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## Some considerations on Latin geographical epithets in binomials

Bruno Manara<sup>1</sup>

### *Summary*

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Different possibilities of forming Latin geographical adjectival epithets in binomials are analysed, and suggestions are presented to standardize their formation.

No major problem exists with the formation of adjectival epithets from geographical names referring to regions, cities, and places known from classical or ancient times, since from long ago they have their established adjectival forms. The problem arises with modern names, or with names of places unknown in classical or ancient times.

When European explorers and colonizers in past centuries discovered and founded different lands and cities, these were often given a Latin or latinized name, especially in official chronicles and reports to the authorities of the Catholic Church, since Latin was then the international language. Early scientists of the 16th and 17th centuries, such as Ray, Marcgravius, Bauhin, Clusius, Piso, Brontius, Francisco Hernández, and others, followed the same custom and latinized the geographical names of the newly discovered lands with their cities and places. For this reason, although the English, French, Spaniards, or Portuguese spoke of Newfoundland, Hudson Bay, Maryland, Louisiana, Antilles, Filipinas, Madagascar, Brasil, Paraguay, Peru, Río de Janeiro, Trujillo, Curaçao, Guadalupe, Veracruz, Buenos Aires . . . , all the above names were latinized and officially referred to as: *Terra Nova*, *Fretus Hudsonis*, *Marilandia*, *Ludovicia*, *Antillae*, *Philippinae*, *Madagascaria*, *Brasilia*, *Paraguaria*, *Peruvia*, *Flumen Januarii*, *Truxillus*, *Curassavia*, *Aquae Lupiae*, *Vera Crux*, *Bonaria* . . . This explains why in taxonomy we have many geographical adjectives that do not correspond to the modern names of localities. For instance, *fluminensis* (from *flumen*, stem *flumin-*) usually refers to Río de Janeiro, and *aqualupianus* means “from Guadalupe”. The *International code of botanical nomenclature* (Greuter & al., 1988) acknowledges these old geographical designations in Art. 73.7 as “intentional latinizations” (except those covered by Art. 73.10), and supports them in Rec. 73E.

However, customs change, and nowadays nobody in any country or in any official report ever pays attention to latinizing geographical names. What, then, are the criteria to be followed in order to form Latin geographical epithets from place names?

We need to explain the concept of “stem” in words of classical origin here, since it differs from the same concept in most modern languages. In this article, the term “stem” means the part of the word that remains when its grammatical affixes are removed (e.g., *scribere*, stem *scrib-*). When dealing with a noun or an adjective, the stem is what remains when the genitive singular inflection is dropped. For practical purposes, and with the exception of most words in third and several in second declension, the stem of the genitive singular in Latin is similar to the stem of the nominative (e.g., *planta*, *plantae*, stem *plant-*; *culmus*, *culmi*, stem *culm-*; *complexus*, *complexi*,

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stem *complex-*; *vitis, vitis*, stem *vit-*; but: *complex, complicitis*, stem *complic-*; *iris, iridis*, stem *irid-*; *ruber, rubri*, stem *rubr-*).

Stearn (1973: 214), in his chapter (18) dealing with geographical names and including a long list of examples of geographical names and epithets gives only a "general principle" by which geographical adjectives are obtained: "Modern adjectives formed by adding *-icus, -anus*, or *-ensis* to a modern place name, e.g., *californicus, pennsylvanicus, sibiricus, tibeticus* . . . , need no explanation". Yet, if we look at the examples proposed, we realize that the adjectival suffixes are not always added to the full place name, but to its stem, and, also, the first vowel of the suffix sometimes is dropped, as in *californi-cus* (not "*california-icus*"; nor "*californi-icus*"), and similarly *pennsylvani-cus, sibiri-cus* etc.

In the *Code*, there is one statement on this subject: "An epithet derived from a geographical name is preferably an adjective and usually takes the termination *-ensis, -(a)nus, -inus*, or *-icus*." (Rec. 73D.1). Again, no guidance is given as to whether the adjectival ending is added to the full place name or just to its stem, although judging from the presented examples the second position is obviously to be preferred. I agree with Heath (1989: 303; 1991: 321) when he corrects *Mammillaria esperanzaensis* Boedeker to *M. esperanzensis*, although the former spelling is supported by Brummitt & Taylor (1990: 303).

Another statement in the *Code*, on a similar subject, is Rec. 73G.1(a) which gives directives for forming a true compound by removing the case ending of a genitive singular, etc. This recommendation is in some aspects enforced by Art. 73.8

This lack of clear guidance on the subject has led to chaos in the coinage of modern geographical epithets. Some botanists form them from the stem but others from the full place name. By an extensive interpretation of Art. 73.8, resulting orthographic "variants" might be regarded as correctable if they disagree with the accepted usage of Latin and latinization (Rec. 73G.1).

Although botanical epithets can be arbitrarily formed, some combinations of phonemes must be avoided "that don't agree with traditional botanical names", formed according to classical patterns. Therefore, when Rec. 73D.1 states that "an epithet derived from a geographical name . . . usually takes the termination . . ." it must be understood that the termination is added to the stem, not to the complete geographical name. For instance, the adjectival epithet derived from *Londinum* (London), is *londin-ensis* (not "*londinum-ensis*"), *ganget-icus* (not "*ganges-icus*") comes from *Ganges*, whereas from *Toletum* and *Alexandria* we obtain *tolet-anus* and *alexandri-nus* (not "*toletum-anus*" nor "*alexandria-inus*"). The above is obvious from such an epithet as *amorginum*, from *Amorgos*, quoted in the same Rec. 73D.1.

Although the stems of the above names were basically formed in the same way, each one has a different adjectival ending, ultimately determined by phonetic reasons. Classical instances may illustrate the use of different suffixes with the names of countries (e.g., *Hispan-us, Ital-icus, Aegypt-ius, Pers-a*), cities (e.g., *rom-anus, panormitanus, cordub-ensis, bizant-inus*), places (e.g., *urb-anus, rur-alis, mar-inus, mont-anus*), and rivers (e.g., *ren-anus, nil-oticus, tiber-inus*). Cases are also known, in which two suffixes were allowed for one and the same geographical designation (e.g., *Hellen-us, Hellen-icus; Ephes-ius, Ephes-inus; Cyren-aeus, Cyren-aicus; Numid-a, Numid-icus*). Thus, no standard rule can be provided to govern the choice of geographical suffixes, and we must rely only on the good judgement of the author of the epithet.

*Names ending in -a or -e.* – When starting to analyse adjectival epithets formed from modern geographical designations, we observe that the ones ending in *-a*, or *-e*, either stressed or not, were consistently treated as classical names by early scientific authors. Therefore, from Canada, Panama, Bogotá, Bahia, Sinaloa, Burma, *Sina*, *Japonia*, Casiquiare, Ibagué, San Felipe, such adjectival epithets were derived as: *canad-ensis*, *panam-ensis*, *bogot-ensis*, *bahi-ensis*, *sinalo-ensis*, *burm-ensis*, *sin-ensis*, *japoni-cus*, *casiquiar-ensis*, *ibagu-ensis*, *sanfelip-ensis*. In fact, all the above cities and place or river names, whether latinized or not, were treated as if they were Latin or Greek words in first declension.

*Names ending in -as or -es, and -x.* – Modern names ending in *-as*, *-es*, similar to Latin plural words in first and third declension respectively, were subject to divergent usage. For instance, from Filipinas, Amazonas, Honduras, Texas, Barbacoas, Loxas, Solimoes, Atures, Maypures, Los Angeles, were derived *philippin-ensis* or *philippinus*, *amazon-ensis* or *amazon-icus*, *hondur-ensis*, *tex-anus* or *tex-ensis*, *barbaco-ensis*, *lox-ensis*, *solimo-ensis*, *atur-ensis*, *maypur-ensis*, *angel-ensis*. On the contrary, from Vaupés, Maynas, Veraguas, Chiapas and Caracas, *vaupes-anus*, *maynas-ianus* (or *mayn-ensis*), *veraguas-ensis* (or *veragu-ensis*), *chiapas-ensis* (or *chiap-ensis*), and *caracas-anus* or *caracas-icus* were formed.

In other words, some names were treated by analogy with similar Latin words, with a stem and case ending, while others were (sometimes) taken as stem-words, without an ending. The linguistic reason may be that in local languages the words of the first category have their corresponding singular form, while this is not the case of the words of the second category.

A particular case is that of the name Ozarks from which the adjectives *ozark-anus* and *ozark-ensis* (not “*ozarks-anus*” nor “*ozarks-ensis*”) were obtained, since Ozarks is an abbreviated form of “Ozark mountains”. Incidentally, the digraph *ks* is rendered as *x* in Latin. This leads on to the case of modern names ending in *-x* (e.g., *Mompox*, *Halifax*), analogous to Latin names in third declension, whose genitive stem ends in *-c*, e.g., *calyx*, stem *calyc-*, from which *calyc-inus* and *calyc-osus* (not “*calyx-inus*” nor “*calyx-osus*”) are formed. Therefore geographical names of this kind, when given an adjectival ending, should be assigned the stem *Mompoc-*, *Halifac-*, to produce epithets such as *mompoc-ensis* and *halifac-ensis*.

*Names ending in -is or -us.* – Adjectival epithets derived from such names are, e.g., *illino-ensis* (from Illinois), with the stem formed by analogy to the classical way (no Roman would have tolerated “oi”); and *manaus-ensis* (or *manaos-ensis*), formed by treating *Manaus* or *Manaos* as a stem-word without case ending. The later, correct spelling *Carya illinoensis* was proposed by Grauke & al. (1986: 176) for conservation, over the original, arbitrarily formed spelling, *C. illinoensis*, but the proposal failed to get qualified support by the Committee for Spermatophyta (Brummitt, 1988: 448) and by the General Committee (Nicolson, 1988: 440). Still the only linguistically acceptable options are *illino-ensis* and *illinois-ensis*.

*Names ending in -o or -os.* – Such place names present an analogous dichotomy. Many of them were traditionally latinized in *-us* and treated as Latin names in second declension, while others are considered as stem-words. So, from Ohio, Ontario, Mexico, Santo Domingo, Paramaribo, Loreto, Acapulco, Tokyo, Chocó, Chaco, Potaro, Rio Negro, Togo, Laos, Iquitos, Barbados and San Carlos, we have: *ohi-ensis*, *ontari-ensis*, *mexic-anus*, *doming-ensis*, *paramarib-ensis*, *loret-ensis*, *acapulc-ensis*, *tokyo-*

*ensis, choco-ensis, chaco-ensis, potaro-ensis, rionegr-ensis and negro-ensis, togo-ensis, laos-ianus, iquit-ensis and iquitos-ensis, barbad-ensis, sancarl-ensis and sancarlos-ianus.*

*Names ending in -i or -y.* – A similar dual usage may be observed with names ending in *-i*. In several of them the final vowel is conserved, while in others it is dropped. For example, from Missouri, Maui, Miami, Tahiti, and Mazaruni, the adjectives *missouri-ensis*, *maui-ensis*, *miam-ensis*, *tahit-ensis*, and *mazarun-ensis* or *mazaruni-ensis* were formed. The ending *-y*, is usually phonetically conserved, but transliterated to *i*. For instance, from *Guanay* and *Tepuy* we have *guanai-ensis* and *tepu-ensis*, by the token of the English: botany, botanical.

No rule may be given about the maintenance or suppression of the ending *-i* before an adjectival suffix. Even in classical Latin we have *atheniensis* (from *Athenae*, stem *athen-*), *carthaginiensis* (from *Carthago*, stem *carthagin-*), and *antiochensis* or *antiochenus* (from *Antiochia*, stem *antiochi-*), whereas we should expect “*athen-ensis*”, “*carthagin-ensis*”, “*antiochi-ensis*” or “*antiochi-enus*”. In any event, *hawai-ensis* should be preferred to *hawaii-ensis*, since in Latin words no such letter combination as “*aiie*” is found.

*Names ending in -u.* – Geographical names ending in *-u* should consistently be treated as stem-words. For example, Zenú, Parú, Kanuku, Kinabalu, Kahuku, Honolulu, ought to produce in botanical Latin epithets such as *zenu-ensis*, *paru-ensis*, *kanuku-ensis*, *kinabalu-ensis*, *kahuku-ensis*, *honolulu-ensis*. Such epithets are perfectly analogous with Latin adjectives derived from names in fourth declension. For instance, from *arcus*, *gradus* and *spiritus* (stems: *arcu-*, *gradu-* and *spiritu-*) the classical adjectives *arcu-atus*, *gradu-atus* and *spiritu-alis* were derived, and *portu-ensis*, formed from *portus*, harbour (stem *portu-*), referred to a Roman causeway since early Republican times.

*Names ending in consonants other than -s or -x.* – In these cases, the noun is best considered a stem-word, and the adjectival suffix is simply added to it. Thus, from Québec, Darien, Goyaz, Kew, Tibet, we have *quebec-ensis*, *darien-ensis*, *goyaz-ensis*, *kew-ensis*, *tibet-icus*. However the adjective *tocantin-us* (not “*tocantins-us*”), from Tocantins, has a thoroughly classical look. Furthermore, the adjective *cap-ensis* is obtained from *Caput (Bonae Spei)* by using a shortened stem, not the classical stem *capit-*, or rather it was derived from Hispanic Ciudad del Cabo, or English Cape Town; and from Sandwich the adjective *sandwic-ensis* was coined, perhaps because in Latin the letters *ch*, used as a transcription of the Greek *chi*, do not phonetically correspond to the English *ch*.

### Conclusion

From the previous analysis it is evident that two different procedures are followed in forming Latin geographical epithets: (1) The classical and traditional way of early scientists is to take the stem of a geographical name, to which an adjectival suffix is added. (2) A more recent fashion, to consider the entire, non-classical geographical designations as a stem-word to which the adjectival suffix is appended.

The examples in Rec. 73D of the *Code* present only the classical way. Yet the previous analysis shows that both possibilities are acceptable, although the first is to be preferred. Botanical literature has hundreds of geographical names correctly latinized in this way, and non-geographical plant names and epithets are coined by

analogy to this pattern: for instance, *Adiantopsis* (not “*Adiantumopsis*”), from *Adiantum*, stem *adiant-*; *physalodes* (not “*physalisodes*”), from *Physalis*, stem *physal-*; *browallioides* (not “*browalliaoides*”), from *Browallia*, stem *browalli-*; *Gentianella* (not “*Gentianaella*”), from *Gentiana*, stem *gentian-*.

Modern geographical names ending in *-i*, *-u*, or in a consonant other than *s*, *x*, or *ch*, can suitably be considered as stem-words, since adjectival epithets thus derived from them look like classical ones.

With modern names ending on *-o*, either stressed or not, it is desirable to drop the final vowel before adding an adjectival suffix. The same applies, with even greater emphasis, for modern designations ending in *-a*, since this is the way in which classical Latin epithets were formed. Also, *-ensis* is not the only adjectival suffix available. The *Code* mentions *-anus*, *-inus*, *-icus*, and others may be added, such as *-iacus*, *-enus*, *-aeus*, *-us* (Stearn, 1973: 213). This provides for a great flexibility in adjectival creation and helps to avoid constructing forms contrary to traditional usage.

For names ending in *-as*, *-es*, *-os*, *-is*, *-us*, the choice of the first or second procedure must depend on prevailing traditional usage in each instance, although the adjective *amorginum* (not “*amorgos-inum*”) from Amorgos, of Rec. 73D, is an excellent example to be followed.

The author is aware of the fact that the subject of this paper is a complex one, and that different opinions exist. Therefore, he will appreciate any suggestions or comments that lead to a better understanding of the problem here analysed. As Brummitt & Taylor (1990: 299) put it, the present wording of Art. 73 of the *Code* is confusing, and from the examples presented “it is not easy to draw general principles”: indeed, a major deficiency.

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