INTERNATIONAL RULES

OF

BOTANICAL NOMENCLATURE

ADOPTED BY THE

FIFTH INTERNATIONAL BOTANICAL CONGRESS, CAMBRIDGE, 1930

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INTRODUCTION.

A REPORT by the late Dr. Briquet, Rapporteur Général, of the discussions in the Subsection of Nomenclature at the Fifth International Botanical Congress at Cambridge in 1930 was published in the Report of the Proceedings of the Congress (Cambridge University Press, 1931). Unfortunately Dr. Briquet died before he had prepared the draft of the Rules as revised and modified by the Congress.

As some considerable alterations, especially in arrangement, had been necessitated owing to the acceptance by the Congress of certain of the " Proposals " put forward by British Botanists, Dr. Harms asked me to prepare an English draft. In this I have had the assistance of members of the British Committee, and especially of the full notes of the discussions taken at the Congress by Miss M. L. Green and Dr. T. A. Sprague.

There has been some delay in the preparation of the translations, but it is hoped that the complete report in the three languages will shortly be published. In view, however, of the approach of the Congress of 1935, Dr. Harms has agreed to the publication of the abridged English draft, which has had his careful consideration and with which he is in agreement. The abridgement consists merely in the omission of most of the examples.

A. B. RENDLE.

London,
May 8, 1934.

INTERNATIONAL RULES OF BOTANICAL NOMENCLATURE, 1930.

Chapter I.—General Considerations and Guiding Principles (Art. 1–9).

Art. 1. Botany cannot make satisfactory progress without a precise system of nomenclature, which is used by the great majority of botanists in all countries.

Art. 2. The precepts on which this precise system of botanical nomenclature is based are divided into *principles*, *rules*, and *recommendations*. The principles (Art. 1–9, 10–14, 15–19 *) form the basis of the rules and recommendations. The object of the rules (Art. 19–74) is to put the nomenclature of the past into order and to provide for that of the future. They are always retroactive : names or forms of nomenclature contrary to a rule (illegitimate names or forms) cannot be maintained. The recommendations deal with subsidiary points, their object being to bring about greater uniformity and clearness in future nomenclature : names or forms contrary to a recommendation cannot on that account be rejected, but they are not examples to be followed.

Art. 3. The rules of nomenclature should be simple and founded on considerations sufficiently clear and forcible for everyone to comprehend and be disposed to accept.

Art. 4. The essential points in nomenclature are : (1) to aim at fixity of names ; (2) to avoid or to reject the use of forms and names which may cause error or ambiguity or throw science into confusion.

Next in importance is the avoidance of all useless creation of names.

Other considerations, such as absolute grammatical correctness, regularity or euphony of names, more or less prevailing custom, regard for persons, etc., notwithstanding their undeniable importance, are relatively accessory.

Art. 5. In the absence of a relevant rule, or where the consequences of rules are doubtful, established custom must be followed.

Art. 6. Botanical nomenclature is independent of zoological nomenclature in the sense that the name of a plant is not to be

* Art. 19 is both a principle and a rule.

rejected simply because it is identical with the name of an animal. If, however, an organism is transferred from the animal to the plant kingdom, its validly published names are to be accepted as botanical nomenclature in the form prescribed by the rules of botanical nomenclature; and if an organism is transferred from the plant to the animal kingdom its names retain their status in botanical nomenclature.

Art. 7. Scientific names of all groups are usually taken from Latin or Greek. When taken from any language other than Latin, or formed in an arbitrary manner, they are treated as if they were Latin. Latin terminations should be used so far as possible for new names.

Art. 8. Nomenclature deals with: (1) the *terms* which denote the rank of taxonomic groups (Art. 10–14): (2) the *names* which are applied to the individual groups (Art. 15–72).

Art. 9. The rules and recommendations of botanical nomenclature apply to all groups of the plant kingdom, recent and fossil, with certain distinctly specified exceptions.

Chapter II.—Categories of Taxonomic Groups, and the Terms denoting them (Art. 10–14, Rec. I, II).

Art. 10. Every individual plant, interspecific hybrids and chimæras excepted, belongs to a species (*species*), every species to a genus (*genus*), every genus to a family (*familia*), every family to an order (*ordo*), every order to a class (*classis*), every class to a division (*divisio*).

Art. 11. In many species varieties (*varietas*), forms (*forma*), and races or biological forms (*forma biologica*) are distinguished; in parasitic species special forms (*forma specialis*), and in certain cultivated species modifications still more numerous; in many genera sections (*sectio*) are distinguished, in many families tribes (*tribus*).

Recommendation I. In parasites, especially parasitic fungi, authors who do not give specific value to forms characterized from a biological standpoint, but scarcely or not at all from a morphological standpoint, should distinguish within the species special forms (*forma specialis*) characterized by their adaption to different hosts.

Art. 12. Finally, if a greater number of intermediate categories are required, the terms for these subdivisions are made by adding the prefix sub (*sub*) to the terms denoting the categories. Thus subfamily (*subfamilia*) denotes a category between a family and tribe, subtribe (*subtribus*) a category between a tribe and a genus, etc. The classification of subordinated categories may thus be carried, for wild plants, to twenty-three degrees in the following order: Regnum vegetabile. Divisio. Subdivisio. Classis. Subclassis. Ordo. Subordo. Familia. Subfamilia. Tribus. Subtribus.

Genus. Subgenus. Sectio. Subsectio. Species. Subspecies. Varietas. Subvarietas. Forma. Forma biologica. Forma specialis. Individuum.

If this list of categories is insufficient it can be augmented by the intercalation of supplementary categories, provided that this does not introduce confusion or error: e. g. *series* and *subseries* are categories which can be intercalated between subsection and species.

Recommendation II. The arrangement of species in a genus or in a subdivision of a genus is made by means of typographic signs, letters or numerals.

Art. 13. The definition of each of these categories varies, up to a certain point, according to individual opinion and the state of the science; but their relative order, sanctioned by custom, must not be altered. No classification is admissible which contains such alterations: e. g. a form divided into varieties, a species containing genera.

Art. 14. The fertilization of one species by another may give rise to a hybrid (*hybrida*); that of a modification or subdivision of a species by another modification of the same species may give rise to a half-breed (*mistus*).

Chapter III.—Names of Taxonomic Groups (Art. 15–72, Rec. III—L).

Section 1.—**General Principles : priority** (Art. 15–17, Rec. III).

Art. 15. The purpose of giving a name to a taxonomic group is not to indicate the characters or the history of the group, but to supply a means of referring to it.

Art. 16. Each group with a given circumscription, position, and rank can bear only one valid name *, the earliest that is in accordance with the Rules of Nomenclature.

Art. 17. No one may change a name (or combination of names) without serious motives, based either on more profound knowledge of facts or on the necessity of giving up a nomenclature that is contrary to the Rules.

Recommendation III. Changes in nomenclature should be made only after adequate taxonomic study.

* In genera and groups of higher rank the valid name is the earliest name published with the same rank, provided that this is in conformity with the Rules of Nomenclature and the provisions of Arts. 20 and 21.

In subdivisions of genera the valid name is the earliest name published with the same rank, provided that this name and its combination with the generic name are in conformity with the Rules of Nomenclature.

In species and groups of lower rank the valid name is the binary or ternary combination containing the earliest epithet published with the same rank, provided that this combination is in conformity with the Rules of Nomenclature.

Section 2.—**The Type Method** (Art. 18, Rec. IV–VII).

Art. 18. The application of names of taxonomic groups is determined by means of *nomenclatural types*. A nomenclatural type is that constituent element of a group to which the name of the group is permanently attached, whether as an accepted name or as a synonym. The name of a group must be changed if the type of that name is excluded (see Art. 66).

The type of the name of an order or suborder is a family, that of the name of a family, subfamily, tribe or subtribe is a genus, that of a generic name is a species, that of the name of a species or group of lower rank is usually a specimen or preparation. In some species, however, the type is a description or figure given by a previous author. Where permanent preservation of a specimen or preparation is impossible, the application of the name of a species or subdivision of a species is determined by means of the original description or figure.

Note.—The nomenclatural type is not necessarily the most typical or representative element of a group; it is merely that element with which the name of the group is permanently associated.

Recommendations:

IV. When publishing names of new groups authors should indicate carefully the subdivision which is the type of the new name: the type-genus in a family, the type-species in a genus, the type-variety or specimen in a species. This type determines the application of the name in the event of the group being subsequently divided. When describing new species, varieties or forms of parasitic plants, especially Fungi, the host plant of the type should be indicated.

V. When revising a genus an author should state which species he accepts as the nomenclatural type.

VI. In selecting a nomenclatural type for a genus of non-vascular Cryptogams, botanists should, where possible, choose a species that will fix the generic name as it is now commonly applied.

VII. The utmost importance should be given to the preservation of the original (" type ") material on which the description of a new group is based. In microscopic Cryptogams the preparations and original drawings, in fleshy Fungi water-colour drawings and specimens suitably prepared or dried, should be preserved. The original account should state where this material is to be found.

Section 3.—**Limitation of the Principle of Priority: publication, starting-points, conservation of names** (Art. 19–22).

Art. 19. A name of a taxonomic group has no status under the Rules, and has no claim to recognition by botanists, unless it is validly published (see Section 6, Art. 37).

Art. 20. Legitimate botanical nomenclature begins for the different groups of plants at the following dates:—

(*a*) Phanerogamae and Pteridophyta, 1753 (Linnæus, *Species Plantarum*, ed. 1).

(*b*) Muscineae, 1801 (Hedwig, *Species Muscorum*).

(*c*) Sphagnaceae and Hepaticae, 1753 (Linnæus, *Species Plantarum*, ed. 1).

(*d*) Lichenes, 1753 (Linnæus, *Species Plantarum*, ed. 1).

(*e*) Fungi: Uredinales, Ustilaginales and Gasteromycetes, 1801 (Persoon, *Synopsis methodica Fungorum*).

(*f*) Fungi cæteri, 1821–32 (Fries, *Systema mycologicum*).

(*g*) Algae, 1753 (Linnæus, *Species Plantarum*, ed. 1).

Exceptions.—Nostocaceae homocysteae, 1892–93 (Gomont, *Monographie des Oscillariées* in *Ann. Sci. Nat.* sér. 7, Bot. vi, 91; vii, 263).—Nostocaceae heterocysteae, 1886–88 (Bornet et Flahault, *Revision des Nostocacées hétérocystées* in *Ann. Sci. Nat.* sér. 7, Bot. iii, 323; iv, 344; v, 51; vii, 177).—Desmidiaceae, 1858 (Ralfs, *British Desmidiaceae*).—Oedogoniaceae, 1900 (Hirn, *Monographie und Iconographie der Oedogoniaceen* in *Act. Soc. Sci. Fenn.* xxvii, No. 1).

(*h*) Myxomycetes, 1753 (Linnæus, *Species Plantarum*, ed. 1).

The nomenclature of Fossil Plants of all groups begins with the year 1820.

It is agreed to associate generic names which appear in Linnæus's *Species Plantarum*, ed. 1 (1753) and ed. 2 (1762–63), with the first subsequent descriptions given under those names in Linnæus's *Genera Plantarum*, ed. 5 (1754) and ed. 6 (1764).

Art. 21. However, to avoid disadvantageous changes in the nomenclature of genera by the strict application of the Rules of Nomenclature, and especially of the principle of priority in starting from the dates given in Art. 20, the Rules provide a list of names which must be retained as exceptions. These names are by preference those which have come into general use in the fifty years following their publication, or which have been used in monographs and important floristic works up to the year 1890.

Note 1.—These lists of conserved names will remain permanently open for additions. Any proposal of an additional name must be accompanied by a detailed statement of the cases for and against its conservation. Such proposals must be submitted to the Executive Committee, who will refer them for examination to the Special Committees for the various taxonomic groups.

Note 2.—The application of conserved names is determined by nomenclatural types, or by substitute-types where necessary or desirable.

Note 3.—A conserved name is conserved against all other names for the group, whether these are cited in the corresponding list of rejected names or not, so long as the group concerned is not united or reunited with another group bearing a legitimate name. In the event of union or reunion with another group, the earlier of the two competing names is adopted in accordance with Art. 56.

Note 4.—A conserved name is conserved against all earlier homonyms.

Art. 22. When a name proposed for conservation has been provisionally approved by the Executive Committee, botanists are authorized to retain it pending the decision of the next International Botanical Congress.

Section 4.—**Nomenclature of the Taxonomic Groups according to their Categories** (Art. 23–35, Rec. VIII–XX).

§ 1. *Names of Groups above the Rank of Family.*

Recommendations:

VIII. Names of divisions and subdivisions, of classes and subclasses, are taken from their chief characters. They are expressed by words of Greek or Latin origin in the plural number, some similarity of form and termination being given to those which designate groups of the same nature.

IX. Orders are designated preferably by the name of one of their principal families, with the ending *-ales*. Suborders are designated in a similar manner, with the ending *-ineae*. But other terminations may be used for these names, provided that they do not lead to confusion or error.

§ 2. *Names of Families and Subfamilies, Tribes, and Subtribes.*

Art. 23. Names of families are taken from the name or former name of one of their genera and end in *-aceae*.

Exceptions:

(1) The following names, sanctioned by long usage, are treated as exceptions to the rule: *Palmae, Gramineae, Cruciferae, Leguminosae, Guttiferae, Umbelliferae, Labiatae, Compositae*. Botanists are authorized, however, to use as alternatives the appropriate names ending in *-aceae*.

(2) Those who regard the *Papilionaceae* as constituting an independent family may use that name, although it is not formed in the prescribed manner.

Note.—To avoid disadvantageous changes in the nomenclature of families by the strict application of the Rules, and especially of the principle of priority, a list of names which must be retained as exceptions will be provided (Appendix II).

Art. 24. Names of subfamilies (*subfamiliae*) are taken from the name of one of the genera in the group, with the ending *-oideae*, similarly for tribes (*tribus*), with the ending *-eae*, and for subtribes (*subtribus*), with the ending *-inae*.

§ 3. *Names of Genera and Subdivisions of Genera.*

Art. 25. Names of genera are substantives (or adjectives used as substantives), in the singular number and written with an initial capital, which may be compared with our family names. These names may be taken from any source whatever, and may even be composed in an absolutely arbitrary manner.

Recommendation X. Botanists who are forming generic names show judgment and taste by attending to the following recommendations:—

(*a*) Not to make names long or difficult to pronounce.
(*b*) Not to dedicate genera to persons quite unconnected with botany, or at least with natural science, nor to persons quite unknown.
(*c*) Not to take names from barbarous languages, unless those names are frequently cited in books of travel, and have an agreeable form that is readily adaptable to the Latin tongue and to the tongues of civilized countries.
(*d*) To indicate, if possible, by the formation or ending of the name the affinities or analogies of the genus.
(*e*) To avoid adjectives used as nouns.
(*f*) Not to give a genus a name whose form is rather that of a subgenus or section (e. g. *Eusideroxylon*, a name given to a genus of *Lauraceae*. This, however, being legitimate, cannot be altered).
(*g*) Not to make names by combining words from different languages (*nomina hybrida*).

Art. 26. Names of subgenera and sections are usually substantives resembling the names of genera: e. g. ***Fraxinaster***, *Archieracium*. Names of subsections and other lower subdivisions of genera are preferably adjectives in the plural number agreeing in gender with the generic name and written with an initial capital, or their place may be taken by an ordinal number or a letter: e. g. *Pleiostylae, Fimbriati, Bibracteolata.*

Recommendations:

XI. Botanists constructing names for subgenera or sections will do well to attend to the preceding recommendations and also to the following:—

(*a*) To give, where possible, to the principal division of a genus a name which recalls that of the genus with some modification or addition. Thus *Eu* may be placed at the beginning of the generic name when it is of Greek origin, *-astrum, -ella* at the end of the name when Latin, or any other modification consistent with the grammar and usages of the Latin language: e. g. *Eucardamine* (from *Cardamine*), *Drabella* (from *Draba*).
(*b*) To avoid giving to a subgenus or a section the name of the genus to which it belongs, with the ending *-oides* or *-opsis*: but on the contrary to reserve this ending for a section which resembles another genus and by then adding *-oides* or *-opsis* to the name of that other genus, if it is of Greek origin, to form the name of the section.
(*c*) To avoid taking as the name of a subgenus or section a name which is already in use as such in another genus, or which is the name of a genus.
(*d*) To avoid in co-ordinated subdivisions of a genus the use of names in the form of a noun together with those in the form of a plural adjective; the former should be used chiefly for subgenera and sections, the latter for subsections, series and subseries.

XII. When it is desired to indicate the name of a subgenus or section (or other subdivision to which a particular species belongs) in connexion with the generic name and specific epithet, the name of the subdivision is placed in parenthesis between the two (where necessary, the rank of the subdivision is also indicated): e. g. *Loranthus* (Sect. *Ischnanthus*) *gabonensis*.

§ 4. *Names of Species* (*binary names*).

Art. 27. Names of species are binary combinations consisting of the name of the genus followed by a single specific epithet. If an epithet consists of two or more words, these must either

be united into one or joined by a hyphen. Symbols forming part of specific epithets proposed by Linnæus must be transcribed.

The specific epithet, when adjectival in form and not used as a substantive, agrees with the generic name.

Recommendations :

XIII. The specific epithet should, in general, give some indication of the appearance, the characters, the origin, the history or the properties of the species. If taken from the name of a person it usually recalls the name of the one who discovered or described it, or was in some way concerned with it.

XIV. Names of men and women, and also of countries and localities used as specific epithets, may be substantives in the genitive (*Clusii, saharae*) or adjectives (*Clusianus, dahuricus*). It will be well, in the future, to avoid the use of the genitive and the adjectival form of the same epithet to designate two different species of the same genus : e. g. *Lysimachia Hemsleyana* Maxim. (1891) and *L. Hemsleyi* Franch. (1895).

XV. In forming specific epithets botanists will do well to have regard also to the following recommendations :—

(*a*) To avoid those which are very long and difficult to pronounce.
(*b*) To avoid those which express a character common to all, or nearly all, the species of a genus.
(*c*) To avoid using the names of little-known or very restricted localities, unless the species is quite local.
(*d*) To avoid, in the same genus, epithets which are very much alike, especially those which differ only in their last letters.
(*e*) Not to adopt unpublished names found in travellers' notes or in herbaria, attributing them to their authors, unless these have approved publication.
(*f*) Not to name a species after a person who has neither discovered, nor described, nor figured, nor in any way studied it.
(*g*) To avoid epithets which have been used before in any closely-allied genus.
(*h*) To avoid specific epithets formed of two or more (hyphened) words.
(*i*) To avoid epithets which have the same meaning as the generic name (pleonasm).

§ 5. *Names of Groups below the rank of Species (ternary names).*

Art. 28. Epithets of subspecies and varieties are formed like those of species and follow them in order, beginning with those of the highest rank. When adjectival in form and not used as substantives they agree with the generic name. Similarly for subvarieties, forms and slight or transient modifications of wild plants, which receive either epithets, or numbers, or letters to facilitate their arrangement. The use of a binary nomenclature for subdivisions of species is not admissible. It is permissible to reduce more complicated names to ternary combinations.

Examples : *Andropogon ternatus* subsp. *macrothrix* (not *Andropogon macrothrix* or *Andropogon ternatus* subsp. *A. macrothrix*) ; *Saxifraga Aizoon* subforma *surculosa* Engl. & Irmsch. is permissible for *Saxifraga Aizoon* var. *typica* subvar. *brevifolia* forma *multicaulis* subforma *surculosa* Engl. & Irmsch.

Art. 29. The same epithet may be used for subdivisions of different species, and the subdivisions of one species may bear the same epithet as other species: e. g. *Rosa Jundzillii* var. *leioclada* and *Rosa glutinosa* var. *leioclada*, *Viola tricolor* var. *hirta* in spite of the existence already of a different species named *Viola hirta*.

Art. 30. Two subdivisions of the same species, even if they are of different rank, cannot bear the same subdivisional epithet, unless they are based on the same type. If the earlier subdivisional name (ternary combination) was validly published, the later one is illegitimate, and must be rejected.

The ternary combinations *Biscutella didyma* subsp. *apula* Briq. and *Biscutella didyma* var. *apula* Halácsy may both be used because they are based on the same type, and the one includes the other.

The following is incorrect: *Erysimum hieracifolium* subsp. *strictum* var. *longisiliquum* and *E. hieracifolium* subsp. *pannonicum* var. *longisiliquum*—a form of nomenclature which allows two varieties bearing the same name in the same species.

Recommendations:

XVI. Recommendations made for specific epithets apply equally to epithets of subdivisions of species.

XVII. Special forms (*forma specialis*) are preferably named after the host species; if desired, double names may be used: e. g. *Puccinia Hieracii* f. sp. *villosi*, *Pucciniastrum Epilobii* f. sp. *Abieti-Chamaenerii*.

XVIII. Botanists should avoid giving a new epithet to any subdivision of a species which includes the type either of the specific name or of a higher subdivisional name. They should either repeat that epithet or use one of the customary epithets, *typicus*, *genuinus*, *originarius*, etc. E. g. *Andropogon caricosus* subsp. *mollissimus* var. *mollissimus* Hackel; *Arthraxon ciliaris* Beauv. subsp. *Langsdorfii* var. *genuinus* Hackel.

XIX. Botanists proposing new epithets for subdivisions of species should avoid such as have been used previously in the same genus, whether for species or for subdivisions of other species.

§ 6. *Names of Hybrids and Half-breeds.*

Art. 31. Hybrids or putative hybrids between species of the same genus are designated by a formula and, whenever it seems useful or necessary, by a name.

(1) *Sexual hybrids.*—The formula consists of the names or specific epithets of the two parents in alphabetical order and connected by the sign ×. When the hybrid is of known experimental origin the formula may be made more precise by the addition of the signs ♀ ♂, the name of the female (seed-bearing) parent being placed first.

The name, which is subject to the same rules as names of species, is distinguished from the latter by the sign × before the name: e. g. ×*Salix capreola* (*Salix aurita* × *caprea*).

(2) *Asexual hybrids* (graft hybrids, chimæras, etc.).—The formula consists of the names of the two parents in alphabetical order connected by the sign +. The name has a "specific"

epithet different from that of the corresponding sexual hybrid (if any), and is preceded by the sign + : e. g. +*Solanum tubingense* (*Solanum nigrum*+*S. Lycopersicum*).

Art. 32. Bigeneric hybrids (hybrids between species of two genera) are also designated by a formula and, whenever it seems useful or necessary, by a name.

The formula consists of the names of the two parents connected by a sign, as in Art 31.

The name consists of a new " generic " name usually formed by a combination of the names of the parent genera, and a " specific " epithet. All hybrids (whether sexual or asexual) between the same two genera bear the same " generic " name.

(1) *Sexual hybrids.*—In the formula the connecting sign × is used. The name is preceded by the sign × : e. g. ×*Odontioda Boltonii* (*Cochlioda Noezliana*×*Odontoglossum Vuylstekeae*).

(2) *Asexual hybrids.*—In the formula the connecting sign + is used. The name is preceded by the sign +. The " specific " epithet is different from that of the corresponding sexual hybrid (if any) between the same species. E. g. +*Laburnocytisus Adami* (*Laburnum anagyroides*+*Cytisus purpureus*).

Art. 33. Ternary hybrids, or those of a higher order, are designated, like ordinary hybrids, by a formula and, whenever it seems useful or necessary, by a name. Such as are trigeneric or polygeneric are given new " generic " names usually formed by a combination of the names of the parent genera.

Recommendation XX. Half-breeds, or putative half-breeds, may be designated by a name and a formula. Names of half-breeds are intercalated among the subdivisions of a species, and are preceded by the sign ×. In the formula the names of the parents are in alphabetical order. When the half-breed is of known experimental origin the formula may be made more precise by the addition of the signs ♀♂, the name of the female (seed-bearing) parent being placed first.

Art. 34. When different hybrid forms of the same parentage (pleomorphic hybrids ; combinations between different forms of a collective species, etc.) are united in a collective group, the subdivisions are classed under the binary name of the hybrid, like the subdivisions of a species under that of a species.

Examples : ×*Mentha niliaca* β *Lamarckii* (=*M. longifolia*×*rotundifolia*). The preponderance of the characters of one or other parent may be indicated in the formulæ in the following manner : *Mentha longifolia*>×*rotundifolia*, *M. longifolia*×<*rotundifolia*. The participation of a particular variety may also be indicated : e. g. *Salix caprea*×*daphnoides* var. *pulchra*.

§ 7. *Names of Plants of Horticultural Origin.*

Art. 35. Forms and half-breeds among cultivated plants receive fancy epithets, preferably in common language, as different as possible from the Latin epithets of species or varieties,

When they can be attached to a species, a subspecies or a botanical variety this is indicated by a succession of names: e. g. *Pelargonium zonale* Mrs. Pollock.

Section 5.—**Conditions of effective Publication.**

Art. 36. Publication is effected, under these Rules, either by sale or distribution of printed matter or indelible autographs to the general public, or to specified representative botanical institutions *.

No other kind of publication is accepted as effective: communication of new names at a public meeting, or the placing of names in collections or gardens open to the public, does not constitute effective publication.

Section 6.—**Conditions and Dates of valid Publication of Names** (Art. 37–45, Rec. XXI–XXIX).

Art. 37. A name of a taxonomic group is not validly published unless it is both (1) effectively published (see Art. 36), and (2) accompanied by a description of the group or by a reference to a previously and effectively published description of it.

Mention of a name on a ticket issued with a dried plant without a printed or autographed description does not constitute valid publication of that name.

Note.—In certain circumstances a plate or figure with analyses is accepted as equivalent to a description (*vide* Art. 43, 44).

Art. 38. From January 1, 1935, names of new groups of recent plants, the Bacteria excepted, are considered as validly published only when they are accompanied by a Latin diagnosis.

Note.—This article legitimizes names of new groups effectively published from 1908 to 1934 with diagnoses in modern languages.

Art. 39. From January 1, 1912, the name of a new taxonomic group of fossil plants is not considered as validly published unless it is accompanied by illustrations or figures showing the essential characters, in addition to the description.

Art. 40. A name of a taxonomic group is not validly published when it is merely cited as a synonym.

Art. 41. A group is not characterized, and the publication of its name is not validated, merely by mention of the subordinate groups included in it: thus the publication of the name of the order is not validated by mention of the included families; that of a family is not validated by mentioned of the included genera; that of a genus is not validated by mention of the included species. E. g. the generic name *Ibidium* Salisbury

* The preparation of a list of representative botanical institutions is referred to the Executive Committee (see App. VII).

(Trans. Hort. Soc. i, 291 : 1812) was published merely with the mention of four included species : as Salisbury supplied no generic description, the publication of *Ibidium* was invalid.

Art. 42. A name of a genus is not validly published unless it is accompanied (1) by a description of the genus, or (2) by the citation of a previously and effectively published description of the genus under another name, or (3) by a reference to a previously and effectively published description of the genus as a subgenus, section or other subdivision of a genus.

An exception is made for the generic names published by Linnæus in *Species Plantarum*, ed. 1 (1753) and ed. 2 (1762–63), which are treated as having been validly published on those dates (see Art. 20).

Note.—In certain circumstances a plate with analyses is accepted as equivalent to a generic description (see Art. 43).

Art. 43. The name of a monotypic new genus based on a new species is validated (1) by the provision of a combined generic and specific description (*descriptio generico-specifica*), (2) by the provision of a plate with analyses showing essential characters ; but this applies only to plates and generic names published before January 1, 1908.

Art. 44. The name of a species or of a subdivision of a species is not validly published unless it is accompanied (1) by a description of the group, or (2) by the citation of a previously and effectively published description of the group under another name, or (3) by a plate or figure with analyses showing essential characters ; but this applies only to plates or figures published before January 1, 1908.

Art. 45. The date of a name or of an epithet is that of its valid publication (see Art. 19, 36). For purposes of priority, however, only legitimate names and epithets published in legitimate combinations are taken into consideration * (see Art. 60). In the absence of proof to the contrary, the date given in the work containing the name or epithet must be regarded as correct.

On and after January 1, 1935, only the date of publication of the Latin diagnosis can be taken into account for recent plants.

For fossil plants, on and after January 1, 1912, the date is that of the simultaneous publication of the description and figure (or, if these are published at different dates, the later of the two dates).

Botanists will do well in publishing to conform to the following recommendations :—

XXI. Not to publish a new name without clearly indicating whether it is the name of a family or a tribe, a genus or a section, a species or

* A legitimate name or epithet is one that is strictly in accordance with the Rules,

a variety; briefly, without expressing an opinion as to the rank of the group to which the name is given.

Not to publish the name of a new group without indicating its type (see Recommendation IV).

XXII. To avoid publishing or mentioning in their publications unpublished names which they do not accept, especially if the persons responsible for these names have not formally authorized their publication (see Recommendation XV (*e*)).

XXIII. When publishing names of new groups of plants in works written in a modern language (floras, catalogues, etc.), to publish simultaneously the Latin diagnoses of recent plants (Bacteria excepted) and the figures of fossil plants, which will make these names valid according to the Rules.

XXIV. In describing new groups of lower Cryptogams, especially among the Fungi, or among microscopic plants, to add to the description a figure or figures of the plants, with details of microscopic structure, as an aid to identification.

XXV. The description of parasitic plants should always be followed by the indication of the hosts, especially in the case of parasitic fungi. The hosts should be designated by their Latin scientific names and not by popular names in modern languages, the significance of which is often doubtful.

XXVI. To give the etymology of new generic names and also of new epithets when the meaning of these is not obvious.

XXVII. To indicate precisely the date of publication of their works and that of the placing on sale or the distribution of named and numbered plants when these are accompanied by printed diagnoses. In the case of a work appearing in parts, the last published sheet of the volume should indicate the precise dates at which the different fascicles or parts of the volumes were published as well as the number of pages in each.

XXVIII. When works are published in periodicals, to require the publisher to indicate on the separate copies the date (year and month) of publication and also the title of the periodical from which the work is extracted.

XXIX. Separate copies should always bear the pagination of the periodical of which they form a part; if desired they may also bear a special pagination.

Section 7.—**Citation of Authors' Names for purposes of precision** (Art. 46–49, Rec. XXX–XXXII).

Art. 46. For the indication of the name (unitary, binary, or ternary) of a group to be accurate and complete, and in order that the date may be readily verified, it is necessary to cite the author who first published the name in question.

Art. 47. An alteration of the diagnostic characters or of the circumscription of a group does not warrant the citation of an author other than the one who first published its name.

When the changes have been considerable, an indication of their nature and of the author responsible for the change is added, the words *mutatis charact.*, or *pro parte*, or *excl. gen.*, *excl. sp.*, *excl. var.*, or some other abridged indication being employed.

Examples: *Phyllanthus* L. em. (emendavit) Müll. Arg.; *Myosotis* L. pro parte, R. Br.; *Globularia cordifolia* L. excl. var. (em. Lam.).

Art. 48. When a name of a taxonomic group has been proposed but not published by one author, and is subsequently validly published and ascribed to him (or her) by another author who supplied the description, the name of the latter author must be appended to the citation with the connecting word " ex ". The same holds for names of garden origin cited as " Hort." E. g. *Capparis lasiantha* R. Br. ex DC.; *Gesneria Donklarii* Hort. ex Hook.

If it is desirable or necessary to abbreviate such a citation, the name of the publishing author, being the more important, must be retained.

Where a name and description by one author are published by another author, the word *apud* is used to connect the names of the two authors, except where the name of the second author forms part of the title of a book or periodical in which case the connecting word *in* is used instead.

Art. 49. When a genus or a group of lower rank is altered in rank but retains its name or epithet, the original author must be cited in parenthesis, followed by the name of the author who effected the alteration. The same holds when a subdivision of a genus, a species, or a group of lower rank is transferred to another genus or species with or without alteration of rank.

Examples: *Medicago polymorpha* L. var. *orbicularis* L., when raised to the rank of a species, becomes *Medicago orbicularis* (L.) All. *Sorbus* sect. *Aria* Pers., on transference to *Pyrus*, is cited as *Pyrus* sect. *Aria* (Pers.) DC.

Recommendations:

XXX. Authors' names put after names of plants are abbreviated, unless they are very short.

For this purpose preliminary particles or letters that, strictly speaking, do not form part of the name are suppressed, and the first letters are given without any omission. If a name of one syllable is long enough to make it worth while to abridge it, the first consonants only are given (Br. for Brown); if the name has two or more syllables, the first syllable and the first letter of the following one are taken, or the two first when both are consonants (Juss. for Jussieu, Rich. for Richard). When it is necessary to give more of a name to avoid confusion between names beginning with the same syllables, the same system is to be followed. For instance, two syllables are given together with the one or two first consonants of the third; or one of the last characteristic consonants of the name is added (Bertol. for Bertoloni, to distinguish from Bertero; Michx. for Michaux, to distinguish from Micheli). Christian names or accessory designations, serving to distinguish two botanists of the same name, are abridged in the same way (Adr. Juss. for Adrien de Jussieu, Gaertn. fil. or Gaertn. f. for Gaertner filius).

When it is a well established custom to abridge a name in another manner it is best to conform to it (L. for Linnæus, DC. for De Candolle, St. Hil. for Saint-Hilaire).

In publications destined for the general public and in titles it is preferable not to abridge.

XXXI. When citing a name published as a synonym, the words " as synonym " or *pro synon.* should be added to the citation. When an author published as a synonym a manuscript name of another author, the word *ex* should be used to connect the names of the two authors: e. g. *Myrtus*

serratus Koenig ex Steud. *Nomencl.* 321 (1821), pro synon., a manuscript name of Koenig's published by Steudel as a synonym of *Eugenia laurina* Willd.

XXXII. The citation of authors earlier than the starting point of the nomenclature of a group is indicated, when considered useful or desirable, preferably between brackets or by the use of the word *ex*. This method is especially applicable in mycology when reference is made to authors earlier than Fries or Persoon.

Section 8.—**Retention of Names or Epithets of Groups which are remodelled or divided** (Art. 50–52).

Art. 50. An alteration of the diagnostic characters, or of the circumscription of a group, does not warrant a change in its name, except in so far as this may be necessitated (1) by transference of the group (Art. 53–55), or (2) by its union with another group of the same rank (Art. 56–57), or (3) by a change of its rank (Art. 58).

Examples: The genus *Myosotis* as revised by R. Brown differs from the original genus of Linnæus, but the generic name has not been changed, nor is a change allowable.—Various authors have united with *Centaurea Jacea* L. one or two species which Linnæus had kept distinct; the group thus constituted must be called *Centaurea Jacea* L. sensu ampl. or *Centaurea Jacea* L. em. Visiani, or em. Godron, etc.: the creation of a new name such as *Centaurea vulgaris* Godr. is superfluous.

Art. 51. When a genus is divided into two or more genera, the generic name must be retained for one of them, or (if it has not been retained) must be re-established. When a particular species was originally designated as the type, the generic name must be retained for the genus including that species. When no type was designated, a type must be chosen according to the regulations which will be given (Appendix I).

Art. 52. When a species is divided into two or more species, the specific epithet must be retained for one of them, or (if it has not been retained) must be re-established. When a particular specimen was originally designated as the type, the specific epithet must be retained for the species including that specimen. When no type was designated, a type must be chosen according to the regulations to be given (Appendix I).

The same rule applies to subdivisions of species; for example, to a subspecies divided into two or more subspecies, or to a variety divided into two or more varieties.

Section 9.—**Retention of Names or Epithets of Groups below the Rank of Genus on transference to another Genus or Species** (Art. 53–55).

Art. 53. When a subdivision of a genus is transferred to another genus (or placed under another generic name for the same genus) without change of rank, its subdivisional name must be retained, or (if it has not been retained) must be re-established unless one of the following obstacles exists: (1) that the resulting association of names has been previously published validly for a different

subdivision, or (2) that there is available an earlier validly published subdivisional name of the same rank. E. g. *Saponaria* sect. *Vaccaria* DC., transferred to *Gypsophila*, becomes *Gypsophila* sect. *Vaccaria* (DC.) Gren. & Godr.

Art. 54. When a species is transferred to another genus (or placed under another generic name for the same genus), without change of rank, the specific epithet must be retained or (if it has not been retained) must be re-established, unless one of the following obstacles exists: (1) that the resulting binary name has been previously and validly published for a different species, (2) that there is available an earlier validly published specific epithet.

When the specific epithet, on transference to another genus, has been applied erroneously in its new position to a different plant, it must be retained for the plant on which the group was originally based: e. g. the specific epithet of *Pinus Mertensiana* Bong. was transferred to *Tsuga* by Carrière, who, however, erroneously applied the new combination *Tsuga Mertensiana* to another species of *Tsuga*, namely, *T. heterophylla* (Raf.) Sarg., as is evident from his description: the epithet *Mertensiana* (Bong.) must be retained for *Pinus Mertensiana* Bong. when that species is transferred to *Tsuga*; the citation in parenthesis (under Art. 49) of the name of the original author, Bongard, indicates the type of the epithet, *Tsuga Mertensiana* (Bong.) Sargent, non Carrière.

Art. 55. When a variety or other subdivision of a species is transferred, without change of rank, to another genus or species (or placed under another generic or specific name for the same genus or species), the original subdivisional epithet must be retained or (if it has not been retained) must be re-established, unless one of the following obstacles exists: (1) that the resulting ternary combination has been previously and validly published for a subdivision based on a different type, even if that subdivision is of a different rank; (2) that there is an earlier validly published subdivisional epithet available.

When the epithet of a subdivision of a species, on transference to another species, has been applied erroneously in its new position to a different plant, the epithet must be retained for the plant on which the group was originally based.

Example: The variety *micranthum* Gren. & Godr. (*Fl. France*, i, 171: 1847) of *Helianthemum italicum* Pers., when transferred as a variety to *H. penicillatum* Thib., retains its varietal epithet, becoming *H. penicillatum* var. *micranthum* (Gren. & Godr.) Grosser (in Engl. *Pflanzenreich*, Heft 14, 115: 1903).

Section 10.—Choice of Names when two Groups of the same Rank are united, or in Fungi with a pleomorphic Life-cycle (Art. 56, 57, Rec. XXXIII–XXXV).

Art. 56. When two or more groups of the same rank are united the oldest legitimate name or (in species and their subdivisions)

the oldest legitimate epithet is retained. If the names or epithets are of the same date, the author who unites the groups has the right of choosing one of them. The author who first adopts one of them, definitely treating another as a synonym or referring it to a subordinate group, must be followed.

Recommendations:

XXXIII. Authors who have to choose between two generic names should note the following recommendations:—

1. Of two names of the same date to prefer the one which was first accompanied by the description of a species.
2. Of two names of the same date, both accompanied by descriptions of species, to prefer the one which, when the author made his choice, included the larger number of species.
3. In cases of equality from these various points of view to prefer the more correct and appropriate name.

XXXIV. When several genera are united as subgenera or sections under one generic name, the subdivision including the type of the generic name used may bear that name unaltered (e. g. *Anarrhinum* sect. *Anarrhinum*), or with a prefix (*Anthriscus* sect. *Eu-Anthriscus*), or a suffix (*Stachys* sect. *Stachyotypus*). These prefixes or suffixes lapse when the subdivisions are raised to generic rank.

XXXV. When several species are united as subspecies or varieties under one specific name, the subdivision which includes the type of the specific epithet used may be designated either by the same epithet unaltered (e. g. *Stachys recta* subsp. *recta*), or with a prefix (e. g. *Alchemilla alpina* subsp. *eu-alpina*), or by one of the customary epithets (*typicus, originarius, genuinus, verus, veridicus*, etc.), indicating that it is the type subdivision.

Art. 57. Among Fungi with a pleomorphic life-cycle the different successive states of the same species (*anamorphoses, status*) can bear only one generic and specific name (binary), that is the earliest which has been given, starting from Fries, *Systema*, or Fries, *Synopsis*, to the state containing the form which it has been agreed to call the perfect form, provided that the name is otherwise in conformity with the Rules. The perfect state is that which ends in the ascus stage in the *Ascomycetes*, in the basidium in the *Basidiomycetes*, in the teleutospore or its equivalent in the *Uredinales*, and in the spore in the *Ustilaginales*.

Generic and specific names given to other states have only a temporary value. They cannot replace a generic name already existing and applying to one or more species, any one of which contains the "perfect" form.

The nomenclature of Fungi which have not a pleomorphic life-cycle follows the ordinary rules.

Section 11.—Choice of Names when the Rank of a Group is changed.

Art. 58. When a tribe becomes a family, when a subgenus or section becomes a genus, when a subdivision of a species becomes a species, or when the reverse of these changes takes place, and in general when a group changes its rank, the earliest legitimate epithet given to the group in its new rank is valid, unless that

name or the resulting association or combination is a later homonym (see Art. 60, 61). E. g. the section *Campanopsis* R. Br. (*Prodr. Fl. Nov. Holl.* 561 : 1810) of the genus *Campanula* was first raised to generic rank by Schrader, and as a genus must be called *Wahlenbergia* Schrad. (*Cat. Hort. Goett.* : 1814), not *Campanopsis* (R. Br.) O. Kuntze (*Rev. Gen.* ii, 378 : 1891).

Recommendation XXXVI. 1. When a sub-tribe becomes a tribe, when a tribe becomes a subfamily, when a subfamily becomes a family, etc., or when the inverse changes occur, the root of the name should not be altered but only the termination (*-inae, -eae, -oideae, -aceae, -ineae, -ales,* etc.), unless the resulting name is rejected under Section 12 or the new name becomes a source of error or there is some other serious reason against it.

2. When a section or a subgenus becomes a genus, or the inverse changes occur, the original name should be retained unless it is rejected under Section 12.

3. When a subdivision of a species becomes a species, or the inverse change occurs, the original epithet should be retained unless the resulting combination is rejected under Section 12.

Section 12.—**Rejection of Names** (Art. 59–69, Rec. XXXVII).

Art. 59. A name or epithet must not be rejected, changed, or modified merely because it is badly chosen, or disagreeable, or because another is preferable or better known (see also Art. 69).

Art. 60. A name must be rejected if it is illegitimate (see Art. 2). The publication of an epithet in an illegitimate combination must not be taken into consideration for purposes of priority (see Art. 45).

A name is illegitimate in the following cases :—

(1) If it was superfluous when published, *i. e.* if there was a valid name (see Art. 16) for the group to which it was applied, with its particular circumscription, position and rank.

(2) If it is a binary or ternary name published in contravention of Art. 16, 50, 52 or 54, *i. e.* if its author did not adopt the earliest legitimate epithet available for the group with its particular circumscription, position, and rank.

(3) If it is a later homonym (see Art. 61) (except as regards Art. 54 and 55).

(4) If it is a generic name which must be rejected under Art. 67.

(5) If its specific epithet must be rejected under Art. 68.

Art. 61. A name of a taxonomic group is illegitimate and must be rejected if it is a *later homonym*, that is, if it duplicates a name previously and validly published for a group of the same rank based on a different type. Even if the earlier homonym is illegitimate, or is generally treated as a synonym on taxonomic grounds, the later homonym must be rejected.

Examples : The generic name *Tapeinanthus* Boiss. ex Benth. (1848), given to a genus of *Labiatae*, is a later homonym of *Tapeinanthus* Herb. (1837), a name previously and validly published for a genus of *Amaryllidaceae* ; *Tapeinanthus* Boiss. ex Benth. must, therefore, be rejected, as was done by Th. Durand (*Ind. Gen. Phan.* 703: 1888) who renamed

it *Thuspeinanta*.—The generic name *Amblyanthera* Mull. Arg. (1860) is a later homonym of the validly published generic name *Amblyanthera* Blume (1849), and must, therefore, be rejected, although *Amblyanthera* Blume is now reduced to *Osbeckia* L. (1753).—*Astragalus rhizanthus* Boiss. (*Diagn. Fl. Or.* ser. 1, ii, 83 : 1843) is a later homonym of the validly published name *Astragalus rhizanthus* Royle (*Illustr. Bot. Himal.* 200 : 1835), and it must, therefore, be rejected, as was done by Boissier, who renamed it *A. cariensis* (*Diagn.* ser. 1, ix, 57 : 1849).

Note.—Mere orthographic variants of the same name are treated as homonyms—see Art. 70.

Art. 62. A name of a taxonomic group must be rejected if, owing to its use with different meanings, it becomes a permanent source of confusion or error. A list of names to be abandoned for this reason (*Nomina ambigua*) will form Appendix IV.

Examples : The generic name *Alsine* L., being used by various authors for three genera of *Caryophyllaceae* (*Stellaria* L., *Spergularia* J. & C. Presl, *Minuartia* L.), has been a permanent source of confusion and error (see Sprague in 'Kew Bulletin,' 1920, 308).—The name *Rosa villosa* L., *Sp. Pl.* ed. 1, 491 (1753), is rejected, because it has been applied to several different species, and has become a source of confusion.

Art. 63. A name of a taxonomic group must be rejected when its application is uncertain (*nomen dubium*) : e. g. *Ervum soloniense* L. (*Cent. II. Pl.* 28 : 1756) is a name the application of which is uncertain ; it must, therefore, be rejected (see Schinz and Thell. in *Vierteljahrsschr. Nat. Ges. Zürich*, lviii, 71 : 1913).

Recommendation XXXVII. When the correct application of a *nomen dubium* has been established by subsequent investigation (of types etc), authors adopting it should, for purposes of precision, cite the name of the author who published the additional certifying evidence as well as that of the original author. It is also desirable to add the date of certification.

Art. 64. A name of a taxonomic group must be rejected if the characters of that group were derived from two or more entirely discordant elements, especially if those elements were erroneously supposed to form part of the same individual : e. g. the characters of the genus *Schrebera* L. (*Sp. Pl.* ed. 2, 1662 : 1763 ; *Gen. Pl.* ed. 6, 124 : 1764) were derived from the two genera *Cuscuta* and *Myrica* (parasite and host), see Retzius (*Obs.* vi, 15 : 1791). A list of names to be abandoned for this reason (*Nomina confusa*) will form Appendix VI.

Art. 65. A name or epithet of a taxonomic group must be rejected when it is based on a monstrosity.

Art. 66. The name of an order, suborder, family or subfamily, tribe or subtribe must be changed when it is taken from the name of a genus which is known not to belong to the group in question—e. g. if the genus *Portulaca* were excluded from the family now known as *Portulacaceae*, the residual group could no longer bear the name *Portulacaceae*, and would have to be renamed.

Art. 67. Names of genera are illegitimate in the following *special* cases and must be rejected :—

(1) When they are merely words not intended as names : e. g. *Anonymos* Walt. (*Fl. Carol.* 2, 4, 9, etc. : 1788) must be rejected as being a word applied to 28 different genera by Walter to indicate that they were without names.

(2) When they coincide with a technical term currently used in morphology unless they were accompanied, when originally published, by specific names in accordance with the binary method of Linnæus. On and after Jan. 1, 1912, all new generic names coinciding with such technical terms are unconditionally rejected.

(3) When they are unitary designations of species : e. g. Ehrhart (*Phytophylacium* : 1780 ; and *Beitr.* iv, 145–150 : 1798) proposed unitary names for various species known at that time under binary names : e. g. *Phaeocephalum* for *Schoenus fuscus*, and *Leptostachys* for *Carex leptostachys*. These names, which resemble generic names, should not be confused with them, and must be rejected, unless they have been published as generic names by a subsequent author.

(4) When they consist of two words, unless these words were from the first combined into one, or joined by a hyphen.

Art. 68. Specific epithets are illegitimate in the following cases and must be rejected :—

(1) When they are merely words not intended as names : e. g. *Viola* " *qualis* " Krocker (*Fl. Siles.* ii, 512 and 517 : 1790) ; *Atriplex* " *nova* " Winterl (in *Ind. Hort. Bot. Univ. Pest.* fol. A 8, recto et verso : 1788), the word " *nova* " being here used in connection with four different species of *Atriplex*.

(2) When they are merely ordinal adjectives being used for enumeration.

(3) When they exactly repeat the generic name with or without the addition of a transcribed symbol.

(4) When they were published in works in which the Linnean system of binary nomenclature for species was not consistently employed.

Art. 69. In cases foreseen in Art. 60–68 the name or epithet to be rejected is replaced by the oldest legitimate name, or (in a combination) by the oldest legitimate epithet. If none exists, a new name or epithet must be chosen. Where a new epithet is required, an author may, if he wishes, adopt an epithet previously given to the group in an illegitimate combination, if there is no obstacle to its employment in the new position or sense.

Section 13.—**Orthography of Names** (Art. 70, 71, Rec. XXXVIII–XLIV).

Art. 70. The original spelling of a name or epithet must be retained, except in the case of a typographic error, or of a clearly unintentional orthographic error. When the difference between two generic names lies in the termination, these names must be regarded as distinct, even though differing by one letter only. This does not apply to mere orthographic variants of the same name.

Note 1. The words " original spelling " in this Article mean the spelling employed when the name was validly published.

2. The use of a wrong connecting vowel or vowels (or the omission of a connecting vowel in a specific epithet, or in that of a subdivision of a species) is treated as an unintentional orthographic error which may be corrected (see Rec. XLIV).

3. In deciding whether two or more slightly different names should be treated as distinct or as orthographical variants, the essential consideration is whether they may be confused with one another or not : if there is serious risk of confusion, they should be treated as orthographic variants. Doubtful cases should be referred to the Executive Committee.

4. Specific and other epithets of Greek origin differing merely by having Greek and Latin terminations respectively are orthographic variants. Epithets bearing the same meaning and differing only slightly in form are (considered as) orthographic variants. The genitive and adjectival forms of a personal name are, however, treated as different epithets (e. g. *Lysimachia Hemsleyana* and *L. Hemsleyi*).

Recommendations :

XXXVIII. When a new name is derived from a Greek word containing the *spiritus asper* (rough breathing), this should be transcribed as the letter *h*.

XXXIX. When a new name for a genus, subgenus or section is taken from the name of a person, it should be formed in the following manner :—

(*a*) When the name of the person ends in a vowel the letter *a* is added (thus *Bouteloua* after Boutelou ; *Ottoa* after Otto ; *Sloanea* after Sloane), except when the name already ends in *a*, when *ea* is added (e. g. *Collaea* after Colla).

(*b*) When the name of the person ends in a consonant, the letters *ia* are added (e. g. *Magnusia* after Magnus, *Ramondia* after Ramond), except when the name ends in *er*, when *a* is added (e. g. *Kernera* after Kerner).

(*c*) The syllables which are not modified by these endings retain their original spelling, even with the consonants *k* and *w* or with groupings of vowels which were not used in classical Latin. Letters foreign to botanical Latin should be transcribed, and diacritic signs suppressed. The Germanic ä, ö, ü become *ae, oe, ue* ; the French é, è, ê become generally *e*. In works in which diphthongs are not represented by special type, the diaeresis sign should be used where required, e. g. *Cephaëlis*, not *Cephaelis*.

(*d*) Names may be accompanied by a prefix or a suffix, or modified by anagram or abbreviation. In these cases they count as different words from the original name.

Examples: *Durvillea* and *Urvillea*; *Lapeyrousea* and *Peyrousea*; *Englera*, *Englerastrum* and *Englerella*; *Bouchea* and *Ubochea*; *Gerardia* and *Graderia*.

XL. When a new specific or other epithet is taken from the name of a man, it should be formed in the following manner:—

(*a*) When the name of the person ends in a vowel, the letter *i* is added (thus *Glazioui* from Glaziou, *Bureaui* from Bureau), except when the name ends in *a*, when *e* is added (thus *Balansae* from Balansa).

(*b*) When the name ends in a consonant, the letters *ii* are added (thus *Magnusii* from Magnus, *Ramondii* from Ramond), except when the name ends in *-er*, when *i* is added (thus *Kerneri* from Kerner).

(*c*) The syllables which are not modified by these endings retain their original spelling, even with the consonants *k* or *w* or with groupings of vowels which were not used in classical Latin. Letters foreign to botanical Latin should be transcribed and diacritic signs suppressed. The Germanic ä, ö, ü become *ae*, *oe*, *ue*, the French é, è, ê become generally *e*. The diaeresis sign should be used where required.

(*d*) When epithets taken from the name of a person have an adjectival form they are formed in a similar way (e. g. *Geranium Robertianum*, *Verbena Hasslerana*).

XLI. The same provisions apply to epithets formed from the names of women. When these have a substantival form they are given a feminine termination (e. g. *Cypripedium Hookerae*, *Rosa Beatricis*, *Scabiosa Olgae*, *Omphalodes Luciliae*).

XLII. New specific (or other) epithets should be written in conformity with the original spelling of the words from which they are derived and in accordance with the rules of Latin and latinization.

Examples: *silvestris* (not *sylvestris*), *sinensis* (not *chinensis*).

XLIII. Specific (or other) epithets should be written with a small initial letter, except those which are derived from names of persons (substantives or adjectives) or are taken from generic names (substantives or adjectives).

XLIV. In the formation of specific (or other) epithets composed of two or several roots taken from Latin or Greek, the vowel placed between the two roots becomes a connecting vowel, in Latin *i*, in Greek *o*; thus *menthifolia*, *salviifolia*, not *menthaefolia*, *salviaefolia*. When the second root begins with a vowel and euphony requires, the connecting vowel should be eliminated (e. g. *lepidantha*). The connecting vowels *ae* should be retained only where this is required for etymological reasons (e. g. *caricaeformis* from *Carica*, in order to avoid confusion with *cariciformis* from *Carex*). In certain compounds of Greek words no connecting vowel is required, e. g. *brachycarpus* and *glycyphyllus*.

Art. 71. When the spelling of a generic name differs in Linnæus' *Species Plantarum*, ed. 1, and *Genera Plantarum*, ed. 5, the correct spelling is determined by the following regulations:—

(1) If Linnæus subsequently to 1753–54 consistently adopted one of the spellings, that spelling is accepted, e. g. *Thuja* (not *Thuya*).

(2) If Linnæus did not do so, then the spelling which is more correct philologically is accepted, e. g. *Agrostemma* (not *Agrostema*).

(3) If the two spellings are equally correct philologically, and there is a great preponderance of usage in favour of one of them, that one is accepted, e. g. *Rhododendron* (not *Rhododendrum*).

(4) If the two spellings are equally correct philologically and there is not a great preponderance of usage in favour of one of them, then the spelling that is in accordance or more nearly in accordance with the Recommendations is accepted, e. g. *Ludwigia* (not *Ludvigia*), *Ortegia* (not *Ortega*).

Section 14.—Gender of Generic Names.

Art. 72. The gender of generic names is governed by the following regulations :—

(1) A Greek or Latin word adopted as a generic name retains the gender assigned to it by its author : e. g. *Orchis* (f.), *Stachys* (f.).

(2) Generic names which are modern compounds formed from two or more Greek or Latin words take the gender of the last. If the ending is altered, however, the gender will follow it.

Examples of names formed from Greek* words: The generic name *Andropogon* L. was treated by Linnæus as neuter, but it, like all other modern compounds in which the Greek masculine word *pogon* is the final element (e. g. *Centropogon, Cymbopogon, Bystropogon*), is now treated as masculine. Similarly all modern compounds ending in *-codon, -myces, -odon, -panax, -stemon* and other masculine words are masculine. The generic name *Dendromecon* Benth., *Eomecon* Hance and *Hesperomecon* E. L. Greene are treated as feminine, because they end in the Greek feminine word *mecon*, poppy : the fact that Bentham and E. L. Greene respectively ascribed the neuter gender to the names *Dendromecon* and *Hesperomecon* is immaterial. Similarly all modern compounds ending in *-achne, -carpha, -cephala, -chlamys, -daphne* and other feminine words are treated as feminine.

The generic names *Aceras* R. Br., *Aegiceras* Gaertn. and *Xanthoceras* Bunge are neuter because they end in the Greek neuter word *ceras* ; the fact that Robert Brown and Bunge respectively made *Aceras* and *Xanthoceras* feminine is immaterial. Similarly all modern compounds ending in *-dendron, -nema, -stigma, -stoma* and other neuter words are neuter. Names ending in *-anthos* (or *anthus*) and those in *-chilos* (or *-chilus*) ought strictly speaking to be neuter, since that is the gender of the Greek words *anthos* and *cheilos*. These names, however, have been with very few exceptions treated as masculine, hence it is agreed to assign that gender to them. Similarly those ending in *-gaster*, which should strictly speaking be feminine, are treated as masculine in accordance with botanical custom.

Examples of compound generic names where the termination of the last word is altered : *Hymenocarpus, Dipterocarpus* and all other modern compounds ending in the Greek masculine *carpos* (or *carpus*) are masculine. Those in *-carpa* or *-carpaea*, however, are feminine, e. g. *Callicarpa* and *Polycarpaea* ; and those in *-carpon, -carpum* or *-carpium* are neuter, e. g. *Polycarpon, Ormocarpum* and *Pisocarpium*.

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* Examples of names formed from Latin words are not given, as these offer few difficulties.

(3) Arbitrarily formed generic names or vernacular names used as generic names take the gender assigned to them by their authors. Where the original author has failed to indicate the gender, the next subsequent author has the right of choice.

Examples : *Taonabo* Aubl. (*Hist. Pl. Guiane*, i, 569 : 1775) is feminine ; Aublet's two species were *T. dentata* and *T. punctata*.—*Agati* Adans. (*Fam.* ii, 326 : 1763) was published without indication of gender : the feminine gender was assigned to it by Desvaux (*Journ. Bot.* i, 120 : 1813), who was the first subsequent author to adopt the name, and his choice is decisive.

Section 15.—**Various Recommendations** (Rec. XLV–L).

XLV. When writing in modern languages botanists should use Latin scientific names or those immediately derived from them, in preference to names of another kind or origin (popular names). They should avoid the use of the latter unless these are very clear and in common use.

XLVI. Every friend of science should oppose the introduction into a modern language of names of plants which are not already there, unless they are derived from Latin botanical names by means of some slight alteration.

XLVII. Only the metric system should be used in botany for reckoning weights and measures. The foot, inch, line, pound, ounce, etc. should be rigorously excluded from scientific language.

Altitude, depth, rapidity, etc. should be measured in metres. Fathoms, knots, miles, etc. are terms which should disappear from scientific language.

XLVIII. Very minute dimensions should be reckoned in μ (micro-millimetres, microns, or thousandths of a millimetre) and not in fractions of millimetres or of lines, etc. ; fractions encumbered with ciphers and commas easily give rise to mistakes.

XLIX. Authors should indicate clearly and precisely the scale of the figures which they publish.

L. Temperatures should be expressed in degrees of the centigrade thermometer of Celsius.

Chapter IV.—Interpretation and Modification of the Rules (Art. 73, 74).

Art. 73. A small permanent International Executive Committee is established with functions including the following :—

(1) Interpreting the Rules in doubtful cases, and issuing considered " Opinions " on the basis of the evidence submitted.

(2) Considering *Nomina conservanda*, *Nomina ambigua*, *Nomina dubia* and *Nomina confusa*, and making recommendations thereon to the next International Botanical Congress.

(3) Considering all proposals for the modification of the Rules and reporting thereon to the next Congress.

(4) Reporting on the effects of modifications of the Rules accepted at the preceding Congress.

Art. 74. These Rules can be modified only by competent persons at an International Botanical Congress convened for the express purpose. Modifications accepted at one Congress remain on trial until the next Congress, at which they will receive sanction unless undesirable consequences, reported to the Executive Committee, show need for further amendment or rejection.

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*Appendix I.—Regulations for determining types.
*Appendix II.—Nomina conservanda familiarum.
Appendix III.—Nomina generica conservanda.
*Appendix IV.—Nomina ambigua.
*Appendix V.—Nomina dubia.
*Appendix VI.—Nomina confusa.
*Appendix VII.—Representative Botanical Institutions recognized under Art. 34.
Appendix VIII.—Nomenclature of Garden Plants.

* Drafts of these Appendixes will be prepared for submission to the next International Congress.