Botanist's Corner: Name Changes I

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BOTANIST'S CORNER



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"Confound it! Another plant name change. No sooner do I learn a plant's scientific name than those botanists have to go and change it. Why do they do it?"

This seems to be a common situation for laymen who are seriously interested in plants and who make an effort to learn their Latin names. Indeed, to many people the mere thought of hearing, much less learning, a long Latin name is enough to make them lose confidence, and interest. While it may be true that some Latin names are long and seemingly unpronounceable, there are quite a few with which we have become relatively comfortable as common names, such as *Rhododendron* and *Chrysanthemum*. I must admit that even I have had some trouble pronouncing and getting used to such carnivorous plant names as *Polypompholyx!*

Many laymen would prefer to stick with common names for all plants which they encounter, and this may suffice in many instances where the common names and the plants are unambiguous. Such may be the case when referring to *Utricularia* as bladderworts. However, this brings us to one of the real reasons for writing this article, and one of the most belabored topics in botany with which laymen and professionals alike are constantly confronted. That is, the fact that common names are most often not precise enough to specify the exact plant to which you may be referring, at all times and all places. Because they are products of local usage and folk taxonomy, several common names may have originated which refer to the same plant in different parts of the country; the same common name may equally be applied to different plants in different regions. A familiar example which would encompass both situations just mentioned would be the common name for the genus *Sarracenia*: Pitcher Plants, Trumpets, Fly-traps, Huntsmen's horns, Bog-bugles, Dumb-watches, Watches, Eve's Cups, and Buttercups. Depending on which common name you use, you may or may not have a clear idea of what is being referred to; believe me, you may just run into any or all of these names if you talk with country folks in the regions where these plants grow. As you may know, Buttercups are generally members of the genus *Ranunculus* (related to larkspur and clematis); but they may also be members of the genus *Narcissus*, and may be called Daffodils. Fly-traps may, of course, be referring to *Dionaea*, Venus' Fly-trap. You see how confusing it can become. Of course, common names will always be used, and I am definitely *not* against them (because they are colorful and usually descriptive); but we must recognize their limitations and try to understand that scientific names should be used in conjunction with common names, especially in writing, in order to avoid ambiguity and misleading information.

Now that we know that the exclusive use of common names can lead to confusion, let us go back and examine the purpose for names in the first place. The purpose of a name, *any* kind of name, is to facilitate communication, to aid in talking and writing about something. It allows us to refer to a specific thing without having to go through a long description. It seems logical, then, that for a name to fulfil its designated use, it must apply to only one object, no matter who uses the name, and conversely, that object must have only one name. Thus it is with scientific names, which enable us to track down all available information about the plants we may be interested in. In order that scientific names may be made and used correctly, the International Code of Botanical Nomenclature (ICBN), which should be accepted and followed by all legitimate botanists and laymen the world over, sets forth the rules which govern the formation and usage of all scientific names of plants (except strictly cultivated plants, which have a separate code). This should lead to a certain degree of uniformity and stability.

A little bit more background might be appreciated before we get on to our main concern of name changes. Scientific names are, of course, in Latin. This is specified by the Code and must be used the world over no matter what other languages or alphabets are used (this is because Latin was the language of European scholars during the 1600-1700's when botany was becoming a formal science). Thus, we would be able to recognize the Latin name of a plant in a book written in Chinese, Japanese or Russian, even though the rest of the text would be in an unfamiliar language *and* alphabet. Just think about the poor Japanese botanist who not only has to learn some Latin grammar and meanings, but who also has to learn the Roman alphabet with which we are automatically familiar!

As a result of our acceptance of the *binomial* ("two name") system of nomenclature developed by the very famous and important Swedish botanist Linnaeus (1707-1778), the scientific names of plants consist of basically two words, the genus name and the

specific epithet (often erroneously called the species name). For example, the scientific name of yellow pitcher plant is *Sarracenia flava* (Latin names are always italicized in print, or underlined in writing and typing). *Sarracenia* is the genus, or generic name; *flava* is the specific epithet, and grammatically it is an adjective modifying the generic name. *Sarracenia flava* is thus the name of the species, or one particular type of the several pitcher plant types in the genus *Sarracenia*. The species name, which may be abbreviated *S. flava*, is made up of a combination of the generic name and the specific epithet. (The family name, the category to which genera belong, in this case would be the *Sarraceniaceae*, or pitcher plant family. It is analogous to the Smith family, with its members Smith, John; Smith, Judy; and Smith, Johnny analogous to the scientific name *Sarracenia flava*). Hopefully both parts of the scientific name will convey some useful or interesting information about the plant it represents to help make it easier to remember. In this case, *Sarracenia* is the Latinized form of the man's name, Sarrazin, who first discovered the purple pitcher plants in Quebec about 1700; *flava* (correctly pronounced fla'-va, *both* a's as in car) is Latin for yellow. There are rules for Latin pronunciation, but they are sometimes disregarded in favor of personal preference. In general every letter and every syllable is enunciated, with emphasis on the third from the last syllable. For additional information on the meanings of the scientific names of some CP's see Don Schnell's new book on the CP of US and Canada.

In some cases species may be broken down into subcategories which may be designated as subspecies, variety, or form; and a certain plant may thus have a name consisting of three parts, such as *Sarracenia purpurea* subspecies (abbr. ssp.) *venosa*, the southern counterpart to the northern *S. purpurea* ssp. *purpurea*. In this case, the species *S. purpurea* is considered by many to contain two recognizably different types. While I personally believe that these additional categories have specifically defined applications, their use can be quite controversial, arbitrarily applied, and otherwise questionable because the *rules* do not govern their exact application; but they do exist among CP names, and you will run across them constantly.

We will not go further into the intricacies of the Code as it applies to the definitions of names. For an excellent discussion of this subject see C. Jeffrey, 1968. *An Introduction to Plant Taxonomy*, esp. Pp. 62-93.

REVIEW OF RECENT LITERATURE

Anon. (We would be, too!) 1976. Venus Flytraps. Science Digest, Dec., p. 81-2.
This is the sort of few paragraphs one should avoid and is herein reviewed as such. Typical of most of the "Digest" type magazines, and in an effort to be "cutesy," the paragraphs are full of misinformation and misguidance for those who are likely misguided already. One gains the impression that the plant trots about the house like the family cat, fending off vermin. One also learns that when he goes on vacation, he should simply put his plant in the refrigerator. One also wonders if he or she should be angry or just sad over this sort of trash.

Berglund, E. R. & A. C. Mace, Jr. Diurnal albedo variations of black spruce and sphagnum-sedge bogs. Can. Jour. For. Res. 6(3):247-252. 1976.
Light measurements on two types of bogs were taken in northern Minnesota, USA. The black spruce stand's diurnal albedo was parabolic with a maximum at 1200 h (7-8%) and decreased. Greatest variation was in the summer months. The sphagnum-sedge type bog showed a M-shaped diurnal variation with minimum at 1200 h between two maxima. Maxima occurred as a result of specular reflection and changes in solar radiation quality.

Carlquist, S. Wood anatomy of Roridulaceae: Ecological and Phylogenetic implications. Am. J. Bot. 63(7):1003-8. 1976.
The wood anatomy of *Roridula* (a non-carnivorous plant) is compared to *Byblis* and found to have very similar secondary xylem features. The author feels it should be excluded from *Droseraceae*.

Chandler, G. E. & J. W. Anderson. Studies on the nutrition and growth of *Drosera* species with reference to the carnivorous habit. New Phytol. 76(1):129-41. 1976.
Drosera whittakeri was grown on sand with inorganic salt solutions lacking either nitrogen, sulfur, phosphorus or microelements. Application of fruit flies to the leaves were applied to plants growing on media deficient in P or microelements, there was no effect on growth but the phosphorus content of the plant increased significantly. Insects could not serve as a carbon source for photosynthesis. The best growth of *D. binata* and *D. whittakeri* occurred on plants fed fruit flies while growing in a nitrogen deficient medium. Nitrates in the nutrient medium inhibited growth. Optimum growth of these *Droseras* was not achieved by growing plants on complete nutrient solution in the absence of insects. Phosphorus was very important in the tuberous *Drosera* both for early emergence and for development of new rhizomes on which new tubers formed.