

TAUTONYMS AND CONFUSION IN THE INTERNATIONAL CODE

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Summary

Under the present provisions of Articles 19, 22, and 26 of the International Code of Botanical Nomenclature, various taxa between the ranks of family and genus and genus and species and below the rank of species can have two equally correct names without any change whatever in circumscription, position, or rank. This circumstance, which is in direct contradiction to Principle IV and Article 11 of the Code, has come about through too broad extension of the tautonymic principle whereby the names of various taxa which include the nomenclatural type of the next higher taxon must be based either on the same stem as that name or must repeat the name or epithet of the next higher taxon unaltered. This principle works excellently for the names of taxa which include the nomenclatural types of families, genera, and species, respectively, but when extended to all taxa between the ranks of family and genus, to all subgenera and sections, and to all subspecific categories, it results in the possibility for two correct names for some taxa (without change in circumscription, position, or rank), depending solely upon whether or not the next higher rank is used in the taxonomic classification. Since the Code clearly specifies that a taxon can have only one correct name in a given circumscription, position, and rank, proposals are made to restrict the tautonymic principle to the taxa which include the nomenclatural types of families, genera, and species, thereby eliminating this conflict within the Code.

One of the six principles upon which the International Code of Botanical Nomenclature is based is that "each taxonomic group with a particular circumscription, position, and rank can bear only one correct name, the earliest that is in accordance with the Rules, except in specified cases" (Principle IV, ICBN, 1966 ed., p. 16). This altogether rational and desirable principle is reaffirmed in Article 11 of the Rules. Yet, as the result of much too sweeping changes introduced first at the specific level (Stockholm, 1950) and then extended first to the generic (Paris, 1964) and finally to the familial level (Montreal, 1959), the provisions of Articles 19, 22, and 26 of the present International Code (1966) permit the possibility for various taxa between the ranks of family and genus, genus and species, and below the rank of species to bear not *one*, but *two*, correct names without any change whatever in circumscription, position, or rank! This contradictory and unwholesome condition represents a distinct retrogression in nomenclatural practice which should not be allowed to persist. It is toward the elimination of this extraordinary conflict within the Code and the confusion which can result from it that modifications of Articles 19, 22, 26, and two others affected by them are proposed here.

The pertinent portions of Articles 19, 22, and 26 are quoted below:

Art. 19, paragraph 3:

"The name of any taxon of a rank below family and above genus which includes the type of the next higher taxon must be based on the same stem as the name of the next higher taxon, but without citation of an author's name (see Art. 46)."

Art. 22, paragraphs 1 and 2:

"The subgenus or section including the type species of the correct name of the genus to which it is assigned bears that name unaltered as its epithet, but without citation of an author's name (see Art. 46).

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“Similarly, a section including the type species of any subgenus must bear as its epithet the correct epithet of the subgenus.”

Art. 26:

“In the name of an infraspecific taxon which includes the nomenclatural type of the epithet of the next higher taxon, the epithet of this higher taxon must be repeated unaltered but without citation of an author’s name (see Art. 46). This epithet can no longer be used if that of the next higher taxon is changed.”

The general principle embodied in all three articles is the same: the names of various taxa which include the nomenclatural type of the *next higher* taxon must be based upon the same stem as that name or must repeat the name or epithet unaltered. One useful and desirable consequence of this principle is that the subfamily, tribe, and subtribe including the nomenclatural type of a family will be easily recognizable, as will the subgenus or section including that of a genus; and so will the subspecies, variety, and form which include the nomenclatural type of a species. Thus, the subfamily, tribe, and subtribe which include *Aster* L., type genus of the family Asteraceae (Compositae), will be named respectively Asteroideae, Astereae, and Asterinae; the subgenus and section which include the type species of *Malpighia* L. (*M. glabra* L.) are named *Malpighia* subgenus *Malpighia* and *Malpighia* section *Malpighia*, respectively; and the subspecies and variety of *Pteridium aquilinum* (L.) Kuhn which include the nomenclatural type of that species will be subspecies *aquilinum* and var. *aquilinum*, respectively. So much is helpful, and with this one can find no quarrel.

The problem arises, however, in the extreme breadth given to the tautonymic principle in Articles 19, 22, and 26. Under the provisions of these articles this principle applies not only to the names of the subgenus, tribe, and subtribe which include the type genus of the family name, but to those of all subgenera, tribes, and subtribes within that family; not only to the names of the subgenus and section which include the type species of a generic name, but to the names of all subgenera and sections within that genus; and not only to the names of the subspecies, variety, and form which include the nomenclatural type of the species, but to those of all subspecies, varieties, and forms within that species. Under these circumstances some tribes and subtribes can have more than one correct name, depending upon whether the taxonomic classification involves subfamilies; some sections can have more than one correct name, depending upon whether subgenera are used in the taxonomic treatment of the genus; and the possibility exists for some varieties and forms to have more than one correct name, depending upon whether the taxonomic classification within the species involves the use of subspecies. In each instance the circumscription, position, and rank remain the same, but the taxon can have more than one correct name, depending solely upon whether the next higher rank is used in the classification of the group!

It should be remarked further that the name of a taxon is merely a convenient way of referring to that unit and that it is neither intended to nor can it reveal all of the classification adopted. This is particularly evident from Articles 21 and 24 of the Code which state, “The name of a subdivision of a genus is a combination of a generic name and a subdivisional epithet connected by a term (subgenus, section, series, etc.) denoting its rank,” and “The name of an infraspecific taxon is a combination of the name of a species and an infraspecific epithet connected by a term denoting its rank.” Hence the subgeneric name is not a part of the name of a section, nor is a subspecific name a part of the name of a variety. However, in the interpretation of Articles 19, 22, and 26, taxonomy is confused with nomenclature both in this respect and in the more serious one of allowing two correct names for the same taxon depending solely upon the use of the next higher rank in the classification adopted.

A few examples of the operation of Articles 19, 22, and 26 follow.

Taxa between the ranks of family and genus (Art. 19)

In the family Ericaceae the oldest legitimate name for the tribe which includes *Rhododendron* L. is Rhodoreae D. Don (type genus, *Rhodora* L.). However, if the subfamily Rhododendroideae Endl. (type genus, *Rhododendron* L.) is recognized taxonomically, Rhodoreae is no longer the correct name, and the name of this same tribe in precisely the same circumscription, position, and rank becomes Rhododendreae (cited without an author). (Cf. C. E. Wood, Jr., Jour. Arnold Arb. 42: 18. Footnote 2. 1961).

In the family Asteraceae (Compositae), the oldest legitimate name for the tribe which includes genera with only ligulate flowers is Lactuceae Cassini, and under Article 19 the correct name for the subtribe which includes the type genus (*Lactuca* L.) is Lactucinae (cited without an author), although the oldest legitimate name for this same subtribe is Hyoseridinae Lessing (type genus, *Hyoseris* L.). However, if the taxonomic decision is made to divide the family into two subfamilies, the correct names of which are Asteroideae and Cichorioideae Kitamura, the correct names for the tribe and subtribe which include *Lactuca* are then Cichorieae and Cichoriinae, respectively. Thus, precisely the same tribe and subtribe can have two equally correct names, depending solely upon the decision either to divide or not to divide the family into two subfamilies.

Subgenera and sections (Art. 22)

The correct name for one section of *Phyllanthus* L. is *Phyllanthus* sect. *Anisonema* (A. Juss.) Griseb. (type species, *P. reticulatus* Poir.), unless the decision is made to recognize subgenus *Kirganelia* (Juss.) Webster. In that event, section *Anisonema*, which includes the type species of subgenus *Kirganelia* (*P. casticum* Willem.), becomes (without any change in circumscription, position, or rank) *Phyllanthus* section *Kirganelia* (cited without an author). (Cf. G. L. Webster, Jour. Arnold Arb. 41: 279, 281. 1960, for this example and two others involving subgeneric and sectional names in *Phyllanthus*).

If the taxonomic decision is made to recognize *Trichomanes* L. subgenus *Pachychaetum* Presl as distinct from *Trichomanes* subgenus *Trichomanes*, the correct name of the section which includes the type species of subgenus *Pachychaetum* (*T. rigidum* Swartz) is *Trichomanes* section *Pachychaetum* (cited without an author). If, however, subgenus *Pachychaetum* is not used in the classification of the genus, the correct name for the same section (with precisely the same circumscription) is the oldest sectional name, *Trichomanes* section *Selenodesmium* Prantl, the type species of which is also *T. rigidum* Swartz. (Cf. C. V. Morton, Contr. U.S. Natl. Herb. 38: 188, 189. 1968. In the same paper see also *Hymenophyllum* L., which furnishes a similar example).

Subspecies, varieties, and forms (Art. 26)

Although the provisions of Article 26 make possible two correct names for varietas and forma in a way similar to the above, we have not found a good illustrative example. This lack of confusion is apparently related to two circumstances: (1) the relatively few species which are taxonomically complex enough to require the use of both subspecies and varietas, and (2) the general practice of recognizing either subspecies or varietas as a taxonomic unit with the transfer of an epithet from one rank to the other with the result that both subspecific and varietal names have the same epithet. For example, the combination *Pteridium aquilinum* (L.) Kuhn var. *caudatum* (L.) Sadebeck was made in 1897, and the combination *P. aquilinum* (L.) Kuhn subsp.

caudatum (L.) Bonap. was made in 1915. Both combinations are based on *Pteris caudata* L., and have, of course, the same nomenclatural type. A slightly different example is found in *Stachys palustris* L. Epling (1934) recognized an American subspecies, the correct name of which is *S. palustris* subsp. *pilosa* (Nutt.) Epling, based on *Stachys pilosa* Nutt. His taxonomic view of the species did not require the use of varieties. Fernald (1943), however, divided subspecies *pilosa* into five varieties, for one of which he made the combination *S. palustris* var. *pilosa* (Nutt.) Fern., there being no epithet available at the rank of varieties. In both of these examples the tautonymic principle prescribed by Article 26 was already in operation, and there is only one correct name for *Pteridium aquilinum* var. *caudatum* and only one correct name for *Stachys palustris* var. *pilosa*, regardless of whether the rank of subspecies is intercalated between varieties and species. The important point about Article 26, however, is that the possibility exists for two correct names for a variety or form without change in circumscription, position, or rank, and this possibility for contradiction and confusion should be eliminated.

There is, moreover, an additional possibility, although a rather minor one, for confusion which can enter in connection with the citation of authors. In Fernald's taxonomic treatment of *Stachys palustris*, variety *pilosa* must be cited without an author, for it has the same type as subspecies *pilosa* (Nutt.) Epling. However, if one recognizes only the rank of variety in the infraspecific classification of this species, the correct name of this variety is *S. palustris* var. *pilosa* (Nutt.) Fern., the authors being cited in this instance. The same is true of *Pteridium aquilinum* (L.) Kuhn var. *caudatum*, which, in Tryon's classification, is one of the varieties of *P. aquilinum* subsp. *caudatum* (L.) Bonap. and which is consequently to be cited without an author. In the classification of another taxonomist who does not use subspecies in the infraspecific classification of *P. aquilinum*, the name of this same variety is *P. aquilinum* var. *caudatum* (L.) Sadebeck, the authors being cited. Since Article 24 prescribes that "the name of an infraspecific taxon is a combination of the name of a species and an epithet connected by a term denoting its rank," the name of an infraspecific taxon is a trinomial which does not necessarily reflect all of the classification within the species. If one follows Tryon's classification and writes *Pteridium aquilinum* (L.) Kuhn var. *caudatum* (without an author), a subspecies is implied, but there is no bibliographic clue to the origin of the varietal epithet, for no authors are cited, and, although the subspecific epithet is repeated as the varietal one, there can be no indication of the authors of either the subspecific epithet or the subspecific combination. It seems to us that this is a source of confusion and imprecision which is very different from the situation with *Pteridium aquilinum* (L.) Kuhn subsp. *aquilinum* and *P. aquilinum* (L.) Kuhn var. *aquilinum* in which the origin of the subspecific and varietal epithets is perfectly evident. The same problem will be equally apparent in the examples given above under Article 22.

Proposed changes

From our experience with these and other similar instances it is evident that changes are needed to restrict the tautonymic provisions of Articles 19, 22, and 26 to the taxa which include the nomenclatural types of the family, genus and species, respectively. Accordingly, the three articles are presented below in a form which will still retain the tautonymic principle in part but which will eliminate the possibility that the application of the Rules may result in two correct names for the same taxon in the same circumscription, position, and rank. For the sake of the internal consistency of the Code we have attempted to make the three articles as nearly parallel as possible, since the same principle applies throughout. The examples have been changed accordingly.

In order to retain wherever possible the desirable tautonymic effects of these three articles as they now stand in the Code, we are further proposing a recommendation to be added to each article to encourage the repetition of names or epithets in taxa other than those which include the types of the names of families, genera, and species. These recommendations will replace, at least in part, the too broad provisions of the present Articles 19, 22, and 26 but will not come into conflict with either Principle IV or Article 11 of the Rules.

Proposal 181 for the modification of Article 19, paragraph 3, and the examples, these to read:

“The name of any taxon of a rank below family and above genus which includes the type genus of the correct name of the family to which it is assigned must be based on the stem of the name of that genus, but without the citation of an author’s name (see Art. 46). This provision applies only to taxa which include the type of the correct name of the family.

“Examples: The subfamily containing the type genus of the family Ericaceae (*Erica* L.) must be called subfamily Ericoideae, and the tribe containing this genus must be called tribe Ericae. However, the correct name of the tribe containing the type genus of the subfamily Rhododendroideae Endl. (*Rhododendron* L.) is Rhodoreae G. Don (the oldest legitimate name), and not Rhododendreae.

“The subfamily of the family Asteraceae (nom. alt., Compositae) containing *Aster* L., the type genus of the family name, must be called subfamily Asteroideae, and the tribe and subtribe containing *Aster* must be called Astereae and Asterinae, respectively. However, the correct name of the tribe containing the type genus of subfamily Cichorioideae Kitamura (*Cichorium* L.) is Lactuceae Cass., not Cichorieae, while that of the subtribe containing *Cichorium* is Hyoseridinae Less., not Cichoriinae.”

Proposal 182 for a new recommendation (19A) to be added to Article 19, as changed by proposal 181.

“If a legitimate name is not available for a taxon of a rank below family and above genus which includes the type genus of the name of another higher or lower taxon (e.g., subfamily, tribe, or subtribe), but not that of the family to which it is assigned, the new name of that taxon should be based on the same stem as the name of the higher or lower taxon and the same type should be chosen.

“Examples: Three tribes of the family Ericaceae, none of which includes the nomenclatural type of the family (*Erica* L.) are Pyroleae D. Don, Monotropeae D. Don, and Vaccinieae D. Don. The names of the later-described subfamilies Pyroloideae A. Gray, Monotropeoideae A. Gray, and Vaccinioideae Endl. have the same type genera as the respective tribal names and are based on the same stems.”

Proposal 183 for the modification of Article 22, paragraphs 1, 2, and 3, these to read:

“The subgenus or section (but not subsection or a lower subdivision) including the type species of the correct name of the genus to which it is assigned bears that name unaltered as its epithet, but without citation of an author’s name (see Art. 46).

“This provision does not apply to sections which include the type species of the names of other subgenera of the genus.

“Valid publication of a name for a subgenus or section which does not include the nomenclatural type of the genus automatically establishes the name of another taxon of the same rank which has as its nomenclatural type the type species of the genus and which bears as its epithet the generic name unaltered.

“Examples: The subgenus of *Malpighia* L. which contains the lectotype of the generic name (*M. glabra* L.) must be called *Malpighia* subg. *Malpighia*, and not *Malpighia* subg. *Homoioisty-*

lis Niedenzu. Similarly, the section containing the lectotype of the generic name must be called *Malpighia* sect. *Malpighia*, and not *Malpighia* sect. *Apyrae* DC.

“However, the section of the genus *Phyllanthus* containing the type species of subgenus *Kirganelia* (Juss.) Webster (*P. casticum* Willem.) must be called *Phyllanthus* sect. *Anisonema* (A. Juss.) Criseb., the oldest legitimate name for that section, and not *Phyllanthus* sect. *Kirganelia*.”

Proposal 184 for a new recommendation (22A) to be added to Article 22, as changed by proposal 183:

“If a legitimate epithet is not available for the name of either a subgenus or section of a genus which does not include the type species of the name of that genus, the new epithet should repeat the epithet of the correct name of the subgenus or section which includes the nomenclatural type of the subgenus or section for which a new epithet is needed.

“Example: Instead of using a new name at the subgeneric level, Brizicky raised *Rhamnus* L. section *Pseudofrangula* Grubov to the rank of subgenus as *Rhamnus* subgenus *Pseudofrangula* (Grubov) Brizicky. The type species of both names is the same, *R. alnifolia* L’Her.”

Proposal 185 for modification of paragraph 2 of Article 25, this paragraph to read:

“Valid publication of a name of a subordinate taxon which does not include the nomenclatural type of the species automatically establishes the name of a second taxon of the same rank which has as its type the nomenclatural type of the species (see Art. 26) and bears the same epithet.”

The changes here consist of replacing “type of the higher taxon” with “type of the species” to make this article consistent with the changes proposed in Article 26.

Proposal 186 for the modification of Article 26, this article to read:

“In the name of an infraspecific taxon which includes the nomenclatural type of the species, the epithet of the species must be repeated unaltered but without citation of an author’s name (see Art. 46). If the epithet of the species is changed, the names of the infraspecific taxa including the nomenclatural type of the species must be changed accordingly. This provision applies only to taxa which include the nomenclatural type of the species.

“Examples: The combination *Lobelia spicata* Lam. var. *originalis* McVaugh, which includes the type of *L. spicata* Lam., must be replaced by *L. spicata* Lam. var. *spicata*.

“Because under *Lobelia syphilitica* L. there is described var. *ludoviciana* A. DC., one must write *Lobelia syphilitica* var. *syphilitica* if only that part of *L. syphilitica* L. which includes the type is meant.”

Proposal 187 for a new recommendation (26A) to be added to Article 26, as changed by proposal 186:

“If a legitimate epithet is not available for the correct name of a subspecies or varietas which does not include the nomenclatural type of the species to which it is assigned, the new epithet should be chosen to repeat the epithet of the correct name of the subspecies or varietas which includes the nomenclatural type of the taxon for which a new epithet is needed. The epithet of a subspecies or varietas should be chosen, if needed, as that for a taxon lower than varietas in rank, but not the reverse.

“Examples: Fernald treated *Stachys palustris* L. subsp. *pilosa* (Nutt.) Epling (1934) as composed of five varieties, for one of which (that including the nomenclatural type of subsp. *pilosa*) he made the combination *S. palustris* L. var. *pilosa* (Nutt.) Fern. (1943), there being no legitimate varietal epithet available.

“According to Tryon, the species *Pteridium aquilinum* (L.) Kuhn is composed of a number

of varieties grouped under two subspecies. The epithet of the correct name of one of these varieties, *P. aquilinum* var. *caudatum* (L.) Sadebeck (1897), is the same as the epithet of the correct name of the subspecies to which it is assigned, *P. aquilinum* subsp. *caudatum* (L.) Bonap. (1915), and both taxa have the same nomenclatural type.”

Proposal 188 for the modification of Article 46, this article to read:

“For the indication of the name of a taxon to be accurate and complete, and in order that the date may be readily verified, it is necessary to cite the name(s) of the author(s) who first validly published the name concerned unless the provisions of Arts. 19, 22, or 26 (but excepting Recs. 19A, 22A, and 26A) apply.”

The change proposed here is the addition of “(but excepting Recs. 19A, 22A, and 26A)” to make it absolutely clear that unlike the names dealt with in Articles 19, 22, and 26, those to which recommendations 19A, 22A, and 26A apply are to be cited with the author(s).