

## APPENDIX

### RULES FOR ABBREVIATING BOTANICAL TITLES AND THE NAMES OF AUTHORS

The following rules and principles governing the abbreviation of botanical titles and the names of authors are used in preparing manuscript for the Contributions from the National Herbarium.

The following (paragraphs numbered 1 to 5) are taken from the "Rules for the abbreviation of titles of scientific periodicals in publications of the Smithsonian Institution and its branches."

1. In abbreviating words in titles, stop before the 2d vowel, unless the resulting abbreviation would contain but one consonant, in which case stop before the 3d vowel.

*Examples:*

Abhandlung	=	Abh.
Academy	=	Acad.
Bericht	=	Ber.

#### EXPLANATIONS AND EXCEPTIONS

A. The following words have irregular abbreviations to avoid confusion with other words having the same beginning, but different termination, or for other reasons:

Analytical	=	Analyt.
Architecture (or -al)	=	Archit.
Astrophysics (or -ical)	=	Astrophys.
Bibliography (or -ical)	=	Bibliogr.
College (not abbreviated).		
Columbian	=	Columb.
Ethnography (or -ical)	=	Ethnogr.
Experimental	=	Exper.
Herausgegeben	=	Hrsg.
Industrial	=	Indust.

Manufactures (or -ing)	= Mfr.
Mining	= Mg.
Monthly	= Mo.
Monograph	= Monogr.
Philosophy (or -ical)	= Philos.
Physiology (or -ical)	= Physiol.
Public (or publication)	= Pub.
Repertorium	= Repert.
Repository	= Repos.
Science (or scientific)	= Sci.
Sociology	= Sociol.
Statistics (or -ical)	= Statist.
Telephone (or -ic)	= Teleph.

*B.* The following abbreviations in common use, also the ordinary post-office abbreviations for States of the United States, are allowable: R. R. (railroad); C. R. (comptes rendus); k. k. (kaiserlich und königlich), U. S. (United States); N. S. W. (New South Wales); Lond. (London); Par. (Paris); Ber. (Berlin); St. Petersb. (St. Petersburg); Phila. (Philadelphia), etc.

*C.* Compound German, Norwegian and Swedish words may be abbreviated (*a*) by adding to the first component the consonant or consonants immediately following, or (*b*) by abbreviating each component according to rule 1 and connecting them by hyphens.

*Examples:*

Monatsbericht	= Monatsb. or Mon.-Ber.
Naturvidenskabeligt	= Naturv. or Nat.-Vid.
Landhushållning	= Landh. or Land-Hush.

*D.* Numerals occurring in titles should be treated thus:

Fiftieth	= 50th.
Fifteenth	= 15th.
Deuxième	= 2me.
Vierte	= 4te, etc.

2. All articles, prepositions and conjunctions are to be omitted, except *and* and *for*, which may be retained when necessary for clearness.



*Examples:*

Bollettino dei Musei di Zoölogia ed Anatomia Comparata. — Boll. Mus. Zoöl. ed. Anat. Comp.

Proceedings of the Academy of Natural Sciences of Philadelphia. — Proc. Acad. Nat. Sci. Phila.

Mémoires pour servir à l'Histoire Physique et Naturelle de la Suisse. — Mém. Hist. Phys. et Nat. Suisse.

3. In abbreviated titles, the words should follow strictly the order of the full titles.

*Examples:*

Proceedings of the Biological Society of Washington. Proc. Biol. Soc. Washington; *Not* Washington Biol. Soc. Proc.

Annales de la Société Entomologique de Paris. — Ann. Soc. Ent. Paris; *Not* Paris Ann. Soc. Ent.

4. (a) Words of one syllable, (b) titles consisting of a single word, (c) names of towns (except as indicated under rule *B*), (d) names of persons (when unmodified), and (e) names of geological formations, are not to be abbreviated.

5. Whenever necessary for clearness, any of the foregoing rules may be disregarded, but in such cases words should not be abbreviated.

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GENERAL PRINCIPLES TO BE OBSERVED IN ABBREVIATING BOTANICAL TITLES OR THE NAMES OF AUTHORS. THESE ARE IN ADDITION TO THE RULES QUOTED ABOVE

## ABBREVIATIONS OF TITLES

1. Abbreviations to be chosen from the title, and to be in the order in which the words occur in the title.

Civ. Nat. Hist. Jam. The civil and natural history of Jamaica.

2. Additional words not in title are to be placed in parenthesis.

Denkschr. Akad. Wiss. Math.-Naturw. (Wien). Denkschriften der kaiserlichen Akademie der Wissenschaften, mathematisch-naturwissenschaftliche Klasse. Wien.

3. In abbreviating words in titles other than those of periodicals, rule 1 of Smithsonian Rules is usually followed, but to avoid ambiguity, the abbreviation may extend to the vowel of the 3d syllable.

Monogr.

4. Many common words are specially abbreviated.

Pl. = Plant. N. S. E. W. = North, etc.

Fl. = Flora. Dept. = Department.

Sp. = Species.

5. Diacritical marks are to be preserved when they occur in the part of the word retained in the abbreviation.

Mém. = Mémoire. Rév. = Révue.

Franç. = Française. Zuñi

6. The word "and" or "et" (Latin), when retained, is represented by the sign &, in titles or joining the names of authors. The "and" may be retained or not when it occurs between retained words.

Nov. Gen. & Sp. Bot. S. C. & Ga. [and]

Fl. Peru. Chil. [et].

7. Words may be abbreviated before the last vowel, though it saves no space.

Graec. (Graeca), Neu. (Neue).

8. The abbreviations of titles of periodicals must be full enough to distinguish between different series.

Ann. Sci. Nat. II. Bot. to distinguish from other series.

Journ. Linn. Soc. Bot.

Trans. Linn. Soc. Bot.

9. Certain words are not abbreviated.

Grasses, Club.

10. Certain abbreviations have been approved as follows:  
Agrost., Encycl., Icon., Monogr., Phytogr., Pugill.

11. In choosing words for abbreviation, especially in long titles, it is well to retain (a) the first significant word,



(b) words which indicate the systematic group treated, or the geographical area concerned.

12. The abbreviations of Government publications should include U. S.

U. S. Dept. Agr. Div. Agrost. Bull.

U. S. Rep. Expl. Miss. Pacif.

Contr. U. S. Nat. Herb.

Proc. U. S. Nat. Mus.

13. The names of editors may be placed in the possessive when this has been sanctioned by long usage.

Curtis's Bot. Mag.

Edwards's Bot. Reg.

Rees's Cycl.

14. Such abbreviations as Trans., Bull., Rep., may be placed out of their sequence in the title.

Rep. Mo. Bot. Gard. (Mo. Bot. Gard. Ann. Rep.).

15. Bulletins of State Agr. Exp. Sta. to be similar to this:

N. C. Agr. Exp. Sta. Bull., *not* Bull. N. C. Agr. Exp. Sta.

#### ABBREVIATIONS OF NAMES OF AUTHORS

1. Words of one syllable are not abbreviated.

2. Words of more than one syllable, when abbreviated, should go to the vowel of the second syllable.

3. The following names of authors are specially abbreviated: Linnaeus (L.), A. P. De Candolle (DC.), Britton, Sterns & Poggenberg (B.S.P.), Humboldt, Bonpland & Kunth (H.B.K.), Michaux (Michx.), Robert Brown (R. Br.).

4. To distinguish different authors of the same name, initials may be used; or in case of father and son, the name of the latter, or its abbreviation, may be followed by f. (filius).

5. Names that, to avoid confusion, are not abbreviated when standing alone, may be abbreviated when combined with another. Britton, Britt. & Rose.

## MISCELLANEOUS EXAMPLES OF BIBLIOGRAPHIC CITATIONS

Method of citing volume, page and year:

12 : 224. 1909.

12 : 224, 225. 1909.

12 : 224-237. 1909.

12 : 224. *pl. 3.* 1909.

12 : 224. *pl. 3. f. 1.* 1909.

Mart. Fl. Bras. 2<sup>2</sup>: 188. 1877.

Doell in Mart. Fl. Bras. etc., when Doell is the responsible author.

Hochst.; Steud. Syn. Pl. Glum. etc., when Steudel adopts Hochstetter's name without description.

Method of citing synonymy:

Names cited as originally published: Examples, *Panicum dichotomum*  $\beta$  *glabrescens* Griseb.; *Panicum*, section *Lasiacis* Griseb.; *Cenchrus echinatus* var. *viridis* Spreng.

Doubtful synonyms indicated thus, ? *Panicum durum* Desv.

Name mentioned in synonymy, *Andropogon domingensis* Spreng.; Steud. Nom. Bot. ed. 2. 1 : 91. 1840, as synonym of *A. stipoides*.

Homonyms,

*Panicum gracilicaule* Nash in Small, Fl. Southeast. U. S. 98. 1903. Not *P. gracilicaule* Rendle, 1899.

*Agrostis pyramidalis* Lam. Tabl. Encycl. 1 : 161. 1791. Not *Sporobolus pyramidalis* Beauv. 1807.

New genera and species:

**Triniochloa** Hitchc., gen. nov.

**Triniochloa laxa** Hitchc., sp. nov.

### Type-basis Code of Botanical Nomenclature

At the Baltimore meeting of the Botanical Society of America (1918), the Committee on Generic Types presented a set of rules for fixing the types of genera. The report was published in SCIENCE (49: 333-336. 1919). At the same meeting the committee was enlarged to nine mem-



bers and made a standing committee on botanical nomenclature, with authority to prepare a code of nomenclature. The standing committee consists of LeRoy Abrams, N. L. Britton, E. A. Burt, A. W. Evans, J. M. Greenman, A. S. Hitchcock (chairman), M. A. Howe, F. W. Pennell and C. L. Shear.

The following code was presented by the committee but was not acted upon by the society.

### PRINCIPLES

1. The primary object of formal nomenclature in systematic biology is to secure stability, uniformity, and convenience in the designation of plants and animals.

2. Botanical nomenclature is treated as beginning with the general application of binomial names to plants (Linnaeus' "Species Plantarum," 1753).

3. Priority of publication is a fundamental principle of botanical nomenclature. Two groups of the same category can not bear the same name.

*Note a.* This principle applies primarily to genera and species.

*Note b.* Previous use of a name in zoölogy does not preclude its use in botany; but the proposal of such a name should be avoided.

4. The application of names is determined by means of nomenclatural types.

*Note.* A generic name is always so applied as to include its type species; a specific name is always so applied as to include its type specimen.

### RULES

#### *Section 1.* Publication of Names

*Article 1.* A specific name is published when it has been printed and distributed with a description, or with a reference to a previously published description.

*Note.* A recognizable figure may be the equivalent of a description in the literature of paleobotany and diatoms.

(a) In the transfer of a species from one genus to another, the original specific name is retained, unless the resulting binomial has been previously published.

*Recommendations:* Botanists will do well, in publishing:

1. In describing parasitic fungi to indicate the host and to designate the name of the host by its scientific Latin name.

2. To give the etymology of all new generic names.

*Article 2.* A generic name is published when it has been printed and distributed

(a) With a generic or specific description (or a recognizable figure, see Art. 1, note) and a binomial specific name,

(b) With a generic and specific name and the citation of a previously published description,

(c) With a definite reference to at least one previously published binomial.

*Note a.* A name is not published by its citation in synonymy, nor by incidental mention. Such a name may be taken up but not to replace one already properly published.

*Note b.* Of names published in the same work and at the same time, those having precedence of position are to be regarded as having priority.

*Recommendation:* Botanists will do well, in publishing, to give the etymology of specific names when their meaning is not obvious.

### *Section 2.* Application of Names

*Article 3.* The nomenclatural type of a species is the specimen or the most important of the specimens upon which its original published description was based.

(a) If only one specimen is cited, that is the type.

(b) If one specimen is designated as the type, that specimen shall be so accepted, unless an error can be demonstrated.

(c) A species transferred without change of name from one genus to another retains the original type even though the description under the new genus was drawn from a different species.

(d) The publication of a new specific name as an avowed substitute for an earlier one does not change the type of the species.

(e) When more than one specimen was originally cited and no type was designated, the type should be selected in accordance with the following:

1. The type specimen interprets the description and fixes the application of the name, hence, primarily the description controls the selection of the type.

2. The type may be indicated by the specific name, this being sometimes derived from the collector, locality or host.

3. If one specimen is figured in connection with the original description this may usually be regarded as the type.

4. Specimens that are mentioned by the author as being exceptional or unusual, or those which definitely disagree with the description (provided others agree) may usually be excluded from consideration in selecting the type.



5. An examination of the actual sheets of specimens studied by the author may aid in determining or selecting the type. He may have written the name or left notes or drawings upon one of the sheets.

*Note.* Specimens known to have been received by the author subsequent to the study resulting in the original publication should be excluded from consideration.

6. If an author, in publishing a new species, gives a description of his own, this takes precedence over synonymy or cited descriptions, in determining the type specimen.

*Article 4.* The nomenclatural type species of a genus is the species or one of the species included when the genus was originally published.

If a genus includes but one species when originally published this species is the type.

When more than one species is included in the original publication of the genus, the type is determined by the following rules:

(a) When, in the original publication of a genus, one of the species is definitely designated as type, this species shall be accepted as the type, regardless of other considerations.

If *typicus* or *typus* is used as a new specific name for one of the species, this species shall be accepted as the type as if it were definitely designated.

(b) The publication of a new generic name as an avowed substitute for an earlier one does not change the type of the genus.

(c) If a genus, without an originally designated type, contains among its original species one with the generic name used as a specific name, either as a valid name or synonym, that species is to be accepted as the type.

*Example.* The type species of *Pentstemon* (Ait. Hort. Kew. 2 : 360. 1789) is *Chelone Pentstemon* (L. Sp. Pl. 612. 1753; ed. 2. 850. 1763) because the latter is cited as a synonym under one of the species of *Pentstemon*.

(d) If a genus, when originally published, includes more than one species, and no species is definitely designated as type, nor indicated according to (c), the choice of the type should accord with the following principles:

1. Species inquirendae or species doubtfully referred to the genus, or mentioned as in any way exceptional are to be excluded from consideration in selecting the type.

2. Genera of the first edition of Linnaeus's "Species Plantarum" (1753) are usually typified through the citations given in the fifth edition of his "Genera Plantarum" (1754) except when inconsistent with the preceding articles.

*Example.* *Arundo* (L. Sp. Pl. 81. 1753) is typified by *A. Donax* since

this is the species figured by Scheuchzer in the plate cited by Linnaeus (Gen. Pl. 35. 1754).

3. Species which definitely disagree with the generic description (provided others agree), or which possess characters stated in the generic description as rare or unusual, are to be excluded from consideration in selecting the type.

### RECOMMENDATIONS

*Article 5.* In the future it is recommended that authors of generic names definitely designate the type species; and that in the selection of types of genera previously published, but of which the type would not be indicated by the preceding articles, the following points be taken into consideration:

(a) The type species should usually be the species or one of the species which the author had chiefly in mind. This is often indicated by

1. A closer agreement with the generic description.

2. Certain species being figured (in the same work).

3. The specific name, such as *vulgaris*, *communis*, *medicinalis* or *officinalis*.

(b) The type species should usually be the one best known to the author. It may be assumed that an indigenous species (from the standpoint of the author), or an economic species, or one grown in a botanical garden and examined by the author, would usually represent an author's idea of a genus.

(c) In Linnaean genera the type should usually be chosen from those species included in the first technical use of the genus in pre-Linnaean literature.

*Example.* The type species of *Andropogon* L. should be chosen from the two species included by Linnaeus in the first use of the name (L. Fl. Leyd. 1740).

(d) The types of genera adopted through citations of non-binomial literature (with or without change of name) should usually be selected from those of the original species which received names in the first binomial publication.

*Example.* *Cypripedium* (L. Sp. Pl. 951) is typified by *C. Calceolus*. Under *Cypripedium* (Gen. Pl. 408. 1754) Linnaeus cites *Calceolus* Tourn. 249. Tournefort mentions 5 species, one of which is cited under *Cypripedium Calceolus* by Linnaeus.

(e) The preceding conditions having been met, preference should be shown for a species which will retain the generic name in its most widely used sense, or for one which belongs to a division of the genus containing a larger number of species, or, especially in Linnaean genera, for the historically oldest species.



*Example.* *Phalaris* L. is typified by *P. canariensis* because it is the only one of the 5 Linnaean species known to the older writers (such as Bauhin) by the name of *Phalaris*, so far as shown by the synonyms given by Linnaeus.

(f) Among species equally eligible, the preference should be given to the first known to have been designated as the type.

(g) If it is impossible to select a type under the conditions mentioned above the first of equally eligible species should be chosen.

### Section 3. Rejection of Names

*Article 6.* A name is rejected:

(a) When preoccupied (homonym).

1. A specific name is a homonym when it has been published for another species under the same generic name.

2. A generic name is a homonym when previously published for another genus.

3. Similar names are to be treated as homonyms only when they are mere variations in the spelling of the same word; or in the case of specific names, when they differ only in adjective or genitive termination.

(b) When there is an older valid name based on another member of the same group (metonym).

(c) When there is an older valid name based on the same type (typonym).

(d) When it has not been effectively published according to the provisions of Section 1 of these rules (hyponym).

*Article 7.* There may be exceptions to the application of the principles and rules of this code in cases where a rigid application would lead to great confusion. Such exceptions become valid when approved by the Nomenclature Commission.

### NOMENCLATURE COMMISSION

A code of nomenclature should secure uniformity, definiteness and stability in the application of names. If proposed rules result in the change of well-established names of economic plants, botanists will hesitate to apply them uniformly. All contingencies can not be foreseen and experience has shown that the rigid application of any set of rules results in a few cases of greatly confused nomenclature. The committee has recognized this and hence has introduced an article permitting exceptions. The committee also recognized that to secure uniformity and definiteness the exceptions should in some way be validated. The most convenient and practical validation would be through a permanent judicial body created for the purpose. As the proposed code invites international

support, the judicial body should be an international commission. International rules of nomenclature, including rules for the retroactive fixation of generic types and including a provision for exceptions, together with an International Commission to validate names (generic types and nomina conservanda) would go far toward giving to botany a stable and uniform nomenclature.

This International Commission should be appointed at the next International Botanical Congress.