BOTANICAL NAMES REVISITED

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Abstract: In this study we approach the issue of plant names from the perspective of botanical history and linguistics. The usage of plant names in different languages (Hungarian, Romanian, English), the peculiarities of their spelling are among the most important problems that we approach in an interdisciplinary way. Plant names can be found in various sources and our research relies on some of these sources (packages containing plant seeds). We try to mention aspects regarding the usage of plant names that are commercialized today, with special regard to aspects of translation and mistakes in using plant names on seed packages.

Keywords: botanical denomination, plant name, scientific vs. popular taxonomy, translation, terminology

The origin of botanical denominations and the process of giving names to plants can be traced back to the ancient Roman and Greek civilization; their botany related terminology was later overtaken and transmitted by scientists from different European monasteries or universities. From ancient times up to the Middle Ages botanical denominative practices were mainly utilitarian. The very first names given to plants were what we call today *popular names*. According to Elena Săvulescu, these names have the disadvantage that they are regional, sometimes they have several referents, some other times they designate genus and not the species (for instance, *Lathyrus tuberosus* and *Nigritella nigar* have the same popular name in Romanian, i.e. *sângele voinicului*, although the first Latin name designates a weed plant, the second one is the name of an orchid. (Săvulescu, 2010)

The very first attempt to create a system of botanical nomenclature is linked to the name of Teophrastus (382-287 BC), who classified plants into trees, bushes, herbs, evergreens and deciduous. The linnaean taxonomy was preceded by the work of Gaspar Bauhin (*Pinax theatri botanici*, 1596), who tried to introduce the binominal taxonomy into botany. Another name that should be mentionned is that of Christianus Mentzelius, and his *Index Nominum Plantarum Multilinguis (Universalis)*, 1682. (Gledhill, 2002: 21). Today's binominal nomenclature was introduced by the famous 17th century botanist from Sweeden Linné (1707-1778), also known as Linnaeus. In his *Species plantarum* Linné introduced the binominal nomenclature, *i.e.* he named each plant with two Latin words: the first was the name of the genus and the second was the name of the species. The tenth edition of Linné's *Systema Naturae* (1758) is usually refered to as the starting point of nomenclature, his binominals and his generic names still take priority over those of others. The rules for naming plants are today published by the *International Code of Botanical Nomenclature*.

Thus, the Linnaean binominal taxonomy prescribes that all plants should be given a name made up of two words: *genus* and *species* name (in Latin or transliterated in Latin). They should be italicized, the genus name with capital letters, the species name with lower case letters. The author's name follows the species name, usually abbreviated. When the auctorial name is put into parantheses, this is an indication of the fact that the species is now considered as belonging to a different genus, due to the contribution and description of another author. If the introduction and establishment of the binominal taxonomy is Linnaeus' work, according to David Gledhill, the rules which today govern the naming and the names of plants really had their beginnings in the views of A.P. de Candolle as he expressed them in his *Théorie Elementaire de la Botanique* (1813). There, he advised that plants should have names in Latin (or Latin form but not compounded from different languages), formed according to the rules of Latin grammar and subject to the right of priority for the name given by the discoverer or the first describer. This advice was found inadequate and, in 1862, the International Botanical Congress in London adopted control over agreements on nomenclature. Alphonse de Candolle (1806–1893), who was A.P. de Candolle's son, drew up four simple *Lois*, or laws, which were meant to solve the emerging problems of plant nomenclature. The Paris International Botanical Congress of 1867 adopted the *Lois*, which were the following:

"1. One plant species shall have no more than one name.
2. No two plant species shall share the same name.
3. If a plant has two names, the name which is valid shall be that which was the earliest one to be published after 1753.
4. The author's name shall be cited, after the name of the plant, in order to establish the sense in which the name is used and its priority over other names." (Gledhill, 2002: 25)

The use of Latin, as the language in which descriptions and diagnoses were written, was not universal in the nineteenth century and many regional languages were used in different parts of the world. The requirement to use Latin was written into the rules by the International Botanical Congress in Vienna, in 1905. Today, the names of plants are subject to international regulations, the most recent edition being the *International Code of Nomenclature for algae, fungi, and plants*, also called the *Melbourne Code*), issued in 2012 and adopted bythe Eighteenth International Botanical Congress Melbourne, Australia, July 2011. the Melbourne Code is an improved version of the previous Vienna Code (2005), the St. Louis Code (1999), the Stockholm Code (1952).

The most important rules of botanical taxonomy, according to the Melbourne Code, 2012**,** are the following:

"Principle II: The application of names of taxonomic groups is determined by means of nomenclatural types.
Principle III: The nomenclature of a taxonomic group is based upon priority of publication.
Principle IV: 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 V: Scientific names of taxonomic groups are treated as Latin regardless of their derivation.
Principle VI: The rules of nomenclature are retroactive unless expressly limited." (The Melbourne Code, 2012)

The definition of the plant name, according to article 6.3of the *Melbourne Code* is: „unless otherwise indicated, the word "name" means a name that has been validly published, whether it is legitimate or illegitimate". (The Melbourne Code, 2012)

We have to distinguish between three types of botanical taxonomies or plant names: 1. scientific names (in Latin), 2. scientific names in vernacular languages and 3. popular names of plants. *The scientific name* of the plant (*nomen scientificum*) is the name given to each taxon in Latin, in accordance with the rules stipulated in the International Nomenclatures. Secondly, scientific names can be considered those names in vernacular languages, which meet the demands of scientific denomination: one name corresponds to one species only (Negru, 2010:88)

Folk taxonomy, on the other hand, is a classification of objects which uses common names (also called *vernacular name, colloquial name, trivial name, country name, farmer's name*): *mézfű* is the Hungarian vernacular name for *Stevia rebaudiana*, but it is also called *sztévia* (*balm* in English). Linnaeus himself published a *Flora of Sweeden, Flora Svecica* (1745); in here, he recorded the Swedish common names, alongside with scientific names. As this list also contained binominals, we could say that the vernacular binominal system preceded his scientific binominal system.

Unlike scientific botanical and cultivar names, common or vernacular names are not governed by international rules. However, it is recommended to be written in Roman type, with lower case initial letters, except when the word is a geographical or a personal name. This applies also when the scientific name has become a common name and if the scientific name has turned into a plural noun: *potato, camellia, Jersey lily, rhododendrons*. "Common plant names have many sources. Some came from antiquity by word of mouth as part of language itself, and the passage of time and changing circumstances have obscured their meanings. Fanciful ideas of a plant's association with animals, ailments and festivities, and observations of plant structures, perfumes, colours, habitats and seasonality have all contributed to their naming. So too have their names in other languages. English plant names have come from Arabic, Persian, Greek, Latin, ancient British, Anglo- Saxon, Norman, Low German, Swedish and Danish. Such names were introduced together with the spices, grains, fruit plants and others which merchants and warring nations introduced to new areas. Foreign names often remained little altered but some were transliterated in such a way as to lose any meaning which they may have had originally…. The problem of plant names and of plant naming is that common names need not be formed according to any rule and can change as language, or the user of language, dictates. … Of necessity, botanical names have been formulated from former common names but this does not mean that in the translation of botanical names we may expect to find meaningful names in common language. Botanical names, however, do represent a stable system of nomenclature which is usable by people of all nationalities and has relevancy to a system of classification." (Gledhill, 2002: 2-4)

Milică (2010) refers to two basic models and types of knowledge in cognitive sciences, namely the empirical and the scientific model, which can be fruitfully applied in analysing botanical taxonomies as well. As he puts it, in the history of human culture and in the history of botany, popular plant names and the empiric or popular denominative model preceeded scientific names and the scientific model, today the influence of the empiric model is becoming weaker and weaker, the scientific names have become sources and models of inspiration for vernacular or popular plant names. According to Ioan Milică, the main features of popular plant names are: empirical dimension, (plant names are based on the characteristics of plants), denominative variability, regional character, lack of precision (the same name may refer to several species),

vagueness, culture specificity. The features of scientific plant names are: systemacity, nomenclatural specificity (in plant names, the first term is always the genus name, the second is the species name), precision (according to Linne's recommendations, the genus name should reflect the essential characteristics of plants, avoiding terms from neighbouring sciences such as zoology, mineralogy; the species name should not refer to the dimensions, habitat, colour, taste, usage of plants), terminological stability (scientific names should not be changed on the long term), linguistic economy and euphony (plant names should not be longer than 12 letters - *nomina sesquipedalis*-, and disgracious terms should be avoided) (Milică, 2010).

The spelling of Hungarian plant names was raised and solved in 1983 by the Spelling Comittee of the Hungarian Academy of Sciences, which published a guidebook on this in 1985. Thus, genus names consist of one word singular nouns, whereas species names are made up of a noun or genus name and the varietal epithet. Plant names in Hungarian should not be written with capital letters, they should always be written with lower case letters *(ezerjó, kéknyelű, furmint, leányka, szamorodni)*. Despite the recommendations of the Academy, the spelling of plant names is not always unitary. With names of products obtained from plants, such as wine, in which case the name is accompanied by the geographical name, László Grétsy recommends capital letters for the geographical names (*Tokaji szamorodni, Egri bikavér, Dörcsei rizling, Soproni kékfrankos, Móri ezerjó*), as these are not plant names, varietal names, but rather brands (Rácz, 2003: 283-287).

In 1952, the Committee for the Nomenclature of Cultivated Plants of the International Botanical Congress and the International Horticultural Congress in London adopted the International Code of Nomenclature for Cultivated Plants. Sometimes known as the Cultivated Code, it was first published in 1953 and has been revised several times at irregular intervals since then This Code formally introduced the term 'cultivar' to encompass all varieties or derivatives of wild plants which are raised under cultivation and its aim is to 'promote uniformity and fixity in the naming of agricultural, sylvicultural and horticultural cultivars (varieties)'. The term *culton* (plural *culta*) is also mooted as an equivalent of the botanical term *taxon*. (Gledhill, 2002:46)

The Cultivated Code recognizes only the one category of garden-maintained variant, the cultivar (cv.) or garden variety, which should not be confused with the botanical *varietas*. It recognizes also the supplementary, collective category of the Cultivar Group, intermediate between species and cultivar. In cultivation, variation within species or resulting from hybridization often needs to be recognized and named. Thus, we have the term *cultivar* (from cultivated variety) and given cultivar epithets. This cultivar epithet, when attached to the binomial genus name, forms the full cultivar name. The term cultivar epithet refers only to the final element of this complex name (the word or words enclosed in single quotation marks, never double quotation marks). Thus the cultivar name consists of the genus name (e.g. *Malva*) and species epithet (e.g. *moschata*) followed by the cultivar epithet (e.g. `Pink Perfection`): *Malvamoschata* `Pink Perfection`). Cultivar names are usually enclosed in single quotation marks or apostrophes and are never written in italics. They are never translated, rather left as such. "Cultivar epithets may not be translated into different languages. Where this has happened the translation is to be regarded as a trade designation. The transcription or transliteration of epithets is permitted, e.g. from Japanese to English (transcription) or from Russian to English (transliteration)" (Alexander, 2007: 25).

There are commercial reasons and marketing policies which imply the use of additional names known as trade designations: they resemble cultivar epithets and are often presented as

such, but they should not be enclosed in single quotation marks and are usually written with small capitals. They should always be cited together with the cultivar name (after it). For instance, the cultivar *Choisya ternata* `Lich` has been marketed under the trade designation SUNDANCE. In many countries there is resistance to using foreign cultivar names, thus they are translated or given alternative vernacular names. However, the *Guide for horticulturists, nurserymen, gardeners and students* edited by the Horticultural Taxonomy Group- Hortax recommends the use of the original cultivar name, for the sake of stability. According to them, in the *RHS Plant Finder* (Royal Horticultural Society) "such translations are cross-referenced to the correct cultivar name, in the same way as synonyms, e.g. Hamamelis x intermedia MAGIC FIRE= `Feurzauber`" (Alexander, 2007:14).

One of the most common translation mistakes that can occur with horticultural texts is mixing popular terms with scientific ones: it is not allowed to use terms like *gané* instead of *szervestrágya* when translating the English term *organic manure* into Hungarian. The same major problem can occur in the translation and/or handling of names of genera, families and other taxa. According to article 32 of the eighth edition of *The International Code of Nomenclature for Cultivated Plants,* when a cultivar name appears in a publication using a different language from that of its original publication, the epithet may not be translated (it may be however transliterated)… when from marketing reasons a cultivar epithet has been translated into a different language, the translated epithet is to be regarded as a trade designation… when established in a language other than Latin, the epithet of a name of a Group may be translated. Only one such equivalent epithet may exist in each modern language… If a Group epithet is in Latin form, it may not be translated. However, an alternative Group epithet in a language other than Latin may be established (*The International Code of Nomenclature for Cultivated Plants,* 2009*:* 51-52)

Transliteration and transcription of cultivar epithet is permitted, but generally cultivar names should be given and left in vernacular languages, No translation is required, but when translation occurs, cultivar epithets are treated as trade designations. "As with botanical names, cultivars can have synonyms. However, it is not permissible to translate the fancy names into other languages using the same alphabet; except that in commerce the name can be translated and used as a trade designation. This produces the confusion that, for example, *Hibiscus syriacus* 'Blue Bird' is just a trade name for *Hibiscus syriacus* 'L'Oiseau Bleu' but will be the one presented at the point of sale. Also, translation is permitted to or from another script and the Code provides guidance for this.

In the case of the names of Cultivar Groups, translation is permitted; since these are of the nature of descriptions that may relate to cultivation. An example provided is the Purple-leaved Group of the beech which is the Purpurbl¨atterige Gruppe in German, the Gruppo con Foglie Purpuree in Italian and the Groupe `a Feuilles Pourpres in French. (Gledhill, 2002:51)

Another peculiarity of botanical names, that horticulturist and translators should be familiar with, is the use of symbols, such as x in front of the species name (*genus* x *species*) when dealing with hybridized items: *Mentha x rotundifola*, 'Lady Pirre' x 'Nur Mahai', [('Independence' x 'Papilon Rose') x ('Charlotte Armstrong' x 'Floradora')]. When plants of two species or more are crossed, the resultant seedlings are called hybrids. Not all hybrids have been given names and are simply referred to by quoting the names of the parent species linked by a multiplication sign. This is called a *hybrid formula***.** Hybrids between genera are given new names and the multiplication sign precedes the new name (the hybrid between *Crataegus* and *Mespilus* is called x *Crataemespilus*). There are also a few special cases called *graft*

*hybrids*where the tissues of two plants become physically combined as the result of grafting rather than through fertilization. These are indicated by a plus sign (the name of the graft chimaeras between *Labornum* and *Cystius* is + *Laburnosystius*) (Alexander, 2007:11). These symbols should be left as such in translation, but when reading out, they should not be read aloud.

Our research has focused on the usage of plant names as they appear on the packages of seeds sold in commerce. Our corpus has been made up by collecting and extracting the plant names from plant seed packages. Thus, in the corpus there are 178 plant names, out of which 142 are vegetable names and 36 are flower names[1].

In the analysis of our corpus we have focused on two types of mistakes, namely formal mistakes (misspelling of words, confusion in point of capital letters vs. lower case letters, etc.) and language mistakes (the usage of wrong words, lexical problems mistranslations, etc).

In the first category of mistakes we have included the lack of diacritical marks in case of Hungarian and Romanian species names and cultivar names (zöldborso, Soroksari St., Bere de Munchen, soska (Pallagi Nagylevelű), bimboskel, fátyolvirág féherinstead of zöldborsó, Soroksári St., Bere de München, sóska (Pallagi Nagylevelű), bimbóskel, fehér fátyolvirág). Another formal mistake is the hyphenated form of *paradicsom-paprika* instead of *paradicsompaprika.*

Sometimes capital letters are used in the Hungarian and Romanian names, as if they were proper names (*Erkély Paradicsom, Sárgarépa Vörös óriás, Sárga Paradicsom*). The inconsistent usage of the same item in the cultivar name has been spotted in three cases: sometimes *Comun St* (*Anethum graveolens L),* some other times *Common St.* (*Satureja hortensis L*) or *Comune St.* (*Petroselinum crispum* var. *vulgare*)

Another type of formal mistake concerns the accord of masculine and feminine nouns and adjectives in Romanian (pătrunjel frunză *creț***,** pătrunjel frunză *neted* instead of pătrunjel cu frunză *creață***,** pătrunjel cu frunză *netedă*). Another formal mistake is the usage of Romanian diacritical marks in Latin names (*Brassica oleracea* var. *capitata* L.f. *albă*instead of*Brassica oleracea* var. *capitata* L.f. *alba*). Sometimes, two names are given, especially with the Hungarian versions (for instance, *soska*-misspelled- cited together with *Pallagi Nagylevelű*-written with capital letters)

Another type of mistake is related to word order: fodros petrezselyemlevél (Petroselinum *crispum* var. *vulgare*), should be levélpetrezselyem-fodros or fodros levélpetrezselyem. The correct word order is reversed in many cases of flower names:*fátyolvirágféher (misspelled)* instead of *fehér fátyolvirág*, or *Árvácska sárga* and *pensy yellow, Árvácska kék* and *pensy blue, Árvácska fehér* and *pensy white, Árvácska piros* and *pensy red* for different varieties of *Viola witrockiana*.

In what lexical mistakes are concerned, there are numerous cases of inconsistent and misleading usage of cultivar names: sometimes, the cultivar name appears in two or three languages on the same package: for the cultivar French Breakfast of *Raphanus sativus* var. *sativus* we have identified the following cultivar names on the same package: Ridichi de lună-French Breakfast, Retek- Francia Reggeli (though in Hungarian it should be *hónaposretek*,Radish- French Breakfast). For the cultivar Ostergruss Rosa of *Raphanus sativus*, the Romanian and English version keep the original cultivar name (Ridichi de vară Ostergruss Rosa and radish Ostergruss Rosa), while in Hungarian the cultivar name is translated into Húsvéti Rózsa.

[1] For the treatment of plant names in scientific writings see Nagy (2013)

The most important type of lexical mistake is related to the mistranslation of the species name. For instance, in the case of radish (*Raphanus sativus* L.), the cultivar name and theRomanian species name do not match, as the cultivar name (Bere de Munchen in Romanian - also wrongly spelled- and Sörretek in Hungarian) refers to a species of winter radish, still, in Romanian it has been translated as *ridichi de vară*.

Perhaps the most interesting case of literal translation is *Tomate soi seră-solar* (*Lycopersicon esculentum*), translated into Hungarian as *paradicsom-* though it should be *Paradicsom- hajtatófajta*, whereas in English it has become *Tomato for solar* (an obvious case of literal, word for word translation, using the term *solar-* a syntactic calque based on the Romanian word - instead of the correct English version *greenhouse tomato*). One of the flower names displays two mistakes, namely the misspelling of the Hungarian variant *kövirág* which should be *kővirág* and the mentionning of two scientific names in Hungarian, i.e. *kővirág* and *porcsinrózsa*.

The language of science(s) is precise, clear and unambiguous. Crystal describes the features of a science specific grammar, i.e. the large technical vocabulary, largely based on Latin or Greek terms, with a lot of compounds which can be very long, imposing abbreviations for practical use, long sentences with a complex internal structure. "The methodology of science, with its demand for objectivity, systematic investigation, and exact measurements, has several linguistic consequences. There is an overriding concern for impersonal statement, logical exposition and precise description. Emotional comment, humour, figurative expression, and other aspects of personal language are avoided (except in writing for a lay audience) …. Moreover, scientific vocabulary requires continual updating in the light of the process of discovery. Science is in fact the main birthplace for new words in a language: in a comprehensive English dictionary, the vast majority of the words would be scientific (or technological) terms, more than 750 000 species of insects have been discovered … and if all their names were incorporated into the largest available dictionaries, the books would immediately double in size" (Crystal, 1997: 384).

Theresa Cabré summarizes, in her *Terminology. Theory, methods and applications,* three particular features of the scientific and technical communication generated from special languages. The greatest divergences between general language and special languages are found in the vocabulary. The words in the general language texts are much easier to understand for most speakers of the language than those in the special texts. (Cabré, 1999: 70-71) This observation allows her to identify three groups of lexemes in the general language texts and those belonging to special subject fields:

1. General language lexical items: for instance the word *mixture* in the case of our corpus based on botanical names;
2. Specific lexical items that can be attributed to a borderline area between general language and special language: in our case all the scientific names of plants in vernacular languages;
3. Lexical items specific to special texts: all the Latin names and the majority of the varietal names.

Similarly, certain structures and categories appear more frequently in special texts than in general language texts:

1. Morphological structures based on Greek or Latin formatives;
2. Abbreviations and symbols;
3. Nominalizations based on verbs;
4. Straightforward sentence structure with little complex subordination.

Out of these features, the packages containing the plant names display the first two characteristics, namely the fact that all packages list the Latin names of plants, and abbreviations and symbols are used (C1=propagation 1, F-hybrid, St= standard) Thus, this particular branch of English for Sciences that we focus on this research, i.e. English for Horticulture, displays all the peculiarities of Scientific English: a lot of nouns and noun phrases of Latin origin and the habit of giving both the English and the Latin name for plants (*marigold*/*Calendula officinalis* L.), the use of abbreviations and symbols, etc.

Our research has focused on a very special segment of English for horticulture, i.e. plant names. We have dealt with the issue of plant names from the perspective of botanical history and linguistics and we have tried cover some aspects regarding the usage of plant names in different languages (Hungarian, Romanian, and English), the peculiarities of their spelling, the role of international codes, etc. Our corpus has been made up of plant names taken from packages containing plant seeds that are sold in commerce. We mention aspects regarding the usage of plant names, with special regard to aspects of translation and mistakes in using them. The most common mistakes we have identified were of two types, namely formal mistakes (misspelling of words, confusion in point of capital letters vs. lower case letters, etc.) and lexical mistakes (the usage of wrong words, mistranslations, etc).

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