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# How *Cornus Florida* Got its Name

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# How *Cornus florida* Got Its Name

Article and illustrations by W. John Hayden, Botany Chair

In 1753, Swedish botanist Carolus Linnaeus was the first to apply the scientific name *Cornus florida* to the plant we know as Flowering Dogwood. That simple and straightforward declarative sentence belies the complexity and obscurity of how Linnaeus named this and nearly 6,000 other plants in his seminal work, *Species Plantarum*. To understand what Linnaeus actually did requires a dive into the arcane world of 18th-century botany. And that is what this article endeavors to accomplish, to explain how *Cornus florida*, the 2018 VNPS Wildflower of the Year, got its name.

Before *Species Plantarum* was published, scholarly names for plants were polynomials, essentially descriptive phrases, in Latin, used to distinguish each plant from all others known at the time. Polynomial names are (and were), downright cumbersome. And to make matters worse, they were not standardized. Often, different botanists would describe the same plant by emphasizing different features, coining different polynomials for the same plant. It may be a surprise to learn that Linnaeus, the originator of binomial scientific names of organisms, also used polynomials in his early works. In fact, these cumbersome phrase names are at the heart of each plant recorded in *Species Plantarum*. In essence, the first Linnaean binomial names were derived from polynomials.

*Cornus florida* is the first of five species of *Cornus* included in *Species Plantarum*, and Linnaeus's polynomial for it is *Cornus arborea, involucri maximo; foliolis obverse cordatis*, reasonably translated as, "Dogwood trees, with the largest involucre; involucre bracts obversely cordate." The only other large-bracted species

of Dogwood known to Linnaeus were *Cornus canadensis* (Bunchberry) and its European counterpart, *Cornus suecica*. Of these three, *Cornus florida* easily stood out as the species with the largest involucre. The other descriptive element in this polynomial pertains to bract shape; "obversely cordate" refers to the notch at each bract's apex, i.e., the portion that developed first and served as a winter bud scale. Most



*Cornus florida* flower buds surrounded by four involucre bracts derived from overwintering bud scales.

leaves with a cordate (heartlike) shape are widest at the base with a notch where the blade meets the petiole; in Flowering Dogwood's bracts, however, the widest portion is above the middle, and the notch is at the apex, hence these bracts are obversely cordate.

Following this phrase name for Flowering Dogwood, Linnaeus cites, in highly abbreviated form, other published works that used the same name for this plant:

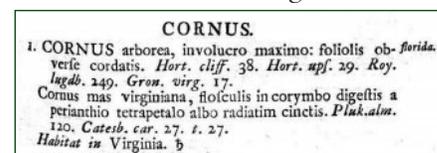
- *Hort. cliff.* 38. *Hortus Cliffortianus*, published by Linnaeus in 1737. Johannes Burman Clifford was a wealthy Dutch merchant who had amassed a large collection of herbarium specimens and living plants in his gardens and hot houses. Clifford hired Lin-

naeus to compile a catalogue of his living plant collections, published as *Hortus Cliffortianus*. *Cornus florida* is treated on page 38.

- *Hort. ups.* 29. *Hortus Upsaliensis*, published by Linnaeus in 1748. For many years, he practiced medicine and taught botany at Uppsala, Sweden. In 1741 he took on the responsibility of overseeing its botanical garden, which he reorganized to represent his ideas about plant relationships. *Hortus Upsaliensis* is his catalog of plants in this garden; Flowering Dogwood appears on page 29.

- *Roy. Lugdb.* 249. *Flora Leydensis Prodromus*, published by Adriaan Royen in 1740. Royen was a professor of botany at Leiden and well acquainted with both Clifford and Linnaeus. Evidently, *Cornus florida* was cultivated in Leiden, known to Royen, and included on page 249 of his Leiden flora. One might wonder how "Lugdb." refers to a flora of Leiden. At one time Leiden was associated with the location of an ancient Roman outpost, a fort called *Lugdunum Batavorum*; it is now understood that the ancient fort lay not within the city limits of Leiden, but some short distance away.

- *Gron. virg.* 17. *Flora Virginica*, published as two volumes by Jan Frederik Gronovius in 1739 and 1743, based on the work of colonial Virginia botanist



The entry for *Cornus florida* in *Species Plantarum*, consisting of two polynomial names, references to earlier publications using those polynomials, and the marginal note, "florida," which, in combination with the genus name, forms the binomial for the 2018 VNPS Wildflower of the Year.

John Clayton. Flowering Dogwood appears on page 17.

The entry in *Species Plantarum* includes a second polynomial for *Cornus florida*: *Cornus mas virginiana, flosculis in corymbo digestis a perianthio tetrapetalo albo radiatim cinctis*. That this phrase name is listed second indicates that Linnaeus considered it synonymous with (and secondary to) the first. This synonym is translated as follows: “Cornelian dogwood from Virginia, small flowers arranged in corymbs surrounded by a perianth of four radiating white petals.” *Cornus mas*, the Cornelian Cherry, is an edible-fruited Dogwood native to Europe and southwest Asia; like *Cornus florida* it has small yellow flower clusters subtended by four bracts, but in the European plant the bracts are much smaller and yellow, and the flowers are not as tightly crowded together. In essence, this second polynomial describes Flowering Dogwood as a Virginian version of Cornelian Cherry. (Of course, we now know that the bracts are not technically floral organs, so reference to them as perianth is, morphologically, incorrect). As with the first polynomial, what follows are references to books that use this phrase name:

- *Pluk. alm.* 120. *Almagestum botanicum*, published by Leonard Plukenet in 1696. Plukenet was royal professor of botany and gardener to Queen Mary of England. Botanically, he is best known for his lavishly illustrated books of exotic plants. His first three volumes were published under the title *Phytographia*. The fourth volume, which included *Cornus florida* in plate 120, was originally titled *Almagestum botanicum*. Similar volumes with other titles followed, but all were republished in 1720 under the original name, *Phytographia*. Plukenet’s *Almagestum botanicum* probably contains the earliest published refer-



ence to Flowering Dogwood in the botanical literature. Two flower clusters of the European *Cornus mas*, Cornelian Cherry. Notice the four small bracts derived from winter bud scales and the relatively loose aggregation of small individual flowers. Generic similarity between *Cornus mas* and *Cornus florida* was readily apparent to European botanists of the 18th century.

ence to Flowering Dogwood in the botanical literature.

- *Catesb. car.* 27. t. 27. *Natural History of Carolina, Florida, and the Bahama Islands*, published by Mark Catesby; *Cornus florida* appears in plate 27 (with a Mockingbird) of volume 1, published in 1730.

The first portion of the last line of the *Species Plantarum* entry, *Habitat in Virginia*, is self-explanatory. Following, there is a cryptic symbol. That symbol, widely used in medieval alchemy for the element lead, was also associated with the planet Saturn; in *Species Plantarum*, Linnaeus adopted it to indicate a woody plant.

Linnaeus was meticulous in his use of polynomials and, excellent scholar that he was, took great pains to align the various polynomials used by others during the preceding half century. His painstaking adherence to polynomials was fully consistent with that of his contemporaries as well as his own, earlier, works. Polynomials were, quite simply, the standard of the day. But it must have been taxing to keep some 6,000 cumbersome phrase names and their equally complicated synonyms straight. And we must remember that ongoing 18th-century European colonialism (or, if you pre-

fer, imperialism) meant that scientific exploration of global biodiversity was poised to bring to light staggering numbers of plants.

It is tempting to suppose that Linnaeus realized that traditional polynomials were inadequate to the task of providing unique and universally accepted names for the profusion of plants that grace this good Earth. But we can only speculate, because we have no explanation from Linnaeus himself. What we do have is the fact that Linnaeus did initiate binomial names. Perplexingly, what he did looks like an afterthought. Having assembled the catalogue of polynomials for all the plants known to European botany at the time, he added a single word, usually an adjective, in the margin opposite the first (i.e., the preferred) polynomial for each species included in *Species Plantarum*. For Flowering Dogwood, this is the word *florida*, aligned with “*Cornus arborea, involucreo maximo; foliolis obverse cordatis*.” Notice that *florida*, like all the species epithets initiated in *Species Plantarum*, appears in slightly smaller type than the bulk of the text.

We will probably never know whether introducing binomial names was truly an afterthought, or whether it was part of Linnaeus’s plan all along. Whatever his motivation, the result was brilliant: binomial names are much easier to remember and yet are descriptive, albeit succinctly so! Botanists never looked back; with the publication of *Species Plantarum* and its marginal, one-word, descriptive insertions, binomial names became firmly established. Zoology followed suit five years later with the 10th edition of Linnaeus’s *Systema Naturae*. Plants, notably, were first, and our Wildflower of the Year, *Cornus florida*, was in the first wave of binomial names to be used in the study and documentation of biodiversity. ❖