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EDITORIAL

Tradition for Better or Worse

For many a young person there is nothing worse than a grumpy old curmudgeon with opinions steeped in tradition and a "we have always done it that way" attitude.

Call me guilty.

Now in my seventh decade of life with some fifty years of experience writing botanical papers I bring a modicum of experience to the subject, and being one of the "old school" the baggage includes a lot of established tradition that dates back centuries. This is not to say that I am laboring on this editorial on an old manual typewriter with a faded ribbon, technology is something all of us embrace for it often saves time and resources. Rather, I am talking about the traditions established by botanists on how information is presented when written. Again, I am not suggesting publications should only be in the form of a hard copy, quite the contrary as I am a firm supporter of electronic publication.

By tradition I refer to such established, time-tested tenants as contrasting, dichotomous statements in keys presented in a form with the most obvious and stable and persistent features first, followed by those that are less so. Descriptions of plants should also be constructed in such a way that one should give the overall aspect of the plant (herb, shrub, tree, annual, perennial) first and then proceed with morphological features from the base of the plant upward (roots, stems, leaves, inflorescence, flower, fruit) treating each from the outside inward. Of course biochemical, anatomical, micromorphological, and even genetic and sequence features can be added, in their appropriate places, as necessary. What is critical is how that information is presented because, in botany, there are established traditions that date back to the Swedish naturalist, Carl Linnaeus, who formulated these basic concepts in 1735!

In William T. Stearn's now classical book *Botanical Latin*, he has two chapters (XIII and XIV) devoted to how to construct diagnoses and descriptions. As this is a book that *all* plant taxonomists should have in their personal library, it would be wise for those not familiar with the contents of these two chapters to become thoroughly acquainted with their concepts before ever attempting to write a diagnosis or a description, and certainly well before submitting a manuscript. For the uninformed, I will mention that there are two kinds of diagnoses, differential and essential. The first briefly states the differential features between two organisms while the second accounts for the essential features that distinguishes that organism from all others in the same taxonomic group. What is critical is that a diagnosis is short and written in the ablative.

Yes, one *must* have some concept of grammar to do proper systematic botany!

When describing a taxon (see below) the length and detail of the description vary according to the nature of the plant group. Ideally, a description accounts for all aspects of every part of the plant, but in reality this can never be achieved. In general, a detailed generic description allows the author to adopt a more abbreviated species description; likewise, a detailed species description means that those of infraspecific ranks can be less detailed as well. This is equally true for taxa above the rank of genus.

Descriptions are far more complex than most imagine. First and foremost *descriptions must be parallel* in that each feature must be accounted for in the same order of presentation in each

description of every name or epithet at the same rank even if the feature is not present in some members of the group. This is particularly true in monographs, but is exceedingly useful in floras where the user not only relies upon a key but often compares descriptive features not mentioned in the key. Second, the *descriptive nomenclature must be of the same class* to promote a direct comparison, and equally informative. The use for a term like "tomentose" can be coupled with "villous", but if one were to use "hairy" instead of "villous", then the two terms are not comparable because the former is a specific type of hairiness.

There are two format styles for descriptions. In one, the description is broken into a series of individual sentences with each sentence starting with a noun denoting a primary feature, such as plants, leaves, stems, inflorescence, flowers, and fruits. Within each sentence there are secondary nouns denoting a feature of the primary noun. For example, a sentence starting with the word "Leaves" logically could be subdivided into petiole and leaf blade. Descriptions of this kind, traditionally, are written in the nominative: Leaves alternate; petiole 1–2 cm long; leaf blade elliptic. Because such descriptions are always in the nominative, modifications of the secondary features are also given in the nominative: Leaves alternate; petiole 1–2 cm long with marginal hairs; leaf blade elliptic with a cordate base and a mucronate apex. Naturally, some primary and secondary nouns may be modified with a series of adjectives: Leaves alternate or proximal ones opposite, tardily deciduous.

Such descriptions were often published as individual paragraphs, and thus this format is often termed the "paragraph format." Today, the descriptions are not broken up into paragraphs but are clearly denoted by the first word being in bold. An example, the American species *Eriogonum microthecum*, can be described as follows:

Plants subshrubs or shrubs, erect to spreading, not scapose, 0.2–1.5 dm tall, (0.6) 1–13 (16) dm across, white- to tannish-tomentose, floccose, or glabrous. ***Stems*** spreading to erect, typically without persistent leaf bases, up to ½ height of plant; caudex stems absent or spreading; aerial flowering stems erect to spreading, slender, solid, not fistulose, 0.05–1.5 dm long, lanate, tomentose, floccose, subglabrous, or glabrous. ***Leaves*** cauline, 1 per node or fasciculate; petiole 0.1–0.5 cm long, tomentose to floccose or glabrous; leaf blade usually elliptic, sometimes linear to obovate, 0.3–3.5 cm long, (0.07) 0.1–1.2 cm wide, tomentose abaxially, less so or glabrous adaxially; margins occasionally revolute. ***Inflorescences*** cymose, compact, often flat-topped, 0.5–6 (12) cm long, 1–10 (13) cm wide; branches dichotomous, whitish-lanate to brownish- or reddish-tomentose to floccose or glabrate, infrequently green or gray and subglabrous or glabrous; bracts 3, scalelike, linear to triangular, 1–5 mm long. ***Peduncles*** absent or mostly erect, slender, 0.3–1.5 cm long, tomentose to floccose. ***Involucres*** 1 per node, turbinate, (1.5) 2–3.5 (4) mm long, 1.3–2.5 (3) mm wide, tomentose, floccose, subglabrous, or glabrous; teeth 5, erect, (0.3) 0.5–1 (1.7) mm long. ***Flowers*** 1.5–3 (4) mm long; perianth yellow or white to pink, orange, rose, red, or occasionally cream, glabrous; hypanthium 1/5–2/5 length of perianth; tepals essentially monomorphic, oblong to obovate; stamens usually exserted, 2.5–4 mm long; filaments sparsely to densely puberulent proximally. ***Achenes*** brown, 1.5–3 mm long, glabrous.

The alternative, often termed the "sentence format," is a single, long sentence that is written in both the nominative and the ablative. A semicolon, rather than a period, separates the primary nouns with their general features denoted in the nominative. Secondary nouns are denoted by a shift from nominative to ablative. This is easy to recognize when the description is in Latin, but in English this shift is signaled by the words "the [noun]…" In classical Latin, the comma typically denoted the shift and otherwise is not used, but in English the comma is much more common and the shift is denoted by "the." Tertiary nouns are often expressed after a word like "with."

Thus, using a portion of the above description, one would write: "… subglabrous, or glabrous; ***leaves*** cauline, 1 per node or fasciculate, the petiole 0.1–0.5 cm long, tomentose to floccose or glabrous, the leaf blade usually elliptic, sometimes linear to obovate, 0.3–3.5 cm long, (0.07) 0.1–1.2 cm wide, tomentose abaxially, less so or glabrous adaxially, with occasionally revolute margins; ***inflorescences*** cymose …"

The critical point is that if one is using the paragraph format the ablative is never used and all secondary nouns follow a colon.

Measurement can be spelled out as done in the above example, or shortened with the use of a multiplication sign. For example, instead of "0.2–1.5 dm tall, (0.6) 1–13 (16) dm across" this can be written "0.2–1.5 × (0.6) 1–13 (16) dm." This usage is becoming more common in modern publications.

Another point that I wish to mention is the misuse of the expression "taxa." This problem is hardly new as it was pointed out long before by Conrad V. Morton (1957a, b) and, if anything, "The misuse of the term taxon," to quote Morton's title, has only increased and become even more absurd. Whenever I see a paper wherein someone reports that a genus is composed of "47 taxa restricted to arid portions of North America" I am immediately reminded that here is one lacking the basic knowledge of botanical nomenclature and history who, if they only knew, would be embarrassed to demonstrate their ignorance so obviously in a publication.

I will not expand on this matter here, but strongly express to any reader who might have used the word "taxon" or "taxa" to read carefully Morton's paper and see if they actually know what the word means. You might be surprised!

Literature Cited

Morton, C. V., 1957a. The misuse of the term taxon. *Rhodora*, 59: 43–44.

Morton, C. V., 1957b. The misuse of the term taxon. *Taxon*, 6: 155.

Stearn, W. T., 1983. *Botanical Latin*: *History, grammar, syntax, terminology, and vocabulary*. Ed. 4. Timber Press, Portland, Oregon: xiv+546.

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