

TAXONOMIC PUBLICATION COMMITTEE - ASBS

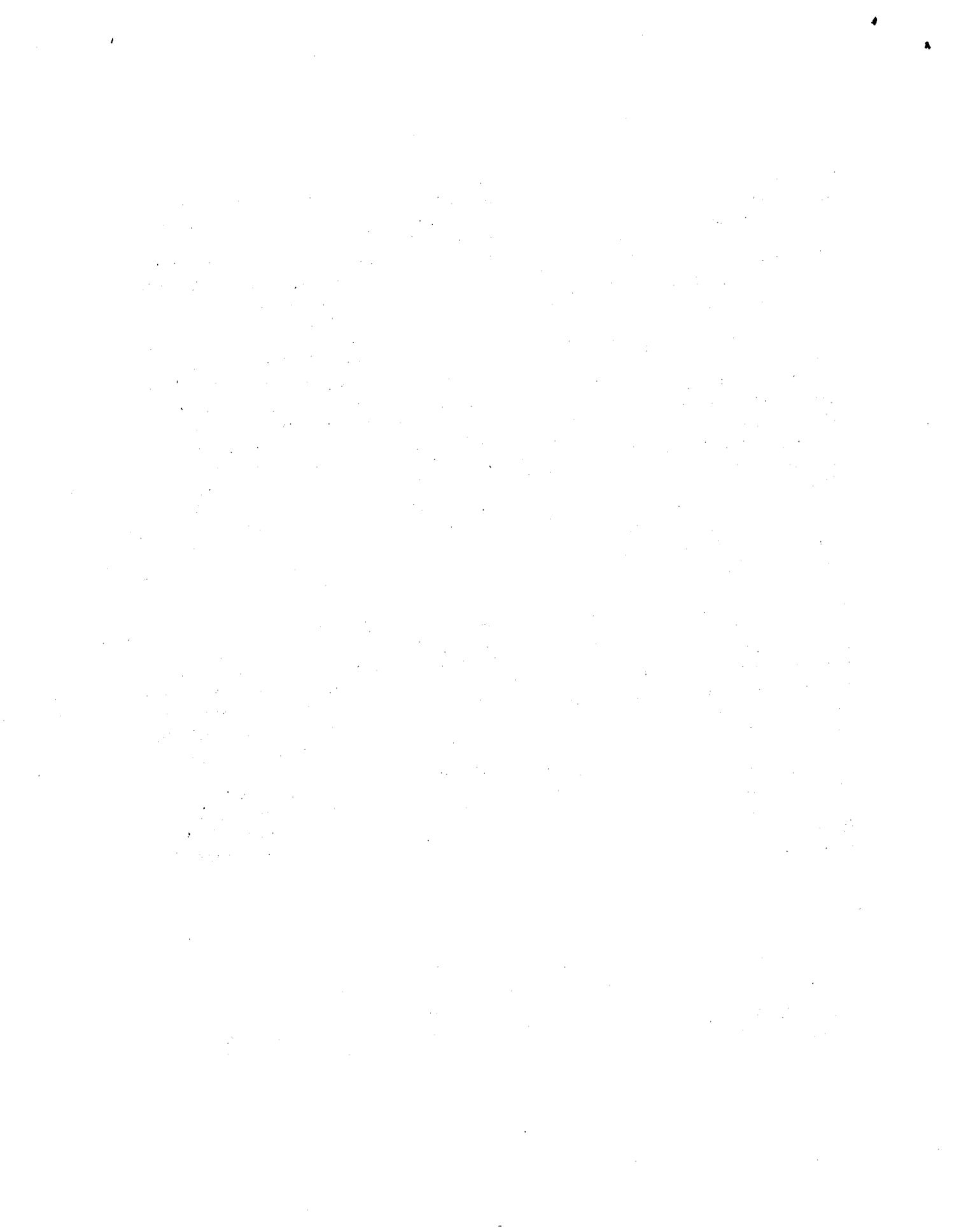
The Committee of five members* was established after a meeting of the ASBS held during the 1973 ANZAAS Congress in Perth. It was asked to prepare sample formats of taxonomic papers which could be used as a guide for those botanists newly entering the field of plant taxonomy. The Committee deviated in the nature of its report from that requested, and instead of preparing sample formats attempted to indicate the points that should be considered when writing a taxonomic paper.

In preparing its report the Committee took notice of similar articles prepared for the guidance of taxonomists, and also of instructions to authors published by several Australian and overseas journals. The aim of the Committee was to help botanists to write taxonomic papers in a clear format, which contained the material expected in such a paper, and which complied with the International Code of Botanical Nomenclature. It had no desire to stifle variety of presentation although it expected authors to realise that a paper is more readily comprehended if it adheres largely to accepted practice and that modern methods of presentation have evolved through efforts to provide basic information in as precise a manner as is compatible with ready comprehension.

The Committee was not able to gather together as a body but the Chairman did meet with all but one of its members and was able to discuss the preliminary drafts at length with Dr. HJ. Eichler. The original draft, prepared by the Chairman, was circulated to the Committee and from the replies received a subsequent and then a final draft was constructed. Probably no one member accepted all the recommendations made, but these were felt to represent a reasonable consensus of the opinions expressed.

Through the presence of Dr. Eichler it was possible to attempt correspondence between the recommendations of the Committee and the requirements laid down by the Board of Standards of the Australian Journals of Science, as well as of the Advisory Panel of the journal *Brunonia*.

* Dr. B. Briggs, Royal Botanic Gardens, Sydney
Dr. HJ. Eichler, Herbarium Australiense, Canberra
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Mr. P. Wilson (Chairman), Western Australian Herbarium, Perth



PREPARATION OF BOTANICAL TAXONOMIC PAPERS

Many forms of presentation of taxonomic papers are acceptable and authors should not feel obliged to follow any one system. It is important, however, that the facts are clearly presented and in a manner which is consistent and readily comprehended by taxonomists. It is also important that the articles in the International Code of Botanical Nomenclature (ICBN) are rigidly adhered to.

COVERAGE

Normally a taxonomic paper should cover a clearly circumscribable group, e.g. a family, tribe, genus or section. The description of odd species seldom does much to further scientific knowledge and the bibliographic work needed to keep track of the occasional new name is often out of proportion to the benefit obtained by their publication.

The description of odd new species, or the publication of occasional notes on already described species, can, for example, be justified if they supplement a modern taxonomic revision, if they are published as a preliminary paper to a forthcoming 'Flora', or if the species described occur in an area which has a comprehensive and reliable 'Flora'. When species are described in isolation the author should indicate how they differ from related taxa and should preferably provide a key to distinguish the species involved.

Authors should bear in mind that a taxonomic paper, in order to be of value, does not have to include cytological, palynological, or anatomical data, nor is it necessary to include a long dissertation on possible phylogenetic relationships, although such data can be proper for a comprehensive monographic study. Sound advances in the knowledge of the diversity and affinities of Australian plants can be made by revisional studies based on detailed morphological comparisons and supplemented by field observations.

TITLES

The title of a paper should be informative and when concerned with one or two genera, their names, with the family name, should be included. It must be remembered that since some bibliographical journals list only the titles of papers, these should be clear and unambiguous.

ABSTRACT

The Abstract or Summary is the only portion of a paper read by the majority of people who receive scientific journals; it is also often the only portion read by those who rely on the abstracting periodicals for information. The Abstract of taxonomic papers should therefore

indicate the systematic and geographical coverage, and the number of new names with their various ranks included in the text. New names should be individually cited unless their inclusion would make the abstract inordinately long.

KEYS

The value of a key is dependent on the speed and accuracy with which it enables a worker to identify a plant. The key need not reflect the author's opinion on the phylogenetic relationships within a group and if an attempt to express this conflicts with ease of determination then it should be abandoned. In this regard characters which are readily appreciated should be used in preference to those which are of fundamental importance but yet are difficult to distinguish.

The three main types of keys are (1) analytical indented (2) analytical bracketed (3) synoptic. The first is widely used and well known, but especially when long may become unwieldy. It should always be strictly dichotomous. The second is more efficient in the use of space but does not give such ready visual separation of groups. The third has not been widely used but is particularly good where individual herbarium specimens are likely to be incomplete. This type of key can make use of all information on a specimen without having to guess at missing data that may prevent progress through an analytical key. In addition to a key, it may sometimes be useful to have a conspectus in which are shown the characters determining the classification. Examples of these three types of keys are given below. A discussion on them will be found in Leenhouts (1966).

Analytical Indented

- | | |
|-------------------------------------------------------|---------------------------|
| 1. Flowers axillary. | |
| 2. Leaves terete; flowers erect | 1. <i>E. linearis</i> |
| 2. Leaves oblong; flowers erect or pendulous. | |
| 3. Flowers pendulous, corolla red | 2. <i>E. coccineus</i> |
| 3. Flowers erect, corolla white | 3. <i>E. pachyphyllus</i> |
| 1. Flowers terminal. | |
| 4. Leaves with a pair of black stipular excrescences. | |
| 5. Petals pubescent outside | 4. <i>E. ericifolius</i> |
| 5. Petals glabrous outside | 5. <i>E. gardneri</i> |
| 4. Leaves with no stipular excrescences | 6. <i>E. tomentellus</i> |

Analytical Bracketed

1a) Flowers axillary		2
b) Flowers terminal		4
2a) Leaves terete; flowers erect	1.	<i>E. linearis</i>
b) Leaves oblong; flowers erect or pendulous		3
3a) Flowers pendulous, corolla red	2.	<i>E. coccineus</i>
b) Flowers erect, corolla white	3.	<i>E. pachyphyllus</i>
4a) Leaves with a pair of black stipular excrescences		5
b) Leaves with no stipular excrescences	6.	<i>E. tomentellus</i>
5a) Petals pubescent outside	4.	<i>E. ericifolius</i>
b) Petals glabrous outside	5.	<i>E. gardneri</i>

Synoptic Key

1. Hairs on leaves
 - a) Stellate 3, 4, 5
 - b) Lepidote 5, 7, 8
 - c) Simple 1, 2
 - d) Absent 9, 10
2. Arrangement of Leaves
 - a) Opposite 1, 3, 5, 6, 7
 - b) Scattered 2, 4, 8, 9, 10
3. Aestivation of Petals
 - a) Valvate 1, 2, 3, 5
 - b) Imbricate 4, 6, 7, 8, 9 10
4. Seed
 - a) With aril 1, (2), 4, 5, 6, (7)
 - b) Without aril (2), 3, (7), 8, 9, 10

Where a character is variable it is here italicised, and where unknown it is placed within brackets.

In the above example a vegetative specimen belonging to this group and possessing scattered leaves with stellate indumentum, could only be number 4. A fruiting specimen having arillate seeds, opposite leaves and simple hairs, could only be number 1.

In lengthy dichotomous, indented keys it is helpful initially to break down the taxa into groups. Care must be exercised to ensure that the characters used in one alternative are also used in the other or the key becomes unworkable.

With dioecious groups it is often preferable to have separate keys to the male and female plants, and in some cases it can be helpful to have a separate key to vegetative material.

When species exhibit considerable variability, or are difficult to distinguish from related ones, consideration should be given to having multiple entries rather than providing a long list of character combinations.

DESCRIPTIONS

New taxa should be described in full in English. The accompanying Latin text can be in the form of an abbreviated description or of a diagnosis in which the essential distinguishing characters are given. The type should be cited immediately after the Latin description (and indicated as such) and not merely included in the general list of specimens seen.

Descriptions of new taxa should be based on the full range of material included by the author within that taxon and not based solely on the type. They should be readily comprehensible and for this purpose it is preferable to generalize rather than attempt to contain all the variation observed. Some authors also give a Latin description based exclusively on the holotype (*descriptio holotypi*), and there is merit in this practice.

The sequence of characters, and terminology, should be in accordance with established phytographical practice, it should be uniform within the one paper and preferably uniform with other papers by the same author which deal with the same plant group; this will permit ready comparison between species. Where a character is unknown for any one species this should be indicated.

When publishing new names it is recommended that the author's surname (with initials if necessary) be given in full, followed by a comma and sp.nov., comb.nov., or nom.nov. etc. This ensures that the author of any new name will be apparent even if only selected pages of a publication are available. For example:

Eremophila obovata L.S. Smith, sp.nov.

Cortaderia jubata (Lem.) Stapf, comb.nov.

DISTRIBUTION

The distribution of a species should be given in general terms in the text, this may be supported by a map in which collection localities are indicated by symbols.

SPECIMEN CITATION

The statement on distribution should be documented by the citation of specimens. This indicates to the reader the basis on which the author's taxonomic judgements have been made.

Specimens examined are best listed under states (or under smaller defined areas) in alphabetical order of collectors' names. The citation of specimens should be unambiguous and should include the collector's number (or the sheet number where no collector's number is available).

Suitable forms of citation are as follows:

"15km S of Bourke; 2 Oct. 1972, K.R. Jones 1745 (NSW);"

or

"K.R. Jones 1745: 15km S of Bourke; 2.ix. 1972 (NSW)."

In both forms the date is clearly distinguished from the collector's number.

Often only a selection of material can be referred to in the text and can then be indicated as "Selection Only". It may be supplemented by an appendix in which all collections studied are listed. This 'Index to Collections' can be in the form of collector and number followed by species number. An example may be found in Hartley, J. *Arnold Abor.* 47:171-221 (1966).

The abbreviations used in the citation of institutions should be those adopted by the International Bureau for Plant Taxonomy and Nomenclature and published in *Index Herbariorum Part 1, The Herbaria of the World* (6th ed. 1974).

SYNONYMY

Synonyms are commonly all listed chronologically. It is, however, preferable to list the taxonomic synonyms chronologically and under each the relevant nomenclatural synonyms (also chronologically).

Misapplied names should be clearly distinguished from taxonomic or nomenclatural synonyms and should be cited last, preferably in square brackets. The following is an example of a citation (partly fictitious) which includes these various kinds of synonyms:

Acacia pulchella var. *glaberrima* Meisn. in Lehm., *Plant. Preiss.* 1:22 (1844).
Lectotype: Preiss 884 (iso : K-photograph seen, MEL, PERTH).

A. hispidissima DC., *Prod.* 2:455 (1825). Type: "in Nova-Hollandia orient." (holo: G-DC - photograph seen).

A. pulchella var. *hispidissima* (DC.) Meisn. in Lehm., Plant. Preiss. 1:22 (1844) - as to name only.

A. lanata Hort. ex K. Koch, Allg. Gartenzeitung 26:197 (1858) pro syn., nom. inval.

A. denudata Lehm. ex Meisn. in Lehm., Plant. Preiss. 1:21 (1844).
Syntypes: Preiss 893, Drummond 312 (both iso: MEL).

A. pulchella var. *denudata* (Meisn.) Pritzel, Bot. Jahrb. Syst. 35:310 (1904).

A. erioclada Hort. ex K. Koch, Allgem. Gartenzeitung 26:197 (1858) pro syn., nom. inval.

A. denudata var. *gracilis* Meisn. in Lehm., Plant. Preiss. 1:21 (1844).
Type: Preiss 904 (n.v.)

A. denudata var. *spinosissima* Meisn. in Lehm., Plant. Preiss. 1:22 (1844).
Type: "Colitur in Horto Baumanniana Mulhusiae Alsatorum" (n.v).

A. pulchella var. *denudata* subvar. *spinosissima* (Meisn.) Pritzel, Bot. Jahrb. Syst. 35:310 (1904).

A. grandis Hort. ex Henfrey, Gard. Mag. Bot. 3:3177 (1851), e desc.
Type: Based on cultivated material, n.v.

[*A. hybrida* auct. non I. Smith (1870): J. Sen., Textb. Econ. Bot. 17 (1893); R. Ledb., Wattles of the World 23 (1920).]

Where a name is illegitimate, this should be clearly indicated with reasons given for its rejection. The following are examples of suitable format:

1. *Phebalium squameum* (Labill.) Engler (1896)
Eriostemon squameus Labill. (1806)
P. billardieri A. Juss. (1825) nom. illeg., based on *E. squameus*.
2. *Bassia enchylaenoides* F. Muell., Syst. Census Fl. Pl. 1:30 (1882) non *B. villosa* Wallich ex G. Don (1837).
Enchylaena villosa F. Muell., Trans. Philos. Inst. Victoria 2:76 (1858).
3. *Calandrinia polyandra* Benth., Fl. Austral. 1:172 (1863).
Talinum polyandrum Hook., Bot. Mag. t. 4833 (1855) nom. illeg. non Ruiz et Pav. (1798).

Citation of volume, page, and date is common; given in the form used above. Another method, which is both clear and concise, is as volume (date) page, e.g.

Lawrenzia densiflora (Benth.) Melville, Kew Bull. 20 (1967) 514

TYPES

When describing a new taxon the type and its place of lodgement must be indicated. For Australian plants it is desirable that the holotype, at least, should be lodged in a government institution (preferably one with statutory protection) and generally not in a private or university collection.

Where, for an already described taxon, a lectotype is cited, the author should clearly indicate whether it is here designated for the first time or whether it has been chosen in a previous publication. In the latter case a reference should be made to the place of its lectotypification.

It is the normal practice to designate as a holotype all the material on one sheet whether it contains one or several portions of a plant (or in the case of small herbs, one or several individual plants). Botanists may, however, wish to designate a single specimen as holotype, or, in the case of a lectotypification, as lectotype. This ensures that in future there will be no confusion as to the taxon represented by a particular name. Instructions on the selection of lectotypes will be found in the International Code of Botanical Nomenclature.

CITATION OF AUTHORS' NAMES

Authors' names should be in full, or abbreviated according to the suggestions provided in the International Code of Botanical Nomenclature, or according to custom. A list of the commonly used abbreviations is given in Gould & Noyce (1965), while an index to the abbreviations used in the preparation of the Index Kewensis is shortly to be published by the Royal Botanic Gardens, Kew. This, when available, is likely to be treated as an authoritative work.

The author's name when preceding a literature citation should, even if abbreviated, be followed by a comma so as to clearly distinguish the author from the title, e.g.

Hemigenia drummondii Benth., Fl. Austral. 5:119 (1870).

Where one author is publishing his own paper in another person's work the term 'in' should be used:-

Gompholobium ecostatum Kuchel in Eichler, Suppl. Black's Fl. S. Austral. 182 (1965).

This when abbreviated is cited as "*G. ecostatum* Kuchel".

When the publishing author is adopting the manuscript name of another person the term 'ex' is used:-

Kochia lobiflora F. Mueller ex Bentham, Fl. Austral. 5:184 (1870). This when abbreviated becomes "*K. lobiflora* Benth.", the author of the manuscript name being omitted.

The custom of using the term 'in' after authors who published in journals is confusing and not recommended.

CITATION OF JOURNALS OR BOOKS

The title of journals should be abbreviated according to one of the standard bibliographies. Taxonomic botanists may prefer to use the 'B-P-H Guide' (1968) since it is the most comprehensive work on past and present botanical periodicals. Should, however, a periodical prescribe another bibliography, this direction must be adhered to.

Books should be abbreviated in such a form as to be readily comprehensible to other workers. The classical abbreviations which were used by authors of the last century should not be followed unless they are clearly unambiguous. A list of suggested word abbreviations can be found in the 'B-P-H Guide'.

Some of the journals published by W.J. Hooker have frequently been abbreviated in a manner which is confusing even to experienced botanists. In order of commencing publication they are as follows:

Botanical Miscellany vols 1-3 (1829-1833)

Frequently abbreviated: "Hook. Bot. Misc." B-P-H: Bot. Misc.

The Journal of Botany vols 1-4 (1834-1842)

"Hook. Journ. Bot." B-P-H: J. Bot. (Hooker)

Companion to the Botanical Magazine vols 1-2 (1835-1837)

"Hook. Comp. Bot. Mag." B-P-H: Companion Bot. Mag.

The London Journal of Botany vols 1-7 (1841-1848)

"Hook. Lond. Journ. Bot." B-P-H: London J. Bot.

Hooker's Journal of Botany and Kew Garden Miscellany vols 1-9 (1849-1857)

"Hook. Kew Journ." B-P-H: Hooker's J. Bot. Kew Gard. Misc.

DATES OF PUBLICATIONS

It is important for purposes of nomenclature that the date of publication of a book or periodical is accurately cited. A useful reference work for this purpose is Stafleu, Taxonomic Literature (1967). Notes on publication dates will be found in Flora Malesiana by Mrs. M.J. van Steenis-Kruseman and in the Flora Malesiana Bulletin. Bibliographical notes of particular relevance to Australian workers will be found as follows:-

J. Proc. Mueller Botanic Society Western Australia - See E.M. Watson, J. Roy. Soc. Western Australia 29:174 (1945).

J. Western Australian Nat. Hist. Soc. - See E.M. Watson, l.c.

J. Nat. Hist. Sci. Soc. Western Australia - See E.M. Watson, l.c.

J. Roy. Soc. Western Australia - See E.M. Watson, l.c.

Proc. Linn. Soc. New South Wales - See J.J. Fletcher, op. cit. 10 n.s.:533-536 (1896).

Pap. & Proc. Roy. Soc. Tasmania - See F. Noetling, op. cit. 1910:223-230 (1911).

Chemist and Druggist (Melbourne) - For notes on this and publications with similar titles see Van Steenis, Fl. Males. Bull. 1/7:193-194 (1950).

Southern Science Record, Melbourne - See Van Steenis, Fl. Males. Bull. 1/7:195 (1950), and F.G.A. Barnard, Vict. Nat. 16:112-113 (1899).

K. Domin, Beitrage zur Flora and Pflanzengeographie Australiens. Biblioth. Bot. 85 and 89. - See D.J. McGillivray, Contr. New South Wales Natl. Herb. 4:366-368 (1973).

INDEX

Taxonomic papers in which numerous taxa are mentioned should be provided with a complete index to plant names. In this the accepted names should be clearly distinguished from the synonyms by using roman type and italics, and new names by the use of bold type.

Numerous books have been published on the practice of plant taxonomy. Here one can only mention some that will be found valuable when considering the presentation of data rather than the processes adopted by the taxonomist in arriving at the data.

BOTANICAL NOMENCLATURE

Stafleu, F.A., et al. (ed), International Code of Botanical Nomenclature, ed. 11 (1972). (Regnum Vegetabile 82).

A work indispensable to plant taxonomists and one with which they should endeavour to become thoroughly familiar.

McVaugh, R., R. Ross, & F.A. Stafleu, An annotated glossary of botanical nomenclature. (1968). (Regnum Vegetabile 56).

A glossary of words used in botanical nomenclature; principally of those which occur in the 'International Code'.

TAXONOMIC PRACTICE

Leenhouts, P.W., A guide to the practice of herbarium taxonomy. (1968). (Regnum Vegetabile 58).

This booklet includes suggestions on the presentation of information and contains a useful bibliography.

Leenhouts, P.W., Keys in Biology. A survey and a proposal of a new kind. Proceedings, Koninklijke Nederlandse Akademie van Wetenschappen, Series C, 69:571-596 (1966).

NAMES OF AUTHORS

Gould & D.C. Noyce, Authors of plant genera. International Plant Index, 2. (1965).

This work lists authors, and the various abbreviations of their names which are found in taxonomic papers. A book of author abbreviations is to be published by the Royal Botanic Gardens, Kew; when this appears it will, no doubt, become the standard work.

BIBLIOGRAPHIES

Lawrence, G.H., et al., B-P-H, Botanico-Periodicum-Huntianum. (1968).

A comprehensive list of botanical journals and the abbreviations under which they have been cited in the major reference works.

Pritzel, G.A., Thesaurus Literaturae Botanicae. Ed. 2. (1872).

A valuable guide to the older botanical literature.

Jackson, B.D., Guide to the literature of botany; being a classified selection of botanical works, including nearly 6000 titles not given in Pritzel's Thesaurus. (1881).

Stafleu, F.A., Taxonomic literature. A selective guide to botanical publications with dates, commentaries and types. (1967). (Regnum Vegetabile 52).

Burbidge, N.T., Select list of publications in systematic botany available in Australia. C.S.I.R.O. Div. Plant Industry Report No.14 (1951).

A very useful guide; a new edition is in preparation.

Eichler, H.J., A short bibliography. Chapter 3 of Supplement to J.M. Black's Flora of South Australia. (1965).

A bibliography having particular reference to Australian plant taxonomy.

Anon. (Biosis), Bibliographic guide for editors and authors. Columbus, Ohio. Chemical Abstracts Service. Bibliographic Support Division. (1974).

The 'Notice to Authors' in the Australian Journals of Scientific Research prescribes that abbreviations of titles of periodicals should conform to those used in the above 'List of Serials'.

BOTANICAL LATIN

Stearn, W.T., Botanical Latin. Ed. 2. (1973).

A book of great value to both the novice and the experienced taxonomist; it has become almost indispensable.

Woods, R.S., ~~An English-Classical dictionary for the use of taxonomists.~~
Pomana College. (1966).

HERBARIA

Holmgren, P.K., & W. Keuken, Index Herbariorum, Part 1, The Herbaria
of the world. Ed. 6. (1974). (Regnum Vegetabile 92).

A list of herbaria including brief details of their size, specialization
and staff. Of special importance because of the inclusion of the
official abbreviations by which the institutions are universally cited.

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NOTE: Members are invited to suggest changes to these
guidelines; all such suggestions should be sent to
the Chairman of the Committee, Mr. Paul Wilson, at the
West Australian Herbarium, by FRIDAY 29th October 1976.
The Committee will consider all suggestions and amend
the guidelines if it considers this necessary.

R.C. Carolin & K.L. Wilson

