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Virus nomenclature: Three steps forward, a half step back



[Zdenek Hubalek](#) 88.83.232.36 over 13 years ago

Two contrasting opinions about virus taxonomy or, more precisely, about virus nomenclature, appeared in the first 2004 issue of Emerging Infectious Diseases (1,2). These differing ideas about scientific (vs. common) names of viruses are the part of a long disagreement among virologists that can be tracked to the early 1950s (3,4).

The three really major progressive steps of virus nomenclature achieved in the last decades have involved the acceptance of: 1) the taxa "**family**" and "**genus**" (the names are written in italics, the initial letter being capitalized); 2) the taxon "**species**" (5,6); 3) the **binomial nomenclature**. However, the last, recent step has been carried out in an inappropriate way, contradicting the rules of general biological (i.e. Linnean) nomenclature as Mark Eberhard (2) points out absolutely correctly. Linnean binomial nomenclature does namely use latinized (Latin, Greek) but not English common names for specific epitheta, and the specific epitheton (written in italics with the first letter noncapitalized) must always be situated after the generic name (written with the first letter capitalized), not in the reverse order as it has been lately suggested by the International Committee on Taxonomy of Viruses (ICTV). It is a pity that the standard latinized binomial nomenclature has not yet been generally adopted by the ICTV for viruses although it does work well in all other areas of life science. Because virologists have already accepted the fact that viruses belong to the field of biology, they have to follow the rules of general, i.e. Linnean biological nomenclature instead of constructing another system that is incompatible with other biological specialties. It is incorrect to object that it might be very difficult to coin latinized names for an estimated 1,600 (7) virus species. For instance, such binomials have been proposed without great difficulties for 50 or so arboviruses that occurred in Europe in the 20th century (8): the names have been based on generic names accepted by ICTV (9) and on the concept of virus species (4-6,10). The examples of the proposed arbovirus names have included, e.g., in the *Togaviridae* family: Sindbis virus - *Alphavirus sindbis* (but not *Sindbis Alphavirus*); in the *Flaviviridae*: West Nile virus - *Flavivirus nili* (but not *West Nile Flavivirus*); dengue virus - *Flavivirus dengue* (but not *Dengue Flavivirus*); tick-borne encephalitis virus - *Flavivirus ixodetis*; in the *Bunyaviridae*: Batai virus - *Bunyavirus batai*; sandfly fever Naples virus - *Phlebovirus neapolis*; sandfly fever Sicilian virus - *Phlebovirus siciliensis*; Toscana virus - *Phlebovirus toscanae*; Crimean-Congo hemorrhagic fever virus - *Nairovirus congocrimae*; in the *Reoviridae*: Eyach virus - *Coltivirus eiach*; Tribeč virus - *Orbivirus tribeci*; bluetongue virus - *Orbivirus linguaecyanei*.

It is obvious that the "latinized" specific epitheta can be coined easily from the commonly used names,

largely with only minor changes (at least in arboviruses whose names are usually formed according to the geographic site of original isolation). These scientific labels of viruses of course do not exclude at all the usage of the common English, German, French, Spanish, Russian, Czech etc. names of viruses. However, a sort of hybridization of Latin (generic) and English (specific) names in the binomes as suggested by the ICTV is controversial and hardly acceptable from the bionomenclature point of view.

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Offline [Elliot Lefkowitz](#) 138.26.23.28 *over 13 years ago*

(Posted for Andy Ball, ICTV President)

Dr Hubalek,

Thank you for posting your opinion on this issue, and for the taxonomic proposal you submitted to the ICTV Executive Committee proposing Latinized binomial names for a large number of

'arbovirus' species. Your proposal (2007.136G.01: Proposal of latinized binomial nomenclature for arboviruses) was discussed at the last Executive Committee meeting, but it was rejected on the grounds that it massively violated the first principle of virus nomenclature: that of stability. If it is any comfort, another proposal to change the names of all virus species in the family Geminiviridae to conform to the 'Non-Latinized Binomial System' (NLBS) was also rejected by a vote of 15 to 1 at the same meeting and for the same reason.

The members of the ICTV Executive Committee overwhelmingly ascribe to the view that the disadvantages of renaming virus species on a large scale to conform to the NLBS or any other nomenclatural system greatly outweigh the potential advantages. While your proposal would have the merit of bringing virus species names into line with standard biological taxonomy, the disadvantages of changing the names of all arbovirus species (and, by extension, ALL virus species) far outweigh the benefit of uniformity.

With regards,

Andrew Ball
ICTV President

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