Comments and Communications

A Revised Proposal for Errors and Emendations in the Rules of Zoological Nomenclature

Suggestions for changes in Articles 19 and 20 of the International Rules, dealing with the formation and spelling of scientific names, was published in *Science* (October 3, 1947, pp. 315–316) by a subcommittee of the Smithsonian Institution Committee on Zoological Nomenclature.

Comments sent in by readers have resulted in reconsideration of many points and in reorganization of the proposal in order to eliminate ambiguities and clarify points which had been misunderstood. The revised version is presented as the formal proposal of the Smithsonian Committee. It has been sent to the International Commission in the form of a suggested amendment to the Rules, in order that the Commission might begin consideration of it at the Paris Congress.

Taxonomists are urged to write direct to the Commission, stating their views on these questions either with reference to this proposal or not.

As before, the wording of these proposals has been very carefully studied. Unless otherwise defined, the words must be taken literally in their customary sense and be interpreted strictly. It may be well to emphasize that Article 19 (Revised) deals with the problem of deciding on the spelling of new names *before* their proposal; Article 20.I. (Revised), with the spelling of a name as first published and the possibility of making subsequent changes in the spelling; and Article 20.II. (Revised), with subsequent spelling variations as such. The two articles have been reversed in position and number because of the obvious inherent sequence from formation through original publication to subsequent reuse.

Names using numerals (*2-punctatus, 16-maculata*) or letter symbols (S-*scriptus*, M-*litterus*) may be held to be invalid under the present Rules, and the subcommittee is inclined to this view. However, the existence in the literature of certain groups of animals of a very considerable number of these names, including many that date from the 10th edition of Linné, seems to make it impracticable to rule them out. We therefore suggest special provision for them as an exception to the general rule that only Latin characters may be used.

FORMATION AND ORTHOGRAPHY OF ZOOLOGICAL NAMES

Article 19

In forming new names, only Latin letters are to be used, regardless of the characters used in quoting the source from which the name is derived. The Latin letters in this sense are those of the classical Latin alphabet and the Neo-Latin k, j, and w.

The use of diacritic marks (such as ö, ñ, ø, č, and å) in forming names is optional, regardless of use in the source as quoted.

Recommendation: It is strongly recommended that, in forming new names, any diacritic marks be omitted or replaced by standard substitute letters (such as ue for the Germanic ü and aa for the Scandinavian å), as the use of diacritic marks by subsequent workers may be impracticable because of differences in type fonts.

Example. If an author desires to dedicate a genus to the Swedish scientist, Stål, and a species to the Czech scientist, Kříž, he should employ such simple forms as *Stalia* (or *Staalia*) and *krizi*. The forms *Stâlia* and *křiži* are not recommended but are not to be rejected on this account.

Example. A name dedicated to Müller may be written *Mulleria, Muelleria*, or *Mülleria* at the author's choice or as circumstances dictate. (Note: This requires that Article 35,a and Opinion 147,1,a be amended to include words differing only in the use of ue and u, aa and a, or diacritic marks.

Names may be formed with a numerical prefix. The prefix should be the combining form of the Latin word for the cardinal number, written in Latin letters, but if written with an Arabic numeral, the name is not to be rejected on that account.

Example. A ten-spotted animal may be named *X-us decim-maculatus.* The use of *X-us 10-maculatus* is permissible but not recommended.

The use of a symbol prefix to show the shape of a marking or structure is not recommended, but, if the symbol is in the form of a Latin letter, such names are not to be rejected.

Example. Letter symbols such as V-*nigrum*, X-*maculatus*, and *C-luteum* are permissible, but ⊥-*signatus*, ∞-*maculata*, ⸮-*notata*, and Δ-*album* are not acceptable and have no status under the code.

Article 20

(I) The original orthography of a name is to be preserved unless it can be demonstrated in the original publication itself that there has occurred an inadvertent error, such as a lapsus or a copyist's or printer's error. The following are not to be construed as errors: incorrect transliteration, misuse of connective letters, and differences between the source and the name resulting from the application of Article 19. [See Opinions 8, 26, 36, 60, and 70.]

(a) When demonstrable in the original publication, such inadvertent errors in original spelling are correctable and are to be treated as if corrected wherever they occur; the corrected spellings are justified emendations and take the place of the original (erroneous) spellings in all respects, including date and authorship. The erroneous spellings have no separate status in nomenclature, do not preoccupy, are not available as replacement names, and never acquire validity by citation in synonymy. [See Opinion 26.]

(b) If an original spelling is suspected or claimed to publication itself, the original spelling is not subject to be erroneous, but there is no proof of error in the original change, even by the original author. [See Opinion 34.]

(c) If, in the original publication of a name, two or more spellings are used, without compelling evidence as to which is in error, the spelling employed by the first subsequent writer is to be adopted.

(II) In subsequent publications variant spellings may occur either through intention or misadventure. For the purpose of this section emendations are defined as changes that are originally stated to be intentional, or are demonstrably so; errors are any changes that are not emendations, including those of doubtful status which cannot be demonstrated from the original publication to be emendations.

Subsequent variant spellings are:

(a) Emendations that are justified under Section I above (see Ia); or

(b) Emendations that are not justified under Section I above. Such emendations have status as separately validated names with their own date and author; they are junior objective synonyms of the name in its original form; they are available as replacement names; they preoccupy any later names of the same spellings; and their authors are those who proposed them as emendations. [See Opinions 34, 120, 125, and 148 (with supplementary note).]; or

(c) Errors, as defined above. These are correctable and are to be treated as if corrected wherever they occur. They have no separate status in nomenclature, do not preoccupy, are not available as replacement names, and never acquire validity by citation in synonymy. [See Opinion 29.]

Example. The generic name *Oxytelus* (Coleoptera) has been written erroneously as *Cxytelus, Otytelus, Orytelus, Oxitelus, Oxyletus, Oxyteles, Oxyteius, Oxytelius, Oxytellus, Oxeotelus, Oxytetus,* and *Oyxtelus.* These are all to be corrected and have no separate status.

Example. In 1833 Germar (*Rev. Entomol.*, 1, 175) published the name *Dictyophara* (Homoptera). Among the numerous variant spellings of this name that have occurred is the lapsus *Dictyonota* of de Seabra 1930 (*Arq. Secc. Biol. Par.*, 1, 347). This lapsus may have been caused by association with *Dictyonota* Curtis (Hemiptera), with which insect it could not have been confused. The error is to be corrected and has no separate status in nomenclature. Or,

(d) Omission or addition of diacritic marks or the substitution for them of standard letters. Wherever these occur, they are not to be treated either as errors or as emendations but as permissible variations. As in Article 19, elimination of diacritic marks is recommended. Or,

(e) Translation of a numerical prefix into an Arabic numeral, or conversely, writing out a number in Latin characters. These are permissible variations, and the two forms are in every way coordinate. Either form preoccupies the other as well.

Example. Sexmaculatus may be written *6-maculatus*; *16-punctatus* may be written *sedecempunctatus* or *sedecem-punctatus.*

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Why Some Crop Plants Yield More Than Others

Occasion for this note is a recent paper by Kiesselbach (*J. Amer. Soc. Agron.*, 1948, 40, 216–236), who shows that corn agrotypes with starchy endosperms are greatly superior in yielding ability to those with sweet endosperms. He finds an explanation therefor in a hypothesis to the effect that carbon accumulation by the plant is influenced inversely by a concentration of water-soluble polysaccharides within the vegetation organs; in varying degree these carbohydrates block the capacity for carbon accumulation and yield, the blocking being least in the starchy and greatest in the sweet types. Therefore, yield depends on the gene that determines whether the endosperm is to be starchy or sweet.

This hypothesis will not be disturbed here except to point out that there are differences in yielding abilities (quantities of plant life) in all the families of plants that have furnished agrotypes for man's use—Gramminae, Leguminae, Chenopodiae, etc. It is highly desirable that plant geneticists and plant breeders should have a universal indicator of quantity of plant life—one that would combine certainty with convenience.

TABLE 1

NITROGEN AND YIELDS OF SUGAR CANES

Variety of sugar cane	Lbs of dry substance/acre	% of N in dry substance	Lbs of N in the crop	Lbs of dry substance/lb of N
	I	II	III	IV
Newer varieties				
POJ 2878	66,284	0.285	189.0	350.8
POJ 2714	65,307	0.290	189.3	344.9
JOJ 36M	68,599	0.290	199.0	354.8
Averages of new group	66,730	0.288	192.0	350.1
Older varieties				
BH 10(12)	64,509	0.306	197.3	326.8
Cristalina	58,979	0.318	197.3	314.5
Bourbon	52,529	0.356	187.1	280.9
Averages of old group	58,672	0.327	190.8	307.4

Such a universal indicator is available and has been available for 20 years in the inverse yield-nitrogen law. This law, which pervades (so far as is yet known) the entire kingdom of plants that have roots in the soil, takes care of all cases, regardless of water-soluble or insoluble carbohydrates or other nonnitrogenous plant products. The inverse yield-nitrogen law is to the effect that the yields of all agrotypes, without any clearly proved exceptions to date, are inversely proportional to the percentage of nitrogen contained in their whole dry, aboveground substance. It is shown below how Kiesselbach's data conform to this law. But first, two classic examples