PROPOSALS TO AMEND THE CODE


Two proposals on botanical compound names and epithets

Summary

A common misunderstanding in the composition of botanical Latin compounds is discussed, and the actual rules for compound Latin and Greek words are exposed.

In the different editions of the International Code of Botanical Nomenclature, statements on botanical compounds appeared that are contradictory to the present 73G.1 Recomendation, that they “should be formed, as far as practicable, in accordance with classical usage.” In fact, Greek rules for compound words have been applied also to Latin compounds; and besides, such different linguistic concepts as composition and derivation were confused, both in the different editions of the Code, and by authors who treated the composition of scientific compound names.

This, of course, led to the coinage of a lot of Latin botanical barbarisms. Anyway, the worst of the problem is that, as the Code’s rules have to be taken as standards, the epithets of hundreds of botanical names correctly spelled by such botanical classics as Jacquin, Mutis, Ruiz and Pavon, Humboldt, De Candolle, and Endlicher, have to be “corrected” in accordance with the modern statements of the Code.

All the problems can be stated as follows: In a Latin compound, (a) do we have to use the first element’s stem -as in Greek-, or (b) do we have to use the genitive singular form -as the classical botanists did, following the classical Latin usage?

In the International Code of Botanical Nomenclature, the first position has been established; but in the botanical classics, the second one is the most frequent—with some hesitations. So, this second position has to be preferred, and taken as a standard.

Actually, the practical difference between both positions arises only with Latin compounds belonging to the first declension, which should be, according to position (a), for example, salviifolia, and according to position (b), salviaefolia.

Other botanical forms, as: glandulifer, squamiger, spinifex, carinifex, terricola, herbivorus, herbicida, plantigradus. . ., in which the first elements belong to the first declension, are no exceptions to the previous (b) position. In fact, they are not compounds, but derivatives, because the ending forms are not nouns (as in compound words), but suffixes.

As a practical result of the previous considerations, I propose the following changes in the International Code of Botanical Nomenclature (1988).

(7) Proposal to replace Art. 73.8, Ex. 11 and 12, as follows:

“Ex. 11. Verbena urticifolia L., Anemone malvifolia L., and Aspalathus ericefolia L., are to be cited as: Verbena urticaefolia L., Anemone malvaefolia L., and Aspalathus ericaefolia L., because the genitive singular ending of urtica, malva, erica, is: urticae, malvae, ericae. Linnaeus himself has: Ipomoea hepaticaefolia, Cassia chamaecrista, and Ramunculus rufaeolius.”

“Ex. 12. Tococa lancifolia Spruce ex Triana is to be cited as T. lanceifolia Spruce ex Triana, because the first element’s stem is lance-, not lunci-, by analogy with Croton castaneifolius L., and other universally accepted epithets as: cereiformis, cuneifolius.”
Let me, please justify the proposed change to Ex. 11.

In the classical Latin grammars, no attention was paid to such generic and specific compounds as the ones used in modern botanical Latin. In fact, Latin, contrary to Greek, was reluctant as to word composition. Anyway, we can cite a number of well established classical Latin compounds, as: terrae-motus, aquae-ductus, iuris-prudentia, legis-latura, trium-viratus, suicidium, senatus-consultum, fidei-commis-sum, and others. Look at them keenly, and you will find out that the first element is put in its full genitive singular form.

Linnaeus, in his Genera Plantarum was not completely sure if the genitive singular form had to be used, or the first element's stem plus a connecting -i-. He has both: Centaurea erucifolia, and Phalaris erueaeo-folia, Arum sagittaefolium, and Sagittaria sagittifolia. But, if we check his uses numerically, we will find that he preferred the genitive form. Later botanical authors as Jacquin, Mutis, Kunth, Humboldt, De Candolle, Endlicher, consistently preferred the -ae ending.

Regarding the proposed change to Ex. 12, I observe: Jacquin has Solanum lanceifolium, Mutis has Cinchona lanceifolia, Humboldt has Piper lanceaeo-folium, De Candolle has Anemopaegma lanceaeo-folium. In these examples, although the first element's -ae ending is grammatically correct, Jacquin's and Mutis' spellings are to be preferred, for euphonic reasons.

By analogy with the above, De Candolle's Cacalia napaeo-folia and Senecio napaeo-folius (DC.) Schultz-Bip. have to be cited as: Cacalia napaeo-folia DC., and Senecio napaeo-folius (DC.) Schultz-Bip., because the generic name referred to, is Napaea, not Napea.

(8) Proposal to replace Recomendation 73G.1 with the following:

"Rec. 73G.1. Composition and Derivation are the two linguistic procedures used to coin new words. A compound or derived name or an epithet which combines two or more Latin or Greek elements, should be formed, as far as practicable, in accordance with classical usage (see Art. 73.8).

(a) Composition is the linguistic procedure through which a new word is obtained combining two or more linguistic elements that can be used independently in the language (ex.: elaphos, deer, and glossa, tongue: elapho-glossum). The composition may be made with Greek and Latin words in two ways: taking the first element in its genitive singular case, or using only its stem, i.e., what of the word remains when the genitive singular inflexion is removed. The first procedure is unusual in Greek, although a number of cases can be cited (ex.: Aegos-potamus, Bos-phorus, Dios-pyros, Myos-otis, Staphile(s)-phorus, Coryne(s)-phorus, Cithare(s)-xylon, Zoo(s)-phyton), but it is a normal procedure in Latin.

(b) In the composition with Greek words, the first element’s stem may end in a consonant or a vowel.

(1) When the first element’s stem ends in a consonant, if the second element begins in a vowel, no other connecting vowel is inserted. Examples: Limn-anthes, Cycl-anthhus, Phain-antha, hymen-anche, macr-adenus.

(2) When the first element’s stem ends in a consonant, and the second begins in a consonant, a connective o is inserted before the second element. Examples: Limn-o-charis, Cycl-o-sorus, Anth-o-discus, Macr-o-cystis, Spor-o-phyton.

(3) When the first element’s stem ends in a vowel, no other connecting vowel is added. Examples: Poly-anthes, Poly-hymnia, Myrc-anthes, Eu-osmus, Eu-xinus, Ai-phanes, Lysi-anthus.

Note 1: Exceptions to this rule are: Ichthy-o-phagus, Botry-o-carpus, Cardi-o-spermum, Ophi-o-glossum. Is-o-etes is to case (1).

Note 2: Several common irregular forms, with a “short stem” taken from the nominative singular case, and not from the genitive -as it is a rule-, have been coined in scientific compounds, as: haem-, instead of haemat-(ex.: haem-o-globina, haem-o-rhagia), meli-, instead of melit-(ex.: Meli-osma, Meli-lotus, Meli-cocca). In ancient Greek and Latin there are several examples of this usage (as: phos-phorus, instead of: phot-o-phorus; haem-o-rrhoissa, instead of: haemat-o-rrhoissa; terrificus, instead of: terrori-ficus). Anyway, this use has to be avoided in modern compounds, because it leads to the coinage of duplicates, with the resulting orthographic confusion. In some cases, different stems are available, as with mega-, meg-, megal-: the first before a consonant (ex.: mega-
phyllum, mega-carpus), and the other two before a vowel (ex.: meg-antherus, megal-anthus, but also the regular megal-o-manus).

Note 3: In both scientific and popular language, many hybrid compounds have been coined mixing Greek and Latin stems. This usage has to be avoided, unless for such prefixes as: pseudo-, eu-, sub-, prae-, post-, and the suffixes -opsis (subst.), -oides, -odes (adj.), which are currently admitted both for Greek and Latin words.

(c) When the composition is made with Latin words, the first element is normally used in the genitive singular case, and may end:
(1) in -ae, when it belongs to the first declension. Examples: Tabernae-montana, rosulae-formis, salviae-florus, sicae-folius, violae-odorus.
(2) in -i, when it is an adjective, or it belongs to the second or third declensions. Examples: rubri-venius, tenui-siliquus, tubi-florus, carci-folius, senecioni-formis.

Note 4: When the first element's stem ends in e or i, a connecting i is added before the second element. Examples: nympheae-i-folius, horde-i-formis, sole-i-formis, lili-i-florus.

Note 5: When the first element of a composition is an adjective, sometimes it is substituted by an adverbial form, as in: suave-olens (not suavi-olens), grave-olens (not gravi-olens). Sometimes two forms, both authorized by use, are possible, as in these cases: corni-peta, and corni-formis; grosse-denitatas, and grossi-dens; longe-ramosus, and longi-rameus; contorti-plicatus, and contorti-pilis; quadri-pes, and quadri-fidus.

Note 6: The hyphens in all the above examples are given solely for explanatory reasons.

(d) When the composition is made with two Latin words, denoting simultaneously different colors, shapes, or other characters, both shall be hyphenated, unless in a binomial (see Art. 73.9), and:
(1) the first element shall end in o, when it belongs to the second declension. Examples: atropurpureus, cordato-lobatus, elevato-marginatus.
(2) the first element shall end in i, when it belongs to the third declension. Examples: sexangulari-prysmaticus, pubescenti-sericeus, scrobiculari-recticulatus.

(e) A pseudo-compound is a Latin nominal phrase used as an epithet, and whose elements are hyphenated by requirement of binomial nomenclature. Examples: pes-caprae, morsus-ranae, crus-gallinae, collum-cycni, capit-mortuum, flos-pilosus, bursa-pastoris.

(f) Derivation is the linguistic procedure through which a new word is obtained modifying a word's stem by means of prefixes and suffixes. Examples: dens, dent-at-us, d-dent-at-us, dent-ic-ul-at-us; Sipanae, Sipane-opsis; Mapania, Mapani-opsis.
(1) For derived words, the basic element’s “long stem” (without the gen. sing. ending) has to be used. Then, such family names as: Melastom-aceae, Cappar-aceae, Podostem-aceae are incorrectly formed. They should be: Melastomat-aceae, Capparid-aceae, Podostemona-aceae.
(2) When a stem is appended with a verbal suffix (ex. gr.: -fer, -ger, -ficus, -fex, -cola, -gena, -cida, -petus, -fugus, -fragus, -vorus, -gradus), then a connecting i has to be inserted before the suffix. Examples: glandul-i-fer, ali-i-ger, fruct-i-vorus, spin-i-fex, silv-i-cola, alt-i-genus, centr-i-petus, herbi-voros, locul-i-cida, sept-i-fragus, plant-i-gradus.

Note 7: Acropetus is an admitted scientific hybrid, built with the Greek stem acro-, tip; and retrogradus is a Latin derivate, formed with the adverb (invariable) retro, backwards.”

Conclusion
It should be an unfortunate solution to the nomenclatural problems to begin a word war, or to reduce science to a word fight, because objective science is not a problem of linguistics, but of concepts, and the function of a word is to faithfully communicate a concept. This goal is attained either correctly (Spathophyllum), or incorrectly (Spathiphillum). But, if Latin, increased with latinized Greek elements, constitutes the official language of science, the only way that it be universally respected and accepted,
is that it be correct according to the grammatical rules. How can a nomenclature code oblige anybody to use a wrong spelling? On the other hand, the correct use of a language helps increase the authority of the scientist, and makes easier either communication, understanding, or standardization. No other, indeed, is the purpose of the present paper, than to help attaining this goal.

Some Pertinent Literature


[Nom. Ed. note: The author considerably shortened his paper to comply with the new regulations for proposals to amend the Code (Taxon 38: 474–475. 1989). Those interested may contact him for more information.

Two historical notes on the -ae- issue: (1) The first mention of this issue was by Eichler, citing “hedertifolia, non hederaefolia,” in the discussion of proposed Art. 35 (Fournier, Actes Congr. Int'l Bot. Paris. 194. 1867) that became Art. 36 in the 1867 Lois. Alphonse de Candolle ended discussion with the observation that this was a question of Latinity and grammar rather than of nomenclature. He added that there would be a great number of analogous recommendations if one wanted to prevent authors from making errors of Latin and Greek.

(2) Two proposals were made to the Vienna (1905) Congress. The first was Art. 10 of the Berlin Rules (Notizbi. K. Gart. Mus. Berlin 1: 250. 1897). The other was by a group of Swiss and Belgian botanists headed by Burnat and Durand (1904, not seen). French texts of the proposals appear in Briquet's synopsis of proposals (Text Synoptique p. 59. 1905) as Arts. A and B 34 ter. Both cited “menthiifolia, non menthaefolia”. The second proposal was approved unanimously and became Recommendation 13 under Art. 26 of the 1906 (Vienna) Code, the direct ancestor of current Art. 73.8. — DHN.]