each cultivar.

In order to provide a plant and garden heritage perspective, the locations of significant specimens of individual plants in each state are detailed. Further to this in an appendix, the locations of important collections of ferns and conifers whether in private or public gardens are also documented. Such details are invaluable for anyone involved in the study of cultivated plants.

Several appendices provide coverage of topics such as classification, nomenclature, herbarium collections, specialist societies and cultivars originating within Australia. An extensive bibliography is provided for further reference reading. The 16 colour plates are of high quality and those of conifer cones in particular will be a valuable comparative tool for identification.

This book is recommended especially to botanists involved with cultivated plants as well as anyone involved in ornamental horticulture whether nurserymen, landscape designers, etc. The information contained within is applicable to a wide audience. Roger Spencer is to be congratulated on an impressive first volume of a much needed reference. Future volumes will be eagerly awaited to form an important component of many botanists and horticulturists libraries.

Trevor Christensen
Botanic Gardens of Adelaide

"A super saturated solution is one that holds more than it can hold."

"Mushrooms always grow in damp places and so they look like umbrellas."

"The pistol of a flower is its only protections agenst insects."

"The skeleton is what is left after the insides have been taken out and the outsides have ben taken off. The purpose of the skeleton is something to hitch meat to."

"A permanent set of teeth consists of eight canines, eight cuspids, two molars, and eight cuspidors."

NOTICES

INTERNATIONAL ORGANISATION FOR PLANT INFORMATION

From Alex George, Secretary to the Council

In late September-early October, meetings were held in Madrid of the Provisional Steering Committee for the Species Plantarum Project (SPP), the Checklist Committee (CLC) and Council, followed by the Annual General Meeting.

Global Plant Checklist

Because insufficient funding has been obtained to support the 'Checklist' as currently planned, an interim version will be produced to demonstrate the potential of the project to funding bodies, botanists, and users. A text-based list consisting of the databases of 'Flora Europaea' (c. 11 000 species), the 'Flora of Peru' (c. 17 000) and the 'Flora of Australia' (c.18 000) will be prepared both in hard copy and through the IOPI home page now established through Prof. David Green (Charles Sturt University). A data set of the Casuarinaceae (90 species) will also be put up as an example of the fully-edited Checklist. The 'rough' list, representing three very different regions, will be immediately useable and will be available for editing by the Taxonomic Resources Working Group (TRN). Further data will be accepted as it became available. In addition, Dr Richard Pankhurst (Edinburgh) will prepare Peterson's 'Plants" database for demonstration on laptops.

1. The categories for the 'Checklist' will be:

Level 0: the data as supplied by the owner. For each record the data ideally will include taxon name, author, reference to protologue, information on type, distribution, uses, major references, synonymy. Subspecies and variety will be accepted but not forma. Each synonym will have its own page, with a reference to the accepted name. A complete set of the original data will be retained. The author os each entry will be indicated.

Level 1: data at various stages of editing by TRN

Level 2: the final, fully-edited version

Species Plantarum Project

The Steering Committee's report was accepted by Council and the SPP was formally adopted as IOPI's second project. Dr. Dick Brummitt, Royal Botanic Gardens, Kew, was appointed Convenor of its Committee. The objective of the SPP is to promote and prepare, as expeditiously as possible, a concise Flora of the vascular plants of the world in a structured format to the most accurate standards achievable. Initially, the families recognised will be those in 'Vascular Plant Families and Genera' (Kew, 1992), and the format will broadly follow that of the 'Flora of Australia'. Publication will usually be in single-family fascicles/volumes, though clearly large families will require multiple volumes. The Committee now has the task of developing production procedures and recruiting contributors. Australian members of the Committee are Tony Orchard (ABRS, Canberra), Alex George (Kardinya, WA) and Karen Wilson (National Herbarium of NSW, Sydney) who participates under the IOPI policy of the Chairman of each Committee attending meetings of the other Committees.

Membership & Council

Membership of IOPI now stands at 102 (77 Institutional, 25 Individuals) Nominations for five members of Council for the 1996 - 98 term

equalled the number of vacancies, hence no ballot was needed. The nominations were Dr Richard Brummit, Kew; Sir John Burnett, Oxford; Mr Alex George, Kardinya, WA; Professor Kunio Iwatsuki, Tokyo; and Dr Marco Roos, Leiden.

Council opted for the current office-bearers to continue in 1996 ie.

Chairman: Sir John Burnett, Oxford, England

Vice-Chairman: Prof. John McNeill, Royal Ontario Museum, Canada

Secretary: Mr Alex George, 'Four Gables', 18 Barclay Rd, Kardinya, WA 6163(phone 09 337 1655; fax 09 337 9404)

A SOCIETY FOR AUSTRALIAN SYSTEMATISTS

Mike Crisp
Division of Botany & Zoology
Australian National University
Canberra, ACT 0200, Australia

Following a meeting held by ABRS in Canberra in October to discuss one aspect of the crisis in systematics - the decline in training - , it became evident that systematists must organise themselves to promote their discipline more forcefully than at present. For some time there has been a need for a general systematics society, encompassing all the various groups of organisms from viruses and bacteria to higher plants and animals and all branches of systematics from alpha-taxonomy to phylogenetic techniques. Such a proposal was made by Penny Gullan (Division of Botany and Zoology, Australian National University) from the floor at that ABRS meeting, and although there was only limited discussion, ensuing correspondence between systematists from all disciplines throughout the country indicates that the time is right.

Although much of the detail needs to be refined at the time of going to press, the following points are likely to be adopted:

1. The primary activities of the society will be to promote systematics as a discipline, to facilitate communication, meetings and collaborative research amongst Australian systematists, to encourage debate on general (methodological) issues in systematics, to lobby for a higher public profile and thereby increase funding for systematics in Australia, and to emphasise the central role of systematics in the biodiversity debate.

2. Communication will be primarily electronic, with a periodical newsletter and frequently updated home page on WWW, but with no journal. Whilst electronic communication alone may exclude some potential members, most practising systematists in Australia either have now, or soon will have access to this effective, rapid and above all, cheap to use technology. Although the initial hub of the society will be physically in Canberra, electronic communication is the best means of achieving decentralisation.

3. We intend to affiliate with the Society of Systematic Biologists, and have already approached their president. This society, which publishes Systematic Biology and is a major proponent of Systematics Agenda 2000, is international and has many Australian members. However, it is naturally Americo-centric and in itself cannot fulfil our Australian needs. Our society intends to have a similar constitution to ASBS. As an additional means of avoiding Canberra-centricity, we propose to follow several other societies in having one or more regional councillor(s) in each capital city. The basis of a network of councillors is already in the process of formation through

volunteers (including entomologists, botanists and limnologists) from each capital city, but more activists are needed. A newsletter editor, botanist David Morrison, has volunteered before coercion was required. The name of the society is open to discussion by founder members, but confusion with existing names, such as ASBS will be avoided.

The initial impetus for this society comes from the already existing Systematics discussion groups in Brisbane, Canberra (Coopers and Cladists), Perth and Sydney. These groups have demonstrated how systematists of all disciplines, from morphological to molecular, have much common interest. Discussions over the years have included the crisis in systematics, Systematics Agenda 2000 and other like issues, and make a natural base for the floating of a new national society. However, any perceived narrow methodological base of these groups (if true) will not be imposed on the new society: all systematists, irrespective of discipline or preferred methodology, need to unite to defend our science. Naturally all the proponents of a Systematics Society already belong to various societies which either directly (Australian Systematic Botany Society) or indirectly (e.g. Australian Entomological Society, Australian Society for Limnology, Ecological Society of Australia, inter alia) reflect our professional interests as systematists. None of us intend to restrict our involvement in these societies, or to undermine their various, and different roles.

The list of prospective members is growing rapidly. In the initial phase we seek only an expression of interest and addition to the electronic mailing list: no subscription please, pending decisions to be taken democratically either electronically or at the first annual meeting to be held in 1996. Membership is available by e-mailing your interest to either Mike.Crisp@anu.edu.au or peter.cranston@ento.csiro.au: you will be added to the mailing list.

PUBLICATION DATES FOR 'THE GREVILLEA BOOK'

by Peter Olde and Neil Marriott

'The Grevillea Book' by Peter Olde and Neil Marriott was published in three volumes with releases in both Australia by Kangaroo Press, and the United States by Timber Press. The release dates were different in the two countries, and in the interest of accurate citation, especially for Volume 1 in which a number of new taxa and nomenclatural changes appear, these are given below. Volume 1 was published first in the United States, Volumes 2 and 3 in Australia.

	Australia	**United States**
Volume 1	13 December 1994	2 December 1994
Volume 2	6 April 1995	10 April 1995
Volume 3	8 May 1995	11 May 1995

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

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PERSONAL NEWS

OBITUARY

JOE WEBER

It is with great sadness that we have learnt of Joe's death on 14 March.
Joe (Joseph Zvonko Weber) was born in Cakovac, in what is now Croatia, on 13 October 1930.

After graduating at the University of Zagreb, he taught for eight years, during which time he also obtained his teaching qualifications. In 1965, Joe migrated to Australia with his wife, Ranka, and only child, Christian, and the following year he joined the staff of the State Herbarium of South Australia.

After almost thirty years on our staff, specialising particularly in Cassytha and Thelymitra, Joe retired on 13 October last year. Joe and Ranka moved to Queensland near where Christian and his wife, Simone, had settled. A few months later, with their new house nearing completion and enjoying the warm weather that he so liked, Joe was killed in a road accident.

Our deepest sympathy is extended to his friends and especially to Ranka, who so often hosted botanical functions in their home, Christian and Simone.

John Jessop

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 breading 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

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

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY INCORPORATED
(incorporated under the Associations Incorporation Act 1991)

SUBSCRIPTION FORM

Subscriptions for A.S.B.S. membership for 1996 are due on 1 January, 1996. If you have already paid your subscriptions for 1996, 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 1996, including the *A.S.B.S. Newsletter,* are:

Ordinary/Institutional $35.00
Full-time Student $15.00

In addition, your contribution to the Hj. Eichler Research Fund would be most welcome. Please return the form below with your 1996 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

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