ASBS

AUSTRALIAN SYSTEMATIC BOTANY SOCIETY

N E W S L E T T E R

Newsletter No. 24 September 1980

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Please send contribution, preferably typed in duplicate and double-spaced to the Editor, at the address below. Items from any source and of interest to members are acceptable. Items incorporated in the newsletter will be duly acknowledged.

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MEETING OF AUSTRALIAN SCIENTIFIC SOCIETIES AND ACADEMY NATIONAL COMMITTEES

On Wednesday 23rd July in Canberra, I represented ASBS at a meeting of Australian Scientific Societies and the Academy's National Committees organised by the Australian Academy of Science.

The objects of the meeting, as suggested by the Academy, were to discuss:

" 1. inter-relations between the scientific societies, the National Committees and the Academy;

2. ways in which the Academy, through its National Committees, can help to foster all fields of science in Australia and act as a more effective channel for inputs into national science policy;

3. problems facing the scientific societies in Australia and ways in which they and the Academy can complement and support one another more effectively."

The meeting was attended by representatives, in most cases the President/Chairman of 68 Australian scientific societies, and the Chairman of the 30 National Committees of the Academy. This brought together people with very wide-ranging interests from those in the pure sciences to the more applied fields and from the generalist Royal Societies to the specialised groups. Representatives were present from each of the major biological societies, the medical and veterinary fields, physics and chemistry, mathematics and computing as well as engineers, geologists and cartographers.

Although many of us were fairly apprehensive about the usefulness of such a meeting of diverse interests, I believe it was worthwhile and that most societies would have gained considerably from the day's discussion.

The President of the Australian Academy of Science, Dr. Lloyd Evans, introduced the meeting and chaired the days proceedings. National activities were discussed with examples from the Australian Institute of Physics, Royal Australian Chemical Institute, ANZAAS and the National Committee for Geography, followed by lengthy open discussion.

Following a rather lavish lunch we discussed international aspects, including international relations, collaborative projects and congresses. The specific topic of publications was tackled with examples from Australian Journal of Physics, Search and the Australian Journal of Ecology. The day concluded with some discussion on 'the way forward: what should we be doing?'

One thing I am grateful for is that we are not publishing our own journal. It seems that almost all societies with a membership of less than 2000 and producing a scientific publication are at present in real financial difficulties. Not surprisingly the larger groups, e.g. Royal Australian Chemical Institute with 7000 members, appear to be thriving.

Other problems affecting societies include the costs of housing and maintaining access to libraries (e.g. Linnaean Society of NSW), liaison between scientific societies themselves and between societies and the National Committees, timetable clashes for meetings (e.g. ANZAAS problems), and the funding of research.

ASBS members, like several people at the meeting, may not realise the role of the Academy National Committees, According to the Australian Academy of Science Year Book the National Committees have two principal functions: "to foster a designated branch of natural science in Australia, and to serve as an effective link between Australian scientists and overseas scientists in the same field." In their national role the Committees maintain contact with and rely upon national scientific societies, the relevant ones being represented on the Committees. In our fiels there is a National Committee for Biological Sciences. This Committee is to be reviewed this year with the idea of separating it into Committees covering more specific aspects of the biological sciences.

The activity and contribution of the National Committees obviously varies greatly. The "inactive" Committees appear to be those that overlap with a scientific society, while the more active Committees are in areas devoid of active scientific groups.

There is also an Academy Standing Committee for Flora, on which we have a representative, Mr. Jim Armstrong from NSW National Herbarium. The Flora Committee's charter is "to advise Council on matters related to the study of the flora of Australia." This Committee has not yet met since its formation in 1979. It appears that the Chairman of this committee should be prompted to call a meeting. If you feel there is any matter, including the 'Flora of Australia' project, which could be usefully discussed or taken up by this Standing Committee then please let Jim know so that he can pursue the matter through the Committee and the Academy.

Following the disastrous state of ANZAAS this year there was some discussion on liaison between the biological societies and the possible formation of something like a liaison committee between relevant societies. This role was previously carried out by or through ANZAAS, but with most groups now having left ANZAAS and meeting in their own right we appear to have lost contact with other biological societies. Our successful symposium in May on the 'Evolution of the Flora and Fauna of Arid Australia' co-sponsored by the Ecological Society of Australia, Australian Entomological Society and Australian Society of Herpetologists is obviously a rare event.

During discussion at the Academy meeting it became apparent that other biological societies are tentatively feeling along the same paths. The Australian Biochemical Society for instance is pursuing the lines of a possible federation of interested societies. If you have ideas for or against ASBS being involved in any such federation then please let me or another Councillor know, so that we can discuss the matter with some indication of the feeling of the membership.

The discussion relating to publications raised issues relevant to many ASBS members. It is quite clear that the federal government is not committed to publication of scientific research, even that which it funds. Apparently there is little comprehension of the costs of publication relative to the total cost of any specific research project (1-2% of total costs of project) and it does not seem to be fully understood that research is of doubtful use (if any?) if its results are not made available by publication. Many research grants do not provide publication costs in allocation of funds to projects. The recent

Industries Assistance Commission Report, (No. 228, October 1979) 'The Publishing Industry', stated that "it is unnecessary (at least in the vast majority of cases) for the community to provide assistance to book or journal publishers to promote the publication of research findings. Furthermore, in view of the fact that, in the scientific community, personal rewards and future career prospects are frequently linked to publication, the community should not be expected to subsidise publication costs when the potential benefits inducing individual researchers to publish already provide adequate incentive". .... Hence the Commission will recommend that separate public funding of the publication of research results be discontinued". The IAC report does however suggest that if the government should assist in dissemination of research findings then that should be done as part of the funding of research projects themselves. It is hoped that the future of the Australian Scientific Research Journals (published by CSIRO), including the Australian Journal of Botany, is not in question.

Some scientific journals published by relatively small societies, such as the ESA's Australian Journal of Ecology, are in a precarious position financially.

I think many left the meeting comforted by others who are in the same sinking boat, especially those with publication problems! It certainly was a useful discussion forum and for dissemination of information between scientific societies and between the societies and the Academy. Most felt such meetings would be useful on a regular (e.g. annual) basis.

I found the meeting most useful, I suppose mainly learning from other societies' experiences. I hope it will be of use in the future. By the way, the average age of those present was ca. 103, there were 6 female representatives out of 120 people and the President of the Australian Institute of Energy has an extra erg in his pocket for accusing me of being "too young to be a member of any society executive"!

29th July 1980 Judy West

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BUREAU OF FLORA AND FAUNA - FLORA OF AUSTRALIA

Since many of you may not have heard news of the recent budget allocations for ABRS, I have extracted several paragraphs from the text of a letter from Alison McCusker (Acting Director, ABRS) to the heads of institutions:

ABRS has now been granted a very substantial increase in resources, sufficient to enable meaningful progress to be made on the current programs, and possibly to allow work to commence on some of the recommended activities which, hitherto, we have been unable to carry out.

In determining the level of support the Government has, in essence, adopted recommendations made to the Minister by the Advisory Committee in a report prepared late in 1979. The text of that report is, of course, confidential, but a precis will be published in the Advisory Committee's annual report for 1979-80. The full report was referred by the Government to the Australian Science and Technology Council (ASTEC), which supported it generally.

The total appropriation for 1980-81 is $1,111,035. Of this amount, $606,000 has been voted for the Participatory Program, an increase of 216% over last year's provision. The Bureau's budget has been increased by $286,000 (130%). Six new scientific positions have been approved and will be advertised within the next fortnight. Approval is being sought to bring the Bureau's staff to a total strength of 22 by the end of this financial year.

The Bureau's internal budget makes a modest provision for engaging consultant experts in areas not covered by staff expertise, and for conducting workshops on topics recommended by the Advisory Committee. I hope that such activities will come to be a feature of the ABRS program and will lead to greater community participation in it.

When the Interim Council's funding program was reviewed in 1976-77, many people commented that a little additional funding and, in particular, the presence of one or two grant-funded personnel in an institution, had had a remarkable, stimulatory effect on the enthusiasm and output of people working in the field of taxonomy. No doubt, further outside support will have a similar effect. However, I believe that, if we are to achieve the goals which the Advisory Committee has set for ABRS, and which are so important nationally, it will be necessary to attract many more scientists into taxonomy in the next few years. I hope that, when considering your participation in ABRS, you will think not only of stimulating existing work but will also consider whether your institution might move into some of the hitherto neglected areas of Australian taxonomy.

Among the six positions mentioned above is one Science 3 Botanist, who will be engaged as a flora writer and an editorial assistant (Science 2 Botanist), both for the Flora of Australia project.

Judy West

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UNIVERSITY OF PAPUA NEW GUINEA HERBARIUM NEEDS ASSISTANCE

On the night of 6/7 July 1978 the building housing this herbarium, the office of Dr. D.G. Frodin, geological collections, and the university cleaning services was swept by fire and largely destroyed. Estimated losses were K250,000 to K300,000.

The fire was accidental in origin but information subsequently received suggests it may have been started by a switched-on but neglected electric jug, aggravated by an electrical system weakened by age and power variations. A similar fire destroyed an office block in Konedobu in 1949.

Delay was experienced in contacting the Brigade as all fire alarms and ring-out telephones had been turned off. The only emergency fire hose was attached to the building --- near where the fire started. No alternative arrangements had been investigated or made by the central administration, whose finance and buildings committee is responsible only to the Council --- not to the academic staff: this arrangement dates to the early days of the institution. Complaints about the condition of the building had been made but without avail.

The old building, which will be known to some readers of this Newsletter, was then about 12 years old, a "temporary" structure of wood and plaster-board

with a sheet metal roof, not unlike the former building of CANB. It had, with others of its kind, long been used for changing functions. The cleaning staff were put into a space vacated by others without,however, any realization of the value of the collections in the building or consultation with the departments or staff concerned.

The herbarium (and later the geological collections) had been put into this building because no space had been allocated when the permanent science buildings were constructed. In the case of the herbarium, this was because of disapproval by the then-Financial Adviser to the Department of External Territories, for tertiary institutions had recommended that a herbarium or zoological museum was inappropriate to a university in a developing country. (The zoological collection now has over 18,000 specimens and is considered exceptionally good for its size, particularly in certain groups, but suffers from very over-crowded facilities, including very poor exhibit space). A move to a separate building was necessary for insect control as well as space reasons, and indeed total insect control had been maintained for over four years by mid-1978.

Little of the geological collections was saved but of the herbarium at least 75% has survived. Specimens had been housed in Leiden-style wooden boxes arranged on steel shelving, with labels mounted on the top right-hand corner of the sheets --- which was to save most of the information. Since then, with the aid of student and other help most of the collection has been remounted. There are about 5000 sheets in all left from before the fire.

Present interim accommodation, however, is most unsatisfactory and insect control has become very difficult. The only room which could be obtained was a little-used interior tutorial room, which is far too small. Preparation facilities, dryers, etc., are scattered in three or four other locations. Hardly any space is available for serious research or study by staff or students.

A substantial sum has been awarded for losses to collections, equipment and furniture, and Dr. Frodin has recently been awarded adequate compensation for lost and damaged books. Damaged books which can be replaced will go to the University Library.

It was later discovered, however, that all university insurance had been cancelled earlier in the year, evidently at Government instruction on the promise of compensation for any losses --- which later transpired to have been misleading. No University loss fund has ever existed, nor were staff properly informed of these developments.

There have been two subsequent fires at the Universities, by far the most serious being the loss of the entire Department of Civil Engineering at the University of Technology at Lae.

No specific government provision had been made for these losses, however, and UPNG has been told that application for replacement funds would have to be made as if a new project was involved --- through the National Public Expenditure Plan.

The first application for funds for a new building, in 1979, was blocked in the National Executive Council as a result of political and other pressures. A major contributing factor has been public and government dissatisfaction with the Universities of the kind familiar elsewhere; this was aggravated by two serious

student strikes (1978 and 1979) which have been reported in the Australian press; in the case of the first there was an official commission of inquiry and the second led, indirectly, to the deportation of a politics lecturer.

A new application for funds (for 1981) is currently with the National Planning Office. We detect little alteration in the political climate; a new factor is a fall in student numbers. A further problem is that the importance of a herbarium to national development is less obvious, and little suitable propaganda is available. Moreover, PNG lacked a science policy at independence and none has since been developed.

Our situation is very similar to that faced by the Townsville botanical community. While in Queensland there is a state herbarium, it is "a thousand miles away." The JCU herbarium has to function as a de facto state herbarium for NQ, along with those at Atherton (and now Mareeba). In PNG, the only other more or less general herbaria are at Lae and Bulolo --- across the ranges, without a road. Students appreciate the collection, too: one petition was sent in 1978 and another is currently being prepared for Government.

While we service many outside requests from Government and others, particularly in Central Province, it is a belief that our being part of this University is creating political difficulties; in other words, it is outside our, or the Biology Department's control. We urge, therefore, that you lend your support by writing as soon as possible to the following(with a copy to the Chairman, Department of Biology):

The Prime Minister;

or The Minister for National Planning;

or The Minister for Finance

Central Government Offices
P.O. Wards Strip, N.C.D., P.N.G.

The Minister for Primary Industry
P.O. Box 2417, Konedobu, P.N.G.

The Minister for Education
P.M.B., Boroko, P.N.G.

The cost of a new, secure building for the herbarium and the geological collections is estimated to be about K110,000 which is not an inconsiderable sum of money. The proposed building would be about 320 m^2, similar in area to that destroyed; one-third would be for geology, the rest for the herbarium. A special feature being considered is air-conditioning through solar energy. Current activities and services are being seriously affected by the present interim accommodation, and an acute sense of embarrassment engendered. We do not wish to have to extend this through the forthcoming Botanical Congress.

D. G. Frodin
G. J. Leach

Department of Biology
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THE ORTHOGRAPHY OF MUELLER'S EPITHETS COMMEMORATING WILHELM BÄUERLEN

LAURENCE G. ADAMS, HERBARIUM AUSTRALIENSE.

In the late 1800's the name of Wilhelm Bäuerlen was perpetuated in published specific epithets in at least five genera; four were by Mueller: Correa (1885), Pultenaea (1887), Haloragis (1887, 1888) and Eucalyptus (1890a, 1890b); the other by Maiden & Baker in Acacia (1896). The first four plants had been collected by Bäuerlen in southern New South Wales, he being around that time postmaster in the small Southern Tablelands town of Bombala. A keen amateur (later professional) collector, he seems to have passed most of his material to Mueller for naming during this period.

The Code of Botanical Nomenclature (Stafleu et al., 1978) Article 73.6 states: "Diacritic signs are not used in Latin plant names. In names (either new or old) drawn from words in which such signs appear, the signs are to be suppressed with the necessary transcription of the letters so modified; for example ä, ö, ü become respectively ae, oe, ue; ...". Not only was this device widely used in the alternative spelling of personal names (as exemplified by Mueller's own name (Churchill et al., 1978), but was already accepted for botanical epithets in Mueller's time, long before a written code of nomenclature was conceived. Thus in the case of Bäuerlen (pronounced "boyerlen") a Latin epithet in the genitive case using his name would be spelt baeuerlenii, and would have the same diphthong pronunciation.

Unfortunately, in publication of the above Mueller names this transcription device was not adopted consistently, either in the epithets or in the references to Bäuerlen himself: the various spellings, all as printed, are given below. (Note the use in some instances of the optional capital B in the epithet; and a terminating single i rather than the present-day required ii, the latter a case of an orthographic error to be corrected (Stafleu et al., op. cit. Art. 73.10) but which is not the issue here):

CORREA: bauerlenii - Baeuerlenii - Baeuerlen - Bauerlen; (Mueller, 1885).
PULTENAEA: baeuerlenii - Bäuerlen; (Mueller, 1887).
HALORAGIS: Baeuerlenii - Baeuerlen; (Mueller, 1888).
EUCALYPTUS: bauerleni - Bauerlen - Bauerlen; (Mueller, 1890a).

About the same time, English word-for-word transcriptions of the Haloragis and Eucalyptus accounts taken from prints sent from Australia (probably proof copies) were reproduced in a German journal; further variation had crept in, caused no doubt by desultory editing:

HALORAGIS: Baeuerlenii - Bauerlen; (Mueller, 1887).
EUCALYPTUS: Bauerleni - Baeuerlen - Bauerlen; (Mueller, 1890b).

A new suite of variation appears in the annotations on Bäuerlen's specimens (all except the last Eucalyptus being in Mueller's handwriting):

CORREA: Bäuerlenii - Baeuerlenii - Bäuerlen (Lectotype/syntype sheet, MEL).
PULTENAEA: Bauerlenii (type?, MEL). HALORAGIS: Bauerleni (lectotype sheet MEL).
EUCALYPTUS: Baeuerleni - Baeuerlen)
Baeuerlenii - Baeuerlen) (isotype sheets, MEL).
Bauerleni - Bauerlen)

Most sheets also bear a collector's label in Bäuerlen's own hand, on which his name is consistently spelt "Bäuerlen". Note under Correa the solitary case of Mueller's use of the umlaut in an epithet: surely an instance of a slip-of-the-pen.

The published epithet spellings in Pultenaea and Haloragis present no orthographic problems since they agree with modern Code procedure. In the case of Correa and Eucalyptus, various workers in the intervening years since have either: (a) retained the epithet spelling as first printed; (b) arbitrarily used either spelling; or (c) in more recent times abided by the ruling of Article 73.6 and corrected what on the face of it is an obvious error (Art. 73.1). However, a potential problem exists in the latter case: some nomenclatural "purists" might argue that, notwithstanding Art. 73.6, correction of the "error" is not permissible because it conflicts with Art. 73.7 which states: "When changes made in orthography by earlier authors who adopt personal ... names in nomenclature are intentional latinizations, they are to be preserved." The crux of the matter thus centres around two questions, viz.: (1) Whether or not Mueller intentionally adopted the variant spelling Correa bauerlenii and Eucalyptus bauerlenii (a matter of orthography versus typography); (2) If it was intentional, whether or not the variant is acceptable under the Code (a matter of right/wrong orthography).

Dealing with question (2) first: my feeling is that the spelling bauerlenii cannot be considered a "latinization" in the sense implied in Art. 73.7; in which case only one interpretation remains, i.e. that Mueller's spelling is a candidate for correction as an orthographic error. However, the answer to question (1), on the evidence available, in my opinion should be "NO", thus rendering consideration of question (2) redundant. I am led to this conclusion by consideration of two aspects:

(a) the apparently random nature of the discrepancies in spelling amongst the published names and annotations on specimens.

(b) perhaps a more cogent point: Mueller was fluent in Latin and obviously conversant with the transcription device; that a German botanical author of Mueller's perception, when naming a plant in honour of a fellow countryman, would deliberately adopt an aberrant Latin spelling knowing that it significantly alters the pronunciation seems most unlikely.

In other words we are dealing here with a straightforward case of a sporadic typographical error, resulting from slips-of-the-pen exacerbated by editing-cum-typesetting mistakes. Thus the correct commemorative epithet spelling should be baeuerlenii in all cases, both old and new.

Acknowledgements

I am indebted to Dr. D.M. Churchill (MEL) and Mr. G. Chippendale (FRI) for photographs of specimens, and to Dr. A. Kanis (CANB) for some constructive criticism.

CORRECTION

An error in the last Newsletter (No. 24) made nonsense of the article by Laurie Adams on Wilhelm Bäuerlen. The last line should read: "Thus the correct commemorative epithet spelling should be baeuerlenii in all cases." I apologise for this mistake.

– A. S. George, Editor.

References:

Churchill, D.M. et al. (1978) - The published works of Ferdinand J.H, Mueller. Muelleria 4(1): 1-120.
Mueller, F. (1885) - Record of an undescribed Correa of New South Wales. Proc. Linn. Soc. N.S.W. 9: 960-961.
----------(1887) - Some hitherto undescribed plants of New South Wales. Proc. Linn. Soc. N.S.W. 2nd. Ser. 1: 1109.
----------(1887) - Remarks on a new Victorian Haloragis ... Bot. Centralbl. 32: 147-148.
----------(1888). - Ibid. Trans. & Proc. Roy. Soc. Vict. 24: 132-133.
----------(1890a) - Descriptions of new Australian plants, with occasional annotations. Vict. Natur. 7: 76-77.
----------(1890b) - Ibid. Bot. Centralbl. 44: 236-237.
Stearn, W.T. (1973) - Botanical Latin. 2nd. edn. (Thomas Nelson, London).
Stafleu, F.A. et al. (Eds.) (1978) - International Code of Botanical Nomenclature. Regn. Veget. 97. (Bohn, Scheltema & Holkema, Utrecht).

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AUSTRALIAN PLANTS IN EUROPE

D.E. Symon, Waite

The welcome completion of Flora Europaea allows us to read of the alien plants established in Europe. The criteria for establishment is that a species must be effectively naturalised or reported from a site for at least 25 years. Casual non-persisting aliens have not been included. Considering the great array of European aliens established in Australia the number of Australian plants naturalised in Europe make a tiny list. World cosmopolitans like Typha or Phragmites are not included in this note.

In Vol.I, I found 5 names: Alternanthera nodiflora which also occurs in the old world tropics can hardly be considered Australian, Tetragonia tetragonoides from Australia and New Zealand perhaps discarded by discriminating eaters, Hakea sericea and H. salicifolia locally naturalised in Spain and Portugal and Pittosporum undulatum now in the Azores and local elsewhere.

In Vol.II three herbs Acaena anserinifolia, Oxalis exilis and Ammannia baccifera included Australia or Australasia in their areas of origin but the last extends to the old world tropics and might be discounted as an Australian. However the woody plants again did better with 10 species of Eucalyptus plus 1 hybrid and 9 species of Acacia (or 10 if A. farnesiana is included) locally established. A. farnesiana was considered to come from the Dominican Republic.

Vol.III yielded 2 herbs, Cuscuta australis and Limosella australis but as both extend to Asia and/or America their Australianess can again be questioned. Two woody plants got a guernsey, Myoporum tenuifoliem and M. tetrandum both locally naturalised in SW Europe, and held up the side.

In Vol.IV the invasion fell away sadly with the much planted Helichrysum bracteatum and Cotula australis only to represent Australia.

By Vol.V the towel was really in. Actually nine species, Ottelia alismoides, Hydrilla verticellata, Triglochin striata, Najas graminea, Juncus planifolius, Eriocaulon cinereum, Scirpus juncoides, S. prolifer and Cyperus congestus get listed as extending to Australia, but as everyone of these extends either to the old world or the new the Australian element is minimal.

This list is remarkable for two aspects. Its very brevity, and the fact that woody aliens have if anything been more successful than herbs. Not a single species is more than locally naturalised. Not one species has been rampant in Europe, like Rubus or Bromus or Chondrilla in Australia. Not a single grass was noted as from Australia. Many African and American (N. & S.) plants have been successful in Europe and the whole question of the inability of Australian species to compete in alien floras seems worth more study.

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RATIONALISING PLANT COLLECTING FIELD TRIPS

D.E. Symon, Waite

The cost of motor travel is still rising sharply and shows no sign of levelling off. The Federal and State Governments show little sign of enthusiasm for generous funding of plant taxonomy. Budgets in all Government and University Departments are likely to get tighter.

Has the time come for better organisation of major plant collecting trips?

Many specialist collecting trips to distant localities could often take a general plant collector with them. For example, on a recent trip to the Kimberleys my colleague and I were preoccupied searching for Solanaceae and their pollinators, the latter activity being time consuming. The collecting conditions were excellent, never have I seen so many grasses in such fine state for collecting, but we had to pass these by simply because of time factors. Had we had a third person hundreds of collections could have been made.

It might be possible for at least a couple of Departments to make a small contribution each to a trip that they could not mount alone.

Certainly better notice in the ASBS Newsletter of proposed trips would be helpful to some and might well allow outside contributions to be made. In addition the cameraderie and cross-fertilisation of ideas on plant taxonomy and the flora in general discussed during such joint trips would be valuable.

In South Australia the Nature Conservation Society has had annual field camps (mostly early October) and has visited areas such as the Gawler Ranges, Mound Spring sites and Marble Range. I am sure that visiting botanists would have been welcome and would have appreciated the facilities of a base camp.

A BIOSYSTEMATIC ANALYSIS OF THE PEPINO (SOLANUM MURICATUM) AND ITS WILD RELATIVES

Gregory J. Anderson

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Abstract of paper presented to ASBS South Australian Chapter.

The group most closely related to the potato and allied wild species (section Petota) is Solanum, section Basarthrum. The section comprises one cultivated and 22 wild species. The cultigen, S.muricatum, has a long history of use in the Andes of southern Colombia, Ecuador and Peru. The wild species are usually found at altitudes between 2000-3000 m from central Mexico south to southern Peru. The centre of species diversity in the section is in northwest South America (Colombia, Ecuador, Peru). Nearly one-half of the species in the section are known from only one to three localities. All taxa and artificial hybrids assayed have a chromosome number of n=12 and no meiotic abnormalities. Only four of the 12 species studied so far are self-compatible; all others are self-incompatible. Self compatible species have styles which end in the region of the terminal anther pores; the styles of self-incompatible species exceed the staminal column. In contrast with the easily-made interspecific hybrids and relatively high F_1 fertility among the tuberous species, crosses in section Basarthrum fail most of the time, seedless fruits are produced and/or F_1 hybrids are often sterile. There are a number of examples of non-reciprocal crossability, seed set and F_1 fertility. It is concluded that, in addition to ecogeographic factors, S-gene interactions and possibly cryptic structural chromosome differences are the prominent barriers to free gene flow among the species. The systematic value of pollen, seed and hair morphology is described.

Two species of the section Basarthrum are reported to constitute sex forms of the first known dioecious species of Solanum. Both male and female flowers are morphologically hermaphroditic, but the females have longer styles and a smaller quantity of pollen which is morphologically distinct (inaperturate). Pollen from both male and female flowers is equally highly fertile. Pollen tubes grow and crosses succeed only when the long-style forms act as pollen receptors. The few species of Solanum that are non-hermaphroditic are mostly native to the Old World and Australia and are distantly related to the dioecious species.

Preliminary data on some features of the 10 andromonoecious and 9 androdioecious species of Solanum native to Australia are given. The male and hermaphrodite flowers and inflorescences are much more morphologically distinct than the sexes of the American dioecious species described above. Both male and hermaphrodite flowers of the andromonoecious species and males of the androdioecious species bear tricolporate pollen. The hermaphrodite flowers of all androdioecious species (but two for which material is not yet available) bear only inaperturate pollen. Pollen from both flower types is equally highly fertile (stainable), and of the same size in the andromonoecious taxa, while the hermaphrodites of the androdioecious taxa bear pollen which is only about half as fertile and smaller than that of the male flowers. Tests of compatibility

(crosses assayed by observation of pollen tube growth in styles)show that 4 of the 6 andromonoecious species tested are self compatible. In contrast, none of the 4 androdioecious species tested is self compatible. Furthermore none of the inaperturate pollen produced by the hermaphrodites has ever germinated. It is concluded that, like the American taxon, the species bearing the inaperturate pollen - all the androdioecious species - are actually functionally dioecious. The non-functional inaperturate pollen of the hermaphrodites is retained in these nectarless species as a reward to pollinators.

NANCY BURBIDGE MEMORIAL: A Memorial for Nancy Burbidge, in the form of an open-air "classroom" in the National Botanic Gardens, Canberra will be officially opened at 2.30 p.m. on Sunday 14th September by Lady Cowen, wife of the Governor General.

Sir Rutherford Robertson has accepted an invitation to give an address at the ceremony.

The Society's name is to be included on the brass plaque on the Memorial.

Ms. Judy West will officially represent the A.S.B.S. National Executive, and the Canberra Chapter will be represented by Ms Estelle Canning. All members will also be welcome to attend.

Judy West

NANCY BURBIDGE MEMORIAL LECTURE: The following donations have been received -

I.B. Armitage	$4.00
H.T. Clifford	$50.00

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NEW PUBLICATIONS

Two new publications have recently been released on the market in Alice Springs.

The first is "Wildflowers of Central Australia", by well-known local photographer, Barry Allwright. There are stunning photographs of over 50 Central Australian wildflowers, giving a good cross-section of the more colourful wildflowers, trees and shrubs that visitors to the Centre are likely to see in August/September. It must be pointed out, though, that this booklet is aimed at the tourist market, and although the species' descriptions are accurate and authoratative, they are of necessity, simple and brief. The photographs are, in general, close-ups of the flowers and I would have liked more habit shots to aid in easy field identification. In the case of both *Eremophila longifolia* and *Xanthorrhoea thorntonii*, the close-ups, although technically superb, give such an unusual aspect of the flowers as to make them virtually unrecognizable to the layman. The only identification error was *Ptilotus atriplicifolius* for a photo of *P. obovatus*, but the two species are easily confused. The inclusion of an index when the species are arranged alphabetically generically seems superfluous. The only other error was the incorrect spelling of one of the contributors' names in the acknowledgements. At $4.50, this 52 page booklet would be a great asset to those who enjoy

the beauty of our wildflower heritage.

The second publication is "Warlpiri Bush Medicine", prepared by a bevy of contributors from Yuendumu (some 300km N.W. of Alice Springs) and Tom Henshall from the Arid Zone Research Institute in Alice Springs. Originally planned as a much larger publication, it has been reduced to 25 pages because of printing costs. The main categorization of bush medicines is by use, so you have "sniffing", "rubbing", "drinking" and "smoking"medicines. They are used for everything from cuts and colds to assisting in childbirth. Some 18 species are described in both Warlpiri and English and are accompanied by a photograph, and sometimes a line drawing,with instructions on use and any warnings. Designed principally as a self-help mini-pharmacopoeia for the Warlpiri wanting to return to a more traditional lifestyle, it is still of tremendous importance to health workers and others in the area, and also documents the use of these plants at a time when much of this valuable information is being rapidly lost. We may yet find that the Australian Flora will yield more important drug plants (Australians have yet to utilize their own Solanum spp. which provide the basis of the Russian steroid drug industry), and documents such as this will prove invaluable in the search for new plant resources. Published by the Warlpiri Literature Production Centre Inc. on one-sided offset, and available for $3 from The Secretary, SGAP, 34 Bloomfield Street, Alice Springs, N.T., 5750.

Andrew Mitchell, Alice Springs.

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BEAUGLEHOLE, A.C. 1980. 'The Distribution and Conservation of Vascular plants in the Corangamite-Otway area, Victoria'. Available from Portland Field Naturalists Club, P.O. Box 470, Portland, Victoria 3305 for $5 a copy including postage.

This is a publication of 108 pages which includes an up-to-date checklist of the vascular flora of about 1332 species, showing the distribution of each species within the area and including many new records. The conservation status of each species is indicated and detailed distribution data are given for 475 rare species. The 146 native species absent from biological reserves are listed. The location of areas is given in which new reserves would significantly increase the number of plant species which are adequately conserved. A detailed, coloured map showing minor grid squares and the location of various types of Public Land is included.

The earlier publication, 'The Distribution and Conservation of Native Vas-Cular Plants in the Victorian Mallee' is available from the same address for the same price.

R. Parsons, Latrobe University.

SYSTEMATIC BOTANY MONOGRAPHS

The American Society of Plant Taxonomists' February 12 newsletter circular to members included information from John Thomas, editor of Systematic Botany Monographs. The inaugural monograph on taxonomy of Lygodesmia by Spencer Tomb was then expected to appear in April! About 10 manuscripts are on hand for the series and John encourages the submission of more. (Department of Biological Sciences, Stanford University, Stanford, CA 94305).

Judy West

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CHAPTER NEWS

BRISBANE CHAPTER

On 26th June, 1980 following a letter from J.P. Jessop and suggestions by R.W. Johnson it was agreed at a meeting that the Brisbane Chapter would host a General Meeting of the Society in 1982. The possibility of organizing some lectures/seminars or a field trip was also raised.

Following this discussion Trevor Clifford then addressed the meeting on the subject "Seedlings of Australian Plants". This was essentially the same as the N.T. Burbidge Memorial Lecture given by Trevor Clifford at Adelaide in May 1980 and gave local members the opportunity of hearing this lecture.

The meeting was followed by a wine and cheese supper.

James Elsol and Ralph Dowling from BRI recently attended the Second International Symposium on the Biology and Management of Mangroves and Tropical Shallow Water Communities held in Papua New Guinea in July.

The symposium was sponsored by the Western Society of Naturalists and the University of Papua New Guinea and was attended by about 190 delegates.

Mangrove and forest field trips were pleasant undertakings in the dry winter weather. The value obtained from the trips and presentations was greatly increased by the local knowledge made available by John Womersley (S.A.) and David Frodin (U.P.N.G.)

L.W. JESSUP
FOR THE COMMITTEE

MELBOURNE CHAPTER

After having suspended meetings in 1979 a meeting of the Victorian Chapter was held on 31st March 1980. Mr. Philip Short spoke on "Breeding Systems and Biogeography of some Australian Gnaphaliinae (Compositae: Inulae)". Philip was studying this group at the State Herbarium, Adelaide and has continued to spend some time on it since he joined the staff of the National Herbarium of Victoria in February 1980.

It is hoped that it will be possible to arrange another meeting before the end of the year. Dr. Dianne Simmons, of the Botany Department, Monash University, is now Acting Convener of this Chapter.

M.A. Todd

TOWNSVILLE CHAPTER

Dr. P.S. (Bill) Lavarack has just arrived in Townsville and can be located at the National Parks and Wildlife Service at Pallarenda - a seaside suburb of Townsville.

R.S. (Bob) Hill left Townsville in May to take up a lectureship in Hobart. He submitted his Ph.D. thesis in Adelaide en route to Hobart.

B. Jackes

PERTH CHAPTER

Election of 1980/81 Committee was held on June 10, 1980 at the W.A. Herbarium resulting in Steve Hopper and Kevin Kenneally being appointed as committee members, and Chris Robinson as convener. Following the elections Dr. D. Richardson (Sudbury University, Canada) presented a seminar on "Western Australian Lichens" summarizing a six month period here working on this group and upgrading local collections.

Subsequent seminars have been given by Kevin Kenneally (July 15, at W.A. Herbarium) and Ted Griffin (August 12, at Kings Park). Kevin spoke on his six month Churchill Fellowship Study Tour, details of which were presented in the March 1980 newsletter. Ted outlined his "Floristic Studies in the Eneabba - Mt Lesueur lateritic uplands". All seminars have been reasonably well supported with between 15-20 members and interested persons attending.

Chris Robinson

SOUTH AUSTRALIAN CHAPTER

27th February: Gregory J. Anderson from University of Connecticut, USA; at the time: Waite Agricultural Research Institute, Glen Osmond, S.A.

A biosystematic analysis of the Pepino (Solanum muricatum) and its wild relatives. (See abstract earlier in this newsletter - page 12).

26th March : Bryan Barlow, Flinders University.

The chromosome basis of dioecy in Viscum

In the genus Viscum many species are dioecious. Recent cytological investigations have indicated that this condition could be linked to translocations as shown by multivalents found in male flowers of dioecious species.

30th April : Hellmut Tölken, Adelaide Herbarium.

The vegetation of Namibia - a land between two deserts

An illustrated talk to show the superficial physiognomic similarity of the arid vegetation there and in Australia. The extreme desert condition of the coastal region of Namibia impressed even hardened Australians.

South Australian Chapter - continued...

25th June : Dr. J.H. Warcup, Waite Agricultural Research Institute, Glen Osmond, S.A.

Mycorrhizal relationships of Australian terestrial orchids.

Earlier claims of fungal specificy in mycorrhizal development; in specific host plants was shown to be largely due to artificial groupings in the Fungi Imperfectae. Improved means of identifications showed, however, that only specific fungi can be found in certain indigenous as well as extra-Australian orchids. The fungal specificity often coincides with generic or higher taxonomic groupings.

30th July : Professor H.B.S. Womersley, University of Adelaide.

Red Algae in South Australia.

The complicated life cycle of the Red Algae compounds the difficulties of their taxonomy as an understanding of the plants is basic to any classification. The southern Australian region is exceptionally rich in species and especially its eastern parts have a high percentage of endemics when compared with other areas of the world.

H.R. Tölken, Adelaide

SYDNEY CHAPTER

The Sydney Chapter continues to pursue an active programme of meetings, despite the lack of reports in the Newsletter - for which the conveners stand chastised. This year's seminars are being held in the Seminar Room of the Botany School, University of New South Wales, largely to avoid the noise, disorganisation and absence of parking at the National Herbarium that is accompanying the building of the new Herbarium. It is a small price to pay for this long awaited improvement, which is as yet a big hole in the ground.

Meetings are held on the second Monday of each month at 5.30 p.m. commencing with a period of chat over drinks. The first evening (March 10th) got us off to a stirring start, when Paul Adam, of the Botany School, U. N.S.W., attempted to tell us what he, as an ecologist and hence a user of taxonomy, thought of some of the things we did. Having put his head in the lion's mouth, he clearly anticipated getting it bitten off. The discussion on phylogeny and taxonomy raged, largely to the exclusion of the points he raised about the construction of keys. I think he would get a great deal of support in this area, and with the Flora Australiensis project descending on us, construction of keys that work is something many of us should devote more thought to. One trouble seems to be that those of us who design the keys never have to resort to using them seriously. After all, it does help if you know the answer already. Anyway, full marks to Paul for bravery, and I'm pleased to say he is an undaunted member of the chapter still.

Don Blaxell, of the National Herbarium, gave the April 14th seminar on some of the problems of orchid taxonomy. The problems of assessing variability in populations of such ephemeral nature in which different individuals break dormancy

so irregularly that the same apparent population is constituted of entirely different individuals in successive years was well illustrated - certainly enough to deter the faint hearted.

The June 9th meeting was devoted to an account of the dynamics of palm crowns by Tony Rodd, of the National Herbarium. Unfortunately your correspondent, who has more than a passing interest in the subject, was reduced to a snivelling heap at home in bed that night, but by all accounts it was a copiously illustrated and interesting story of how palms, with overlapping leaf sheaths are able to grow without strangling themselves.

The July 14th seminar was given by Ian MacFarlane, of the Biochemistry School, U. N.S.W., on the subject of nitro-compounds as potential taxonomic characters. He gave a good summary of the present scanty knowledge on the natural occurrence and identity of these compounds, and then outlined some data (very hot off the press) that he had obtained from the beginnings of a survey of Indiofera. Clearly there are many factors, such as the ecological, seasonal, developmental and genetic variability of the characters, but the attraction of a chemical taxonomic study that can be carried out on herbarium specimens of great age using as little as 2 gms. of material are obvious. Ian hopes to extend his survey considerably, in collaboration with a tame taxonomist, and will be seeking material (both fresh and dried) in the future.

The August 11th meeting will be devoted to a discussion of the origins and evolution of the New Guinea and Australian montane floras by Jeremy Smith, of the Department of Geography, University of New England. It promises to be a bumper turnout, with many ecological and geographical ringins - all of whom are very welcome to the initial drinks and chat, as well as the seminar. In addition to this formal programme, which extends until December 8th, we have occasional special seminars, usually arranged at short notice. On January 18th, we heard from Ms. Heidi Dodson on the subject of the pollination biology of some of the plants of the more mesic regions of California.

A chapter dinner is being arranged for the evening of September 8th. Any members interested in further details, or wishing to make a booking should contact the conveners Chris Puttock, or Chris Quinn (02) 662.2718 (or 662.2721). Any out-of-towners who happen to be in Sydney at this time are especially welcome.

Of course, all members of the chapter are starting to get deeply submerged in IBC affairs, but we will try to make further reports.

Christopher Quinn
(University of New South Wales)

30:vii:80

PAPUA NEW GUINEA - NEWS

The Papua New Guinea Botanical Society had a successful two-day meeting in Lae in early June 1980.

Dr. David Frodin has completed (at last!) the manuscript of his Guide to Standard Floras of the World for Cambridge University Press; publication is expected late 1980.

David Frodin