Authorities for Binomials: Necessary or Pedantic?

Charles Heiser

Department of Biology, Indiana University, Bloomington, IN 47405

Jules Janick

Department of Horticulture and Landscape Architecture, Purdue University, West Lafayette, IN 47907-1165

In the instructions to authors for the *Journal of the American Society for Horticultural Science* and *HortScience*, authorities are required for scientific names (binomials) of organisms at the first mention in the paper. Why? We ask that in all seriousness. The reason given over a half-century ago was to avoid confusion, for it was possible for two different species to have the same name. An example: at one time two different sunflowers had the name *Helianthus niveus* (Watson, 1929). A species from Baja California was named *H. niveus* by T.S. Brandegee in 1889 and another species from Peru was described under the same name in 1895 by Georg Hieronymus, who was unaware of Brandegee's work. Therefore, the use of the name *H. niveus* without an authority was a source of confusion. That was ended in 1924 when S.F. Blake renamed the Peruvian species *H. subniveus*. [This arcane example may be of little moment to horticulturists; neither species is listed in the revised edition of *Hortus Third* (Staff, 1976).] There still may be some genera in which different species have the same name, but they are rare today, for in the last 50 years taxonomists have identified many of the problems and made corrections, particularly in the economically important species.

One of our greatest concerns is that authors of papers for journals requiring the authority seldom do any taxonomic investigation. Our impression is that many, if not most of them, go to the library and pull down books (or refer to some paper cited in the references) until they find one that has a name or an abbreviation that they can use for the plant with which

they are concerned. For horticulturists, the 1976 revised edition of *Hortus Third* has been the preferred source, although the new book *World Economic Plants* by Wiersema and León (1999) is now more up-to-date and comprehensive; similarly, *Fungi on Plants and Plant Products in the United States* (Farr et al., 1989) is a common source for pathogens. While inclusion of the authority with the binomial gives a veneer of scholarship, clearly it does not mean that the plant is correctly identified. More important than giving the authority would be to see that a voucher specimen is deposited in a herbarium so that someone desiring to do so could verify the identification.

Although a number of journals, including *Economic Botany* and *Genetic Resources and Crop Evolution*, still request that authorities be given, others no longer require this. In the authoritative book, *Evolution of Crop Plants* edited by Simmonds (1976), the authors of papers were requested not to use authorities for binomials and this was continued in the second edition (1995) coedited by J. Smartt and N.W. Simmonds.

One would naturally expect taxonomic journals to require authorities, but, somewhat to our surprise in going through a number of issues of *Systematic Biology*, authorities were not included for either plants or animals. Of course, zoologists have never considered the person naming an organism as sacred as have botanists.

Binomials have been recently changed in a number of crop plants, but even here the retention of the authorities is neither necessary nor helpful. Thus, the binomial for cowpea has been changed from *Vigna sinensis* (L.) Savi ex Hassk. to *V. unguiculata* (L.) Walp, and that for watermelon from *Citrullus vulgaris* Schrad to *Citrullus lanatus* (Thunb.) Matsum. & Nakai. The case of the tomato is even more extraordinary. All horticulturists use the name

Lycopersicon esculentum Mill. despite the use of *L. lycopersicum* (L.) Karst. ex Fawr. favored in *Hortus Third* (1976). Recent molecular evidence (Spooner et al., 1993) indicates that the separate genus *Lycopersicon* is inappropriate, that tomato is properly a species of *Solanum*, and thus the appropriate name would be *Solanum lycopersicum* L., the original name coined by Linnaeus. That horticulturists will soon change their usage of *L. esculentum* is doubtful, but even if they do, the need to list the authorities may not be helpful except in a paper on changing the taxonomy of tomato.

What is the solution to this problem? We suggest that horticultural journals dispense with the requirement for authorities except in cases where their use is appropriate for historical or taxonomic reasons. Use of the binomial should imply that the author has confirmed the accuracy of the attribution.

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