



ROOTING AROUND THE FAMILY TREE

By Martin Král

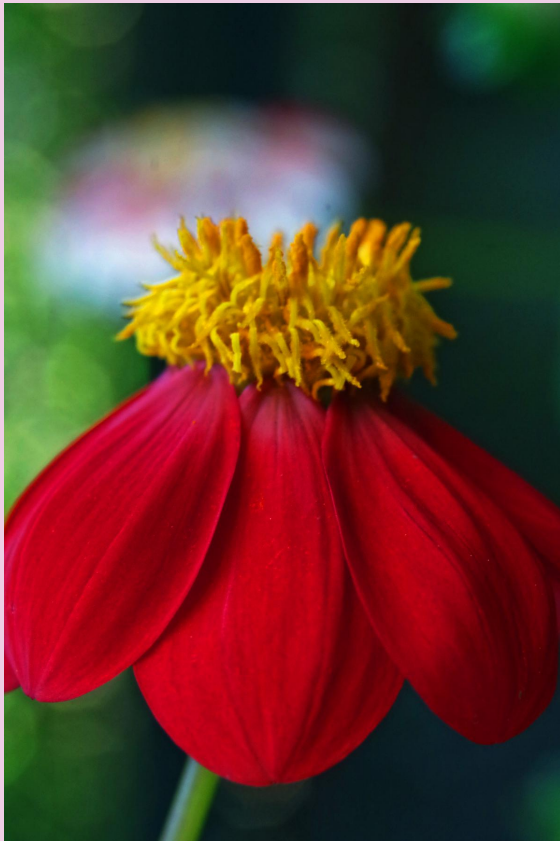
In a vexing (and entirely illogical) urge to complement my dahlia plot with a companion planting of blue flowers, I chose years ago to plant Michaelmas asters alongside the driveway. Thinking that every dahlia grower aspires to bring blues to the vibrant palette of dahlias, the display in September so confirmed my choice, that I kept growing these perennial asters for many years. * In time, though, the light blue border got sparser, so I sought to replace the lost plants. I searched in vain for the same variety, only to find that the genus *Aster* had undergone a major revision by taxonomists that placed my blue blooms not only under Lesser Asters but also within the unpronounceable species designation of *Symphyotrichum*!

My two towering centenarians in the back yard will only concur that taxonomy is an inexact effort to classify all life forms, with revisions or deletions making a mockery of 'hard science.' Those Douglas firs had experienced at least 20 reclassifications in the past, having been called a *Picea* (spruce), then an *Abies* (fir) – among others - before dropping into an uncomfortable Northwest relationship with Western hemlock (*Tsuga*) as the false hemlock *Pseudotsuga menziesii*. Drat those taxonomists.

Why plant names undergo changes occupies botanists and gardeners alike. Stemming from Carl Linnaeus, the Swedish scientist responsible for classifying every living thing, we benefit from its precision. It is a valorous effort to provide some rigor to naming by avoiding the confusing common names we give to flora and fauna. The botanical Latin designations are universally understood, if not always pronounceable. Often they refer to significant aspects of a plant, such as locale, bloom color, or foliage. The beauty of this is that Latin, as a 'dead' language, brooks no grammatical changes.

Dahlia taxonomy recognizes at least 42 native species, with a couple more being considered for adoption. But all hybrid dahlias scientifically are designated *Dahlia x variabilis* to attest to their cultivated status and the great variety of forms, colors, and habits. When the cleric José Cavanilles raised the first dahlia in 1789 at Madrid's Royal Botanical Garden, he named it *Dahlia pinnata* in honor of the Swedish regional researcher Anders Dahl (who died earlier that year without ever having seen dahlias). It was no personal relationship. However, Cavanilles corresponded with Dahl's mentor, the nobleman Carl Peter Thunberg, a famous explorer, who related the death of the Linnean disciple.

Dahlia pinnata appeared in 1791 in Cavanilles' first volume of his "*Icones*". A couple of years later, in the third volume the author provided illustrations of two other dahlias, naming them *D. coccinea* and *D. rosea*. The *D. pinnata* image showed a semi-double bloom, which indicates that it was already a hybrid, not a species. For that reason alone, it is not listed in the current dahlia taxonomy. On the other hand, *D. coccinea* is considered one of the original parents of all hybridized dahlias despite its morphological complexity: wide-ranging in Mexico, it has a bloom color range from buff to scarlet, and it also displays variations in petal shape (as illustrated in these photos).



TWO EXAMPLES OF *D. COCCINEA*'S VARIABILITY

Thunberg may not have been aware of the honorific naming, because he named a witch hazel species (*Dahlia crinita*) after Dahl in 1792. Little is known about Alexander v. Humboldt's distribution of dahlia species upon his return from Mexico in 1804. It was, nevertheless, (literally) a seminal introduction of new dahlias to European gardens. One of his correspondents, the director of Berlin's botanical garden Carl Ludwig Willdenow, thought that Cavanilles had assigned the name Dahlia incorrectly to the New World import, since the Linnean taxonomic rule of priority required that the earlier documentation of a species took precedence over another. So he renamed his plant Georgina after another scientist, whose death in 1802 also precluded Johann Gottlieb Georgi ever having met a dahlia. (And yes, dahlias are still referred to as georginas in parts of Eastern Europe today.)

Willdenow also contributed more confusing names to the dahlia's family tree after having to acknowledge that Cavanilles original treatise with a description of the first dahlia took priority in the emerging taxonomy. He determined that *D. rosea* was essentially identical to *D. pinnata*, and then introduced new varieties *D. lilacina* and the white *D. pallida*. What happened then was an explosion of alleged species naming; at one time more than 85 names were given to dahlia taxons, leading to duplicated and misidentified botanical introductions in the genus.

Other botanists, most notably Augustin de Candolle (in 1810) and later Renato Desfontaines (1829) sought to organize the growing confusion over dahlia species by categorizing them in an effort to separate these from the many new hybrids in European collections. Several more recent attempts at classification were successful in establishing more concise definitions along botanical principles. Those eliminated some of the synonyms and erroneous species designations, but more deliberate work also needed a firm commitment to further exploration in Mexico.

The European dahlia world was titillated by the presentation of *D. juarezii*, as this first cactus form was named by its introducer, the Dutch raiser J. T. van den Berg in 1871, honoring Mexican president Benito Juárez - another just-deceased notable. Well, clearly shown in a gardener's

publication several years later, *D. juarezii* is indeed a cactus dahlia, but this double bloom also is a hybrid, so it does not appear on the dahlia family tree. Guesses as to its provenance are just that.

The evolution of plant chromosomal studies - and its DNA discoveries - led to a reclassification of the genus *Dahlia* based on that hard evidence, rather than just field or herbarium examinations. The 20th cent. work of E. E. Sherff (the leading authority on dahlia taxonomy until his death in 1966) inspired another American to pursue research onsite. His academic career provided the most comprehensive analysis of dahlia's family tree. Prof. Paul Sørensen made exhaustive studies of dahlia species and published them in his dissertation, as well as in academic publications. In his '*Revision of the Genus Dahlia*' he confirmed most of Sherff's observations and conclusions regarding his taxa.

Sherff had divided the genus into three sections of 18 species, according to chromosome count and other criteria. The largest number of species are now found in Section *Dahlia*, with so-called tree dahlias and those with finely divided foliage given their own classification sections. Of course, we also have the rare epiphytic *D. macdougalii* by itself, as Sherff noted. Particularly in the still-open question of the other parent of all hybrid dahlias (the one providing ivory, lavender, and purple rays in dahlias), Sørensen concluded that it was most likely his discovery of a new lavender-flowering species he called *D. sherffii* that was this primordial parent



D. SHERFFII AND D. SORENSENII

The family tree of Genus *Dahlia* was now more firmly established - or so it was thought. In 1996 the Danish team of Hans Hansen and J. T. Hjerting affirmed that some of Sherff's and Sørensen's determinations had merit, but others were controversial. They pointed to another newly discovered species, now named *D. sorensenii*, as the most likely partner of *D. coccinea*. The team also conducted field research together with Prof. Sørensen and Dr. Dayle Saar that resulted in several more species being added to the tree. Currently this research effort is being pursued by botanists and other scientists from Mexico's University of Guadalajara. Will they discover yet another species and propose it as the true companion to *D. coccinea* and confirm the ancestry of all cultivated dahlias? Or is this the start of a taxonomic family feud? Flummoxed, we ask: "Dahlia — who's your daddy?"

*If you read this far, I will reveal someday why - despite their family kinship - asters make terrible companion plants.

CHICAGO

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**Dahlia Talk Co-Authors
Martin Kral and Dianne Reitan
at the Rocky Reach Dam in Wenatchee, WA**

