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TERRORIST TACTICS IN TAXONOMY*

G.B. Monteith, Queensland Museum

Since recent events in Australian herpetology threaten the stability of all biological nomenclature it is imperative that the whole biological community be aware of what is happening and work towards control of the situation. As mentioned later entomology may be next to be affected.

Our system of classification and nomenclature of animals is a rather fragile and dynamic one, continually growing and evolving to accommodate new taxa and ideas. The protocol of priority of publication of taxonomic names gives much greater weight to the published word in taxonomy than in other disciplines (where outrageous work can be simply ignored or dismissed). It follows then that there must be some rational control on what gets into print if any semblance of stability is to be preserved. Several such controls normally exist:

(i) The International Code of Zoological Nomenclature. This is the Code of procedure which binds all taxonomists. It consists of mandatory Rules (Articles) and non-compulsory Recommendations. The Rules alone are not very strict, and this is done purposefully to preserve the validity of the actions of well-meaning authors writing in past years when taxonomic procedures were not well defined. Modern authors would be ethically expected to comply with both Rules and Recommendations.

(ii) Editorial Policy. Most journals maintain high editorial standards outlined in their "Guide to Authors". These generally include some guidelines for taxonomic procedure.

(iii) Refereeing. A cornerstone of modern scientific publication is the system of MS review where specialists in the field are allowed to assess MSS under consideration for publication.

(iv) Printing Costs. These have an inhibitory effect on authors who may wish to resort to private publication of MSS unacceptable to refereed journals. However, as modern printing costs fall this factor becomes less of an impediment to "rogue" authors.

To the dismay of herpetologists around the world two large, privately-owned unrefereed papers have recently appeared (1984 and 1985), both co-authored by R.W. Wells and C.R. Wellington. These papers make a mockery of the Code's Rules and ignore its Recommendations. Both purport to revise the entire Australian reptile fauna adding no less than 470 species and 107 genera to the previously accepted fauna. Most names are introduced without diagnoses; many are erected on information in other people's work. No keys or illustrations are included and rarely are new taxa differentiated from related taxa. Considering the normal checks, mentioned above, against the issue of such publications one may very well ask how these have come into being. The tale is worth telling ...

Several years ago a group of Sydney herpetologists formed the Australian Herpetologists League for the purpose of starting a periodical

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* Editorial from Australian Entomological Society News Bulletin 21(3): 66-69, Aug. 1985, reprinted with permission of the Editor, G.B. Monteith

called the Australian Journal of Herpetology. By the virtue of the enrolment of its Editor, Richard Wells, in 1st year of a B.Sc. at University of New England the periodical was able to use a University address. The first two issues of Aust. J. Herp. appeared in 1981 and contained a broad spectrum of conventional herpetology papers from both amateur and professional authors. Individuals and libraries from Australia and overseas subscribed giving it a financial base. An Editorial Board of three professional herpetologists, including Professor Heatwole from UNE, was formed to arrange reviewing of MSS before transmission to Editor Wells. Wells failed to complete his 1st year B.Sc. and moved to Sydney, though continuing to use a UNE Post Box for his address. The journal failed to appear for two years though various processed MSS were sent to Wells. Then without warning in 1984 an enlarged 56 pp issue of Aust. J. Herp. appeared completely occupied by a paper entitled "A Synopsis of the Class Reptilia in Australia" authored by R. Wells and C.R. Wellington. It comprised a crude treatment of the entire reptile fauna with 33 new genera, 8 genera raised from synonymy, 14 new species and 200 names raised to species rank or resurrected from synonymy. Instead of the Australian Herpetologists League, the issue was copyrighted to Australian Biological Services, an entity apparently under the sole control of Wells and Wellington, cited respectively as Managing Editor and Advertising Sales Manager. The Editorial Board resigned in protest at the appearance of this unrefereed paper. Requests to Wells for return of some of these MSS by their authors have been ignored. A unanimous vote at the AGM of the Australian Society of Herpetologists last year favoured seeking suppression of Wells and Wellington's (hereafter "W&W") paper by the International Commission: however it is clear that this will be no easy goal. Three Letters to the Editor in the latest issue of the international Herp. Review 16(1): 4-7, by the resigned Editorial Board and Carl Gans, an eminent herpetologist, expose the actions of W&W and appeal for non-use of their nomenclature.

Not to be deterred, W&W have just circulated a 2nd purported publication entitled "A Classification of the Amphibia and Reptilia of Australia". This runs to 98 pp and treats the frogs in the same manner as the first paper, as well as "re-revising" the reptiles. It describes 146 new species and erects 110 more from synonymy; it describes no less than 57 new genera and raises 9 more from synonymy. A further step is the designation of lectotypes for 108 species. The status of this recent issue is unclear. Their first opus appeared in the properly-printed format of previous issues of Aust. J. Herp. This second one is marked Aust. J. Herp. Suppl. Ser. No. 1 and it bears the inscription "Published 1 March, 1985", but the only copies so far sighted are spiral bound photocopies of computer printout*. Requests for original copies have been unanswered by its authors. The address of Wells in this issue has changed to a mythical "Australian Zoological Museum" at a P.O. Box in Katoomba. Wellington's address is given at nearby Blaxland High School where he teaches.

A curious feature of their 2nd paper appears in its "References" where more than 500 purported papers by W&W are cited as having been published since 1983 in Australian Herpetologist. These are systematically listed by titles and page numbers, many approaching 100 pp in length. Also a 10 volume

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* On 16 September, 1985, after this article was originally published, T.J. Hawkeswood distributed several copies of a properly printed version of this MS in Brisbane on behalf of Wells and Wellington. The text is essentially unchanged and still includes the 500 spurious literature citations. Though first revealed in September it is erroneously dated 1 March. This mischievous MS is now unequivocally "published" under the Code. (G.B. Monteith)

work titled "The Herpetology of Australia" by Wells and Magnus Peterson is listed as "in press" with Australian Biological Services. Peterson is known to many museum entomologists for his interest in jewel beetles and dragonflies. The bizarre aspect of these listed publications is that they do not exist; Australian Herpetologist is a "phantom" periodical, unknown to libraries.

Throughout both publications a contrived patina of respectability is presented by effusive acknowledgement to other Australian herpetologists for assistance, and by the ostentatious bestowal of patronymic species names on everyone from the Prime Minister down - even Darth Vader scores a genus! Many of those acknowledged joined the motion seeking suppression of W&W's work.

Clearly much effort by W&W went into their contentious MSS, for both MSS methodically deal with the whole Australian reptile fauna, the 2nd also treating all Amphibia. One may very well ask: What are their motivations? and how did they accomplish blanket taxonomic coverage in such a large field?

Their motivations are clear from the introduction to the first paper. They believe that "many species have their true identity masked by conservative taxonomic treatment, and are experiencing extensive loss of range" and thus "an urgent task is official recognition of their existence". "Effective environmental protection can only be enhanced if a region's biological diversity is recognised at its finest possible resolution" and they argue that "lack of detailed studies is no grounds for the widespread suppression of taxa ...". Theirs is thus a radical conservation ethic, not a desire for rational scientific enquiry. W&W believe that conservation can be enhanced by regarding every possible variant or disjunct population as a discrete species - and they set about achieving this end by stretching the International Code to the limits of absurdity.

How they achieved this end with minimum effort is simply seen. It is no coincidence that their first paper appeared soon after issue of the first volume of ABRS's Zoological Catalogue of Australia which treats Reptilia and Amphibia. This volume does all the hard work. It lists all valid species and synonyms with bibliographic references to them all; it lists type localities with location and registration numbers of type specimens; it gives distribution of all species. Using modern computerised word processing techniques W&W accessed what they required of this extensive database. Then they reshuffled it to not only validate hundreds of long-synonymised names but also to recombine hundreds of names under their own 90 new genera. Further, by cleverly exploiting loop holes in the Code they have put names to scores of populations mentioned in other people's publications, often without even seeing specimens or giving a diagnosis. ABRS's dream that their expensive new Zoological Catalogue series would facilitate and expedite taxonomic research in Australia has been turned into a nightmare. The Bureau of Flora and Fauna, perhaps more than any other group, must concern itself at these events. The quality of W&W's taxonomy is unforgiveably poor, as has been documented by herpetologists King and Miller in Herp. Review 16(1): 4-5. If it is to be accepted into the herpetological literature then the whole rational contribution of the Zoological Catalogue will be negated, and the burden on conventional taxonomists to rectify the situation will be quite intolerable. Some of W&W's techniques of exploiting the Code are worth itemising, because they point to the need to tighten up the Code in some respects (SEE APPENDIX).

What of the future? W&W provide a similarly constructed "Synopsis of the Amphibia and Reptilia of New Zealand" at the rear of their 2nd Australian opus. They cite a similar synopsis of the New Guinea reptiles as "in press" and refer to a world review of reptiles and amphibia as being "in preparation". They have given notice of their intention of treating Australian fish in the same manner when the relevant Zoological Catalogue appears soon. With their obvious determination, their superficial methodology and their trusty computer these aims are probably achievable. Their task has been greatly simplified by the new 3rd Edition of the Code which permits photocopying as a valid means of taxonomic publication from the beginning of 1986. This removes any economic impediment from their activity.

Can entomology become involved? There is a very real danger that W&W's activities are about to spread to insects. It is known that W&W are attempting to establish an "alternative" periodical to be titled Australian Journal of Natural History under their Australian Biological Services umbrella.

Numerous approaches to amateurs have been made soliciting MSS for this periodical with promises that they would be free of "repressive refereeing" by professionals. At present "Aust. J. nat. Hist." is in the same "phantom" category as "Australian Herpetologist" having been cited but not sighted, e.g. in a recent issue of Aust. ent. Mag. as well as in W&W's second MS. Considering disputes which have occurred in areas of beetle taxonomy there is a strong likelihood that Aust. J. nat. Hist., and others of W&W's publishing enterprises may provide outlets for entomological material unacceptable elsewhere.

What can be done? It is imperative that legitimate Australian herpetologists proceed with a carefully and fully documented case to the International Commission for suppression of the W&W papers. In the meantime it is extremely unwise to use any of the new nomenclature proposed by W&W. There are precedents where demonstrably mischievous publications are ignored, even in the absence of formal suppression. But unity and resolve are essential. And it is imperative that the wider biological community recognises the importance of these events, discusses them, and seeks solutions. This applies, not least, to entomologists.

APPENDIX: TECHNIQUES OF INSTANT TAXONOMY

(i) New taxa without diagnoses. Numerous new species and genera are named by W&W without presenting any diagnostic information themselves but merely refering to illustrations or statements in other publications. For instance, Covacevich (1984) described *Leiolopisma jigurru* sp.n. based on several specimens in the Queensland Museum. She does not imply that it is discrete from all its congeners. W&W make it the type species of a new monotypic genus by the following bald statement: "Diagnosis: At present regarded as a monotypic genus confined to north-east Queensland. The description of *Leiolopisma jigurru* by Covacevich (1984) is adequate to diagnose the genus. Oviparous". They did not see specimens. Scores of taxa are erected in this way which is marginally legitimate because Article 13(a)(ii) allows a "bibliographic reference" to a "published statement" as diagnosis of a new name. However, those names of W&W which are based solely on reference to a photograph (e.g. *Lissolepis aquarius*) are clearly invalid.

(ii) New taxa without seeing the type. W&W designate many holotypes from Museum collections, often citing Registration Numbers. It should not be assumed that they saw these specimens at the time of their description and indeed it is clear that often they never sighted the specimen nominated as Holotype. For instance, Czechura (1983) records the NG monitor *Varanus prasinus* from Cape York on the basis of 3 specimens in the Queensland Museum and cites their Registration Numbers. W&W cite one of them as holotype of a new species, without having seen any of the three specimens. Access to Australian Museum Registration Numbers was gained during former periods of volunteer work by Wells in that institution - many are now cited as holotypes. When W&W have not been able to get precise details of potential holotypes they knew to be in certain collections they cite them in a general way, e.g. *Tympanocryptis telecom*; "HT - an adult specimen in the Australian National Wildlife Collection collected on Black Mountain by CSIRO staff": *Tropicochelymys goodei*, "HT - an adult in the Australian Museum, collected along the Jardine River, Cape York Peninsula". The Code does not make it mandatory for an author to see or label the holotypes he designates.

(iii) Holotypes in Private Collections. W&W lodge a number of their holotypes in their private collection under the title, "Australian Zoological Museum". The Code only recommends that types be lodged in official museums.

(iv) Lectotype Designations. Lectotype designation is a critical nomenclatural action governed by the Code which requires that a particular specimen be specified. W&W designate more than 100 in Museums around the world. It is clear that W&W have not examined syntypic series but merely quote registration numbers selected from the Zoological Catalogue. When several identically labelled syntypes were available in an overseas Museum they nominate "the largest" specimen to conceal the fact that they have not been directly examined. The authors have not attempted to label the designated Lectotypes, in contravention of Code recommendations.

(v) Nomenclatural Triviality and Fickleness. The personal polemics of the authors are incorporated into the names of many of their new taxa (Licentia - "freedom to do as one pleases"; Phthanodon - "to anticipate or do first"; Cotundo - "to crush"; Anepischetos - "unrestrained"; Libertadictus - "devoted to freedom"; Solvonemesis - "to set free the goddess of retributive justice"). Their fickleness is shown by the fact that their 2nd "revision", appearing only 1 year after their 1st describes 38 extra reptile genera. At least 5 genera synonymised in their 1st paper are raised again in the 2nd. Only stringent editorial standards can protect taxonomy from such irrational behaviour - the Code provides no defence.

COMMENTARY

Plant taxonomists should be aware of the recent developments discussed by G.B. Monteith. As these could seriously affect the future standing of our discipline in the scientific world, it is understandable that our zoological colleagues are upset. The qualifier "terrorist" in describing Wells & Wellington's "tactics" does not appear too far-fetched, as the consequences of their actions are indeed frightening. One would also be justified to say that the Zoological Catalogue of Australia, published by the Bureau of Flora and Fauna as an aid for bona-fide taxonomists, has been hijacked by some individuals who have organised themselves outside our taxonomic community, which is somewhat precariously based on international agreements and a mutually recognised standard of behaviour. We can only wish our colleagues

well in their endeavour to declare W&W's new names and combinations unavailable (cf. invalid) under the Zoological Code. We must follow their actions closely, as botanists may have to take similar action one day to safeguard much of what has been achieved since 1753.

Although there exist some technical differences between the operatives of the Zoological and Botanical Codes, many of the points raised are relevant also to our work. The following notes appear warranted (numbering in accordance with Monteith's Appendix):

(i) It is possible to publish a new combination or substitute name for a plant without a description or diagnosis, merely by a reference to a previously and validly published name (Art. 32.1.c). Since 1 January 1953, this has to be a full and direct reference to the relevant basionym or replaced name, its author and its place of valid publication (Art. 33.2). The present ruling enforces a certain accuracy in publications, but it does not prevent frivolous taxonomic practices.

(ii) A holotype is the one specimen or other element used by the author or designated by him as the nomenclatural type (Art. 7.2). It is usually assumed that an author has actually seen a relevant holotype, but under the present wording this does not appear to be mandatory. Neither is it required that an author annotates a type specimen in person, as "designation" would be possible through publication elsewhere. Besides, some actually prefer not to label specimens prior to publication for one reason or another. There is no doubt, however, that our Code does leave possibilities for unscrupulous practices in this respect.

(iii) Regarding the lodging of a botanical type specimen it is only recommended that the place where it is permanently conserved should be indicated in the relevant publication (Rec. 37B). Although private herbaria would not appear to be suitable places for "permanent conservation", these have not been ruled out specifically. Apart from preservation, ease of access should also be a cause for concern, particularly where mischievous authors are concerned.

(iv) It is not spelled out that relevant original type material should be annotated or seen by the author who designates a lectotype. In practice, this is not always possible anyway, but bona-fide taxonomists will at least make a serious attempt to see what is traceable. Fortunately, under Art. 8 it is possible to correct a lectotypification that is demonstrably wrong according to certain criteria.

(v) The Botanical Code does not require a taxonomic justification for any change in rank as this falls definitely outside its scope.

(vi) Our Code cannot prevent nomenclatural triviality and fickleness as such value judgements also fall outside its scope as presently perceived.

Conclusion: Although the rules concerning future (lecto-)typifications and the housing of type specimens could be tightened, it is difficult to see how better taxonomic practices could be insisted upon other than through a system of refereeing of all relevant papers before publication. Perhaps it could be made a condition of valid publication that it be made through an approved periodical. Likewise, the housing of type specimens in accredited institutions could be insisted upon by international agreement. No doubt such measures would require lengthy deliberations and it would indeed be regrettable if we were forced into making more restrictive rules regarding matters other than strictly nomenclatural ones in our Code.

Andrew Kanis

PASPALUM DISTICHUM L. IS NOT REJECTED

B.K. Simon, Queensland Herbarium

The impression is conveyed by Todd, 1985, that a state of uncertainty exists as which of the two names *Paspalum distichum* L. or *P. paspalodes* (Michaux) Scribner should be used for Water Couch. I draw readers' attention to the Report of the Committee for Spermatophyta: 25 in Taxon 32: 281 (1983) where by a vote of 0-11 the Committee rejected the proposal by Renvoize & Clayton (1980) to reject *Paspalum distichum* L. and accepted the lectotypification of Guedes (1976). Thus the correct names for Water Couch and Salt Water Couch, are *Paspalum distichum* L. (syn. *P. paspalodes* (Michaux) Scribner) and *Paspalum vaginatum* Swartz. This correct application of the names has been used in Australia recently by both Forbes et al. (1984) and Jessop (1984).

REFERENCES

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Guedes, M. (1976). The case for *Paspalum distichum* and against futile name changes. Taxon 25: 512-513.

Jessop, J.P. (1984). A list of the vascular plants of South Australia, second edition. Adelaide Botanic Gardens and State Herbarium.

Renvoize, S.A. & Clayton, W.D. (1980). (528) Proposal to reject the name *Paspalum distichum* L. Syst. Nat. ed. 10, 2: 855 (1759). (Nom. rejec. prop.). Taxon 29: 339-340.

Todd, Mary A. (1985). A conspectus of new records and nomenclature for vascular plants in Victoria 3. Early 1980 - early 1984. Muelleria 6: 59-78.

Report from the Bureau of Flora and Fauna

It is the intention of the Advisory Committee of the Australian Biological Resources Study that in future volumes of the Flora of Australia we regularly include information on Aboriginal uses of plants. Until now this has been done sporadically in the Flora. There is a large amount of such information both published and unpublished. During the next 12 months, the Bureau will compile a list of sources which will be made available to contributors. In the meantime, all contributors are asked to include Aboriginal usage where possible. Where time permits we also hope that it can be added to manuscripts that are otherwise complete.

We would appreciate advice of any published or unpublished sources that can be drawn upon for the Flora.

Roger Hnatiuk
Assistant Director (Flora)

SPELLING OF POSSESSIVE PLACE NAMES

In order to follow current usage in the Flora of Australia I recently sought advice from the relevant nomenclatural authority in each State and the Northern Territory.

In effect this advice may be summarised as follows:-

In Western Australia, the Northern Territory, South Australia and Queensland the possessive 's' is dropped unless the euphony of the name would be destroyed or the name lose its significance. Thus King George's Sound becomes King George Sound.

In New South Wales, the Australian Capital Territory, Victoria and Tasmania, the apostrophe is deleted but the 's' retained, e.g. Wilsons Promontory.

It should be noted that the authorities concerned have decided to meet again and discuss common problems. Use of the possessive form and aboriginal place names will be discussed.

Alex George,
Executive Editor (Flora)

Chapter News

PERTH CHAPTER

The meeting on 19 June heard Mark Burgman give "a brief critical review of cladistics and some example applications". Mark, a Ph.D. student at the University of Western Australia, has now departed to complete his degree at the State University of New York at Stony Brook, where he will work with F.J. Rohlf.

On 17 July, we heard Dr Syd James, Botany Dept., University of Western Australia, speak on "Distribution of genetic diversity in *Isotoma*".

At the 21 August meeting, John Green, Western Australian Herbarium, gave us "A new edition of the Census of the Vascular Plants of Western Australia - a pre-publication exposition". The second edition is now in press.

Terry Macfarlane

MELBOURNE CHAPTER

At the July meeting Professor Carrick Chambers presented the rather depressing ecological and conservation dilemmas of Australia's Pacific neighbours. Inadequate and incorrect advice regarding the management of natural resources has resulted in the choice of inappropriate options and severe land degradation. Carrick discussed relationships within *Blechnum*. The value of field observation and the scarcity of adequate collections in the herbaria was made apparent. Carrick has promised to lodge some material at MEL.

At the August meeting Dr Roger Spencer discussed the taxonomy of *Callistemon*. Useful characters are very elusive and traditional characters are quite inadequate. Nevertheless, some order was drawn from this chaos using additional characters of conflorescence width, frondosity and stamen number. Bentham's suggestion that 'The great similarity of structure throughout the genus prevents the establishing (of) any definite subdivisions ...' is still pertinant.

Forthcoming Meetings

5 September 'Revegetation and the biology of native colonisers', Robin Adair (Land Protection Service)

3 October 'Some aspects of the biology and taxonomy of *Caladenia* (Orchidaceae)', Geoff Carr (MEL)

The purchase of two Casio FP-6000S computers at last gives MEL some word processing ability although this is still limited to the office and the director.

S.J. Forbes

FLORA OF CENTRAL AUSTRALIA

The first printing of Flora of Central Australia has sold out and has been reprinted. There are virtually no changes in the text except for corrections to the maps, and to the names of a couple of contributors. The dust cover design now includes pictures of *Calotis erinacea*, *Clianthus formosus* and Palm Valley.

The recommended retail price is $49.95.

Work has started on the manuscript for a revised edition to be submitted to the publishers next year.

J.P. Jessop
Chief Botanist for Director

IDENTIFICATION MANUAL PROJECT AT NSW

The 'Identification Manual' is a significant project that will result in a concise guide to the identification of plants in New South Wales. Since no comprehensive guide exists for the State as a whole, this project is being undertaken on a state-wide basis rather than as fill-in regional floras for areas that are not already covered.

The Manual will provide a comprehensive treatment by means of keys, descriptions and illustrations of the species native and naturalized in mainland New South Wales. Small line drawings are included with each species description, these will show diagnostic features so that species and genera can be separated more readily. Many of the keys will be based on vegetative features rather than on traditional floral characters. It is hoped that it will be useful to a wide cross-section of the community, from professional botanists and students to amateur botanists.

The Manual will be published in four volumes. The first will include keys to families, glossary and the treatment of Ferns and Fern Allies, Gymnosperms and Dicotyledon families, up to (Rosaceae s.l.) under the Dahlgren system. The second volume will cover families Proteaceae to Fabaceae, including Myrtaceae. The third volume will treat the remaining Dicotyledon families and the fourth volume will deal with the Monocotyledons. The manuscripts for Volume 1 should be completed by late 1985.

The Manual is supported and mostly funded by the Royal Botanic Gardens and Domain Trust. One Botanist, Mrs Gwen Harden, is seconded to the project full-time with other Botanists contributing treatments of various families. Contributors to Volume 1 include Dr Surrey Jacobs, Dr Peter Wilson, Ms Teresa James, Mrs Karen Wilson, Ms Joy Everett, Dr Barbara Briggs, Mr Andrew Doust, Mr Bob Makinson, Mr Andrew Mitchell, Ms Liz Norris and Dr Judy West (CANB).

Ms Christine Payne, with the help of temporary staff, is preparing the illustrations to accompany the text.

Gwen Harden
Botanist

PLEASE LOOK FOR *CERATOCEPHALUS* IN AUSTRALIA

In 1984 I described and named *Ceratocephalus pungens* (Ranunculaceae), a new species so far known only from Southern New Zealand (N.Z. Jour. Bot. 22: 135-137). The genus has two other species, which occur in Southern Europe and Southwest Asia. At the time of its description, *C. pungens* had not been collected for about 30 years, but in September 1984 it was found again by Alice Shanks of the Lands and Survey Department. Subsequently, I visited that population and found 2 others, and made collections. Duplicates have recently been sent to AD, CANB, MEL, and NSW.

I have a hunch that *C. pungens* is not native to New Zealand, but naturalised there and native to Australia, and I would like to encourage Australian botanists to watch for it in the field. The plants are very small spring annuals, superficially similar to small rosettes of *Aphanes* spp., and a check of *Aphanes* holdings in herbaria may be worthwhile. In New Zealand, *C. pungens* grows in depleted tussock grassland in fine bare soil, often in rabbit-infested regions, in the driest parts of the country (S. Canterbury, C. Otago). A number of Australian species from semi-arid grasslands and tablelands are naturalised in such areas, among them *Gypsophila australis*, *Scleranthus fasciculatus* and three species of *Rytidosperma*.

Phil Garnock-Jones
Botany Division, DSIR
Private Bag, Christchurch
New Zealand

Figure 1. *Ceratocephalus pungens* X2.5. Note the distinctive woolly-hairy leaves and sessile heads of achenes, each achene with a spiniform beak and an inflated empty cell on each side. Figure by Vicky New.

DEATHS

Readers will be most sorry to hear of the recent deaths of two of Kew's senior botanists, with strong Australian links, Dr Ronald Melville (aged 82) died on 6 August and Mr Kenneth Airy Shaw (aged 83) on 19 August, both had suffered strokes. Obituaries will appear elsewhere. Donations in memory of Ronald Melville are being made to the World Wildlife Fund (UK), (Panda House, 11/13 Ockford Road, Godalming, Surrey, UK) and a fund is being set up in memory of Kenneth Airy Shaw. Friends and colleagues are invited to send cheques; for the latter fund they may be made payable and sent to The Bentham-Moxon Trust (Airy Shaw Memorial Fund), Royal Botanic Gardens, Kew, Surrey, UK.

P.S. Green

NATURE SURVEYED: NATURAL HISTORY PAST, PRESENT AND FUTURE

The Jubilee Symposium of the Society for the History of Natural History

British Museum (Natural History), 17-21 March, 1986

The Society for the History of Natural History was founded in 1936 and has achieved international recognition for its widely-based achievements in both the history and bibliography of natural history. The main theme of the symposium is the presentation of natural history in the past, present and the future. A historical perspective is important as it permits wider understanding of man's appreciation of the natural world, and the contemporary means of its presentation in the past and present together with its role in the future.

The themes to be discussed will include the nature of natural history and man's response to the natural world; the social communication of personal experiences of nature and the development of them through societies and institutions; and the impact of developing technology in the presentation and transmission of the knowledge of natural history.

Registration forms are available from:-

Mr P. Davis,
Conference Secretary,
Hancock Museum,
Newcastle Upon Tyne,
NE2 4PT,
UNITED KINGDOM

Book Review

Eucalyptus 1. New or little known species of the *Corymbosae*: D.J. Carr & S.G.M. Carr, Phytoglyph Press, Canberra, 1985. 116 pp.

Any publication in which 20 species of *Eucalyptus* are described as new warrants serious attention, especially one written by D.J. Carr and S.G.M. Carr. The bibliography of 33 titles, more than a third of them with one or other as senior author, indicates the extent of their studies in the genus. Eucalyptus 1 appears 14 years after the term phytoglyph was introduced to plant science and it is no coincidence that it is produced by Phytoglyph Press. For those who do not know, phytoglyph are "microanatomical features, not inadvertent trivial, surface irregularities but closely controlled extracellular products of the epidermal layers, with their own morphology no less distinctive and perhaps even more so than the grosser, morphology of flower and fruit, leaf and stem" (Carr *et al.*, 1971). The book is a smallish but attractive, well designed volume flawed only by a few misprints and a rather messy p. 115 (Addenda, where additions and amendments to descriptions are made). There seems to have been some haste in its publication. It is well illustrated with photographs of type specimens, plants in the wild and seedlings in the glasshouse, dot maps and outlines of fruits. The photographs of the cuticle of an adult leaf of *Eucalyptus dichromophloia* sensu stricto as a title page is a nice touch. The softback copy in the library of the Queensland Herbarium is already showing signs of wear. I suggest libraries purchase hardback copies.

It is evident, from my knowledge of *Eucalyptus* which is derived largely from field, rather than herbarium, studies that the genus still presents a lot of problems. The narrow-leaved ironbarks and the bloodwoods, particularly those referred to *E. polycarpa* and *E. terminalis*, continue to be a mystery to me. Consequently I welcomed this addition to the already large body of literature on eucalypts. It was a little disappointing to learn from the author's preface that more work has to be done before all species of bloodwood are described.

The first chapter on some diagnostic features of the *Corymbosae* is well presented and is recommended reading for all botanists interested in *Eucalyptus*. Unfortunately data obtained by the use of microscopical techniques are not included. The account of the ontogenetic sequence of leaf shape in eucalypts explains a lot that had been rather obscure to me before. The 'style in pit' character attracted me as being a valuable aid to identification if it really is species-specific. I checked the illustration of the flower of *E. jacobsiana* referred to. It is not very informative. The date of its publication was 1970, not 1971.

In the second chapter previously named species, *E. dichromophloia, E. arenaria, E. erythrophloia, E. terminalis* and *E. polycarpa*, are discussed. Again the results of phytoglyphic examination of these are promised in another publication. The first three species were treated in a preliminary way in Carr, Milkovits & Carr's 1970 paper. *E. dichromophloia* is described in some detail though, if it is confined to the 'Darwin Peninsula' (wherever that is) how can Boomsma's drawing in Native Trees of South Australia be an accurate portrayal of seedling leaves? In all descriptions, ranges of measurements are given. Contrary to usual practice, values in parenthesis are the extremes of the range and the single value not in parenthesis is the mean. The confusion of *E. latifolia* with *E. arenaria* is discussed at some length, but the force of the argument is blunted when, in a footnote pasted-in, it is revealed that it is neither *E. dichromophloia*, as identified by Blake, nor *E. arenaria* but *E. coniophloia* (sp. nov.). Perhaps phytoglyphs are not all that I had expected them to be. In the discussion of *E. arenaria* the authors explain why some plants of *E. torelliana* appear to be *E. citriodora* x *E. torelliana* hybrids.

The species I have been misidentifying for the last 20 years as *E. dichromophloia* is *E. erythrophloia*. Or it appears to be; there is a gap in its mapped distribution (in central Queensland) where I would have thought it to be common and well collected. In Queensland *E. terminalis* occurs in at least four different ecogeographical situations - on clay alluvium of the Georgina River, on shallow calcareous soils in grassland at 'Natal Downs' south of Charters Towers, on deep sandy alluvium of the Belyando west of Clermont, and on 'Hard' mulga country south-east of Charleville, I am prepared to accept that these are four different species. From the discussion following *E. orientalis* I would guess that the first is true *E. terminalis*. Until further work is done I must either continue to use the name for all four taxa, or apply the name to the Georgina River taxon and refer to the others as *E.* sp. aff. *E. terminalis*. The situation in *E. polycarpa* is similar. I can accept one of the bloodwoods in Cape York Peninsula as *E. polycarpa*, but now have no name(s) for the species so-called in central and southern Queensland. *E. pyrophora* is considered to be conspecific with *E. terminalis*, but fruits of the type specimen of the latter show the style 'in pit' whereas the contrary is true for syntype material of the former. The discrepancy casts doubt on the constancy of the 'style in pit' character.

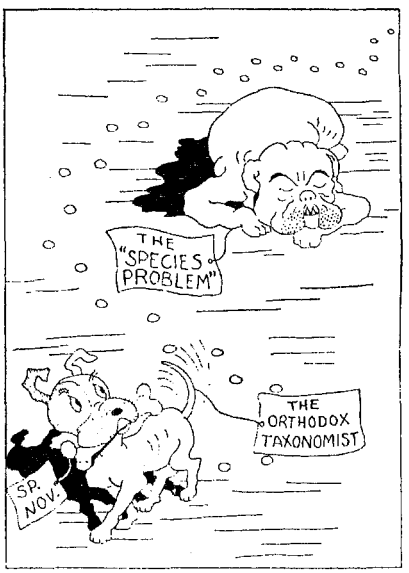
Eleven new species from central Australia are described in the third chapter. After a careful study of the chapter and acknowledging that in *Eucalyptus* I favour a broad species concept, I am skeptical about the distinctness of some of the species described. Compare, for example, figure 14, a specimen of *E. australis*, and figure 16, the holotype of *E. connerensis*. Compare also the shapes and sizes of their fruits (Figure 13) and their seedlings (Figure 17). Bear in mind that both occur on the top of Mt Conner. One would expect that the Latin descriptions or diagnoses of two species apparently so close would help in finding characters to separate them. The Latin associated with all the new species is grammatical, but remarkably uninformative. It seems to have been included only to satisfy the requirements for valid publication in the International Code of Botanical Nomenclature. Some (e.g. *E. coniophloia*) barely do that. Most descriptions are not diagnostic and many tell little beyond characters of the habit and bark. In the Latin the terminal adult leaves of *E. australis* are described as 'comparate longis' and the pedicels 'comparate gracilis'. Compared with what? Relativity is treated quite carelessly. The initial adult leaves of *E. symonii* are on 'short petioles (1.7 cm)' while those of *E. connerensis* are on 'relatively long petioles (c. 1.8 cm)'! Unexpected difficulties crop up when

the long English descriptions are used to compare species. The fruits of *E. australis* are described in detail but no measurements are given for those of *E. connerensis* despite the fact that 'fruits of Symon 9378 (15 June) are mature' and fruits are figured. Pedicels of *E. lenziana* are 'relatively short (1.7-)2.3(-2.8) cm and stout (0.2-)0.3(-0.8) cm' though figure 18, isotype of *E. lenziana*, suggests otherwise. Examples such as these of closely related species pairs (e.g. *E. opaca* and *E. orientalis*) or even groups of species (e.g. *E. eremaea*, *E. fordeana* and *E. nelsonii*) could be extended.

The remaining nine new species from northern Australia are described in the fourth and last chapter. Again differences between some species seem slight and comparison is difficult because descriptions are not presented uniformly. The work is rounded off with the bibliography, list of illustrations, an accurate index and the messy addenda.

Despite the fine introductory chapter the book is disappointing. Some of the irritating inconsistencies and omissions could have been rectified if the manuscript had been read critically before publication. But some of the shortcomings are more serious. Eucalyptus 1 does not provide a guide to the identification of the new species for the use of field botanists as promised, mainly because the identity of each new species is not firmly established. I have doubts about the usefulness of phytoglyphs in identifying species. Let us have some data on the degree of difference within and between species and possible ontogenetic sequences within species. Some adult leaves of *E. dichromophloia* show phytoglyphic patterns which may be considered juvenile. Could they not be part of an ontogenetical sequence with other adult leaves showing different, less juvenile patterns which at present, are being interpreted as those of another species? Whether or not the Carrs' narrow concept of species is accepted immediately or ultimately, they need to press on with Eucalyptus 2, 3, ... Many more species have to be described before botanists can afford not to use form species, such as *E. polycarpa* sens. lat. and *E. terminalis* sens. lat., no matter how deplorable that may be.

L. Pedley



This book plate accompanied W. H. Camp and C. L. Gilly's "The Structure and Origin of Species" (Brittonia vol. 4, 1943)

NATIONAL CONCERN ON SCIENCE AND TECHNOLOGY

A national meeting of concern on science and technology was held in Canberra on 16th April in response to recent cuts in Federal funding for science and the apparent declining support for science among politicians and the general public. It was organized by the National Committee for the Promotion of Science and Technology and an adhoc group of Scientific societies, and was sponsored by the Academy of Science. The aim of the meeting was to explore the possibility of establishing permanent secretariats to facilitate communication between scientists and technologists on the one hand and government, industrial management and the public on the other. Dr Bryan Barlow attended this meeting as President of the Australian Systematic Botany Society.

The press release issued by the Australian Academy of Science after this meeting on 16th April was as follows.

The first-ever meeting of office-bearers of 67 scientific and technological societies of Australia determined today to join forces in a program of action in support of research and development. The move follows the general recognition among many scientists and technologists that there is an urgent need to organise themselves on a national basis for communicating with governments and the public.

The National Meeting of Concern on Science and Technology, representing over 101,000 members of societies, was held under the auspices of the Australian Academy of Science in Canberra. It was chaired by Professor Max Bennett, who is Chairman of the Academy's 21 member National Committee for the Promotion of Science and Technology and is Director of the Neurobiology Research Centre, University of Sydney.

The meeting noted the need for concerted action by the scientific and technological community to:

a. facilitate discussions within the scientific and technological community concerning matters of common interest;

b. enhance communication between the scientific and technological community and governments;

c. ensure understanding among the Australian public of the work done within the scientific and technological community of the nation.

The meeting affirmed:

1. its belief in the importance to the community of maintaining the quality of Australian science and technology, and its wish to see their full potential for the national benefit realised;

2. its support for progressive and balanced expansion, in real terms, of the nation's effort in basic research, applied research and experimental development.

The meeting elected an Interim Committee for forming the first body to provide an organised focus and continuity for all of Australia's scientists and technologists - a Federation of Australian Scientific and Technological Societies (FASTS). The Chairman of the 12-member Interim Federation Committee is Professor Fred Smith, physicist, of Monash University.

Proposals were put to the meeting for secretariats which would facilitate communication between scientists and technologists, on the one hand, and governments, industrial management and the public on the other.

The Interim Federation Committee will investigate the procedures and costs for these proposals and will seek funds from societies and other sources to finance its activities.

While the Committee has been charged with establishing the Federation within six months, the meeting recognised that the achievement of its broad goals would take some years.

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A second National Meeting of Concern on Science and Technology will be held in Canberra in November. It is hoped all societies will be represented and that the representatives will be able to make a decision about their society joining the Federation at that time.

JOHN WOMERSLEY (1920 - 1985)

John Womersley, ex-Director of Botany at Lae, died in Adelaide on 4th September 1985 after a long illness. In his retirement John had been active in organising volunteers at AD.

PAT BRENAN (1917-1985)

Professor J.P.M. (Pat) Brenan, Director of the Royal Botanic Gardens, Kew, from 1976 to 1981, died in hospital in London on 26 September. A learned and affable man, he will be remembered with affection by botanists throughout the world.

The Society

The Australian Systematic Botany Society is an association of over 300 people with professional or amateur interest in Botany. The aim of the Society is to promote the study of plant systematics.

Membership

Membership is open to all those interested in plant systematics and entitles the member to attend general and chapter meetings and to receive the Newsletter. Any person may become a member by forwarding the annual subscription to the Treasurer. Subscriptions become due on the 1st January.

The Newsletter

The Newsletter appears quarterly and keeps members informed of Society events and news, and provides a vehicle for debate and discussion. In addition original articles, notes and letters (not exceeding ten pages in length) will be published. Contributions should be sent to the Editor at the address given below, preferably typed in duplicate and double-spaced. All items incorporated in the Newsletter will be duly acknowledged. Authors are alone responsible for the views expressed. The deadline for contributions is the last day of February, May, August and November.

Notes

(1) The deadline for the next Newsletter is 30th November.

(2) ASBS Annual Membership is $13 (Aust.) if paid by 31st March, $15 thereafter. Students (full-time) $10. Please remit to the Treasurer.

(3) Advertising space is available for products or services of interest to ASBS members. Current rates are $30 per full page, $15 per half page. Contact the Newsletter Editor for further information.

Mailing List

All address changes should be sent to the Treasurer or the Editor.

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