

## The Beauty of Bloodroot

The garden truly awakens during the month of April. The once bare earth suddenly comes alive with a bevy of flowering bulbs and perhaps even a few spring ephemerals. Most gardeners understand how to effectively work bulbs into a garden, but many remain puzzled over the use of spring ephemerals. By definition, this group of plants emerge in early spring, flower, set seed and enter into dormancy by the start of summer, very similar to most bulbs. Their strategy is to complete their annual life cycle before the tree canopy is fully leafed-out and competition for sunlight and water becomes more intense. Unlike most bulbs, this group of plants can be more challenging to work into the garden since the declining foliage can be more of a distraction to the beauty of the late spring garden.

Fortunately, some ephemerals retain their foliage well into summer when there are ample floral distractions. *Sanguinaria canadensis*, commonly known as Bloodroot is just such a plant! A beautiful wildflower that erupts into color in March and April (as seen at right in early April in Northern NJ), it quietly enters into dormancy during the middle of summer.



*Sanguinaria canadensis* is a member of the Papaveraceae or Poppy Family and is the only species found within this genus. It is native to Eastern North America, ranging from Nova Scotia south to Florida and west to Manitoba and Texas. The name was crafted in 1753 by the Swedish botanist Carl Linnaeus (1707-1778) when he published his botanical opus *Species Plantarum*. *Sanguinaria* is from the Latin *Sanguis* meaning blood, referring to the blood red sap of the rhizomes. The species epithet pays homage to its northern habitat range.

From late March through April, the flower buds emerge from the rhizomatous root system and stretch upwards to 6-8" in height. Those buds appearing during the chill of March are often blushed with pink at the start, as seen in the image above. The flower bud and encircling leaf are initially protected by a pair of white bracts as they grow upwards from the rhizome and break through the soil. Once these bracts split open, the flower quickly pushes upwards to assume visual dominance while the leaf remains more restrained, clasping the base of the floral stem. The clasped leaves can be



seen above beneath the floral ‘canopy’. As the foliage slowly enlarges, it retains its clasping form for several days and has been likened to hands clasped in prayer! The snow-white flowers that appear in April reach 1½-2” in diameter, with 8-12 white petals encircling a boss of golden yellow anthers and a central, 2-lobbed stigma (as seen above right and in the closing image). The flowers are sweetly scented and attract numerous native bees,



including carpenter and mason bees searching for the protein rich pollen. Bloodroot does not produce any nectar. The flowers close at sunset and reopen after dawn when temperatures reach above 45°F, a process called nyctinasty. Plants developed this daily rhythm to protect the flowers from frosts or damage to the protein rich pollen by rain or late snows! Of course, this coincides with the time when most spring pollinators are active. Flowers bloom for 4-5 days, with the petals falling shortly after pollination. Initially, the stamens remain distanced from the stigma to prevent self-pollination. However, if pollination fails to occur within the first 3-4 days, the stamens will curl downwards to shed pollen on the stigma, as it is better to have potentially weaker seedlings through self-pollination than no seedlings at all! *Sanguinaria canadensis* forma *multiplax* ‘Plena’ is a double flowered form (pictured above). The anthers have become petaloid, creating a very attractive and ‘full’ flower that blooms for several days longer than the seedling forms. The petaloid anthers have no pollen to share nor do the flowers produce any seeds, relying solely on the slowly spreading rhizomes to expand the colony!



Following bloom, the leaf expands into a bold and very appealing 5-8” wide palmate leaf with 5-9 lobes around the margin, as seen above right. During those summers with consistent moisture, the foliage will linger well into August and often displays attractive golden colors as it declines (pictured above left on August 24<sup>th</sup> in NJ). During drier summers and especially during a drought, the onset of dormancy is in July. If you peer beneath the foliage during late May and



early June, 1½” long seed capsules can be seen, perched atop 4-8” long stems. The capsules taper to a point at either end and when the seeds are nearing maturity, their bulging outlines can readily be seen beneath the tightly stretched capsule wall. When the capsule splits open in early to mid-June in NJ, the brown to deep orange-red seeds are readily seen, along with another feature displayed by many plants – a food rich appendage called an elaiosome

(pictured above). Elaiosome is from the Greek *Élaion* or oil and *Sóma* for body. Rich in lipids and proteins, the elaiosome coevolved with ants as a means for cleverly enticing these insects to move the seeds to new locations. Attracted by the fats and proteins, ants usually carry the seed back to their nests where the larva dine on the energy rich attachment. Once devoured, the ants deposit the unharmed seed in refuse tunnels reserved for waste. Buried amongst a fertile mix of ant frass, decaying ant bodies and other organic waste, the buried seed is also protected from foraging mice or chipmunks. Although being buried in this concoction may not sound very appealing, to a seed it is nirvana and provides ample fertility for the germinating seed! If you wish to grow plants from seed, it is imperative to use fresh seed that has not been allowed to dry-out. Most of the seed is also double dormant and requires the chill of two winters interrupted by the warmth of one summer before germinating.



As mentioned, the name of Bloodroot, as well as the root of the genus name was inspired by the blood red sap of the rhizome, as seen at left. Rhizomes are horizontal, creeping stems located just below the soils’ surface, where they branch and expand to create large colonies. The red sap contains a toxic alkaloid named sanguinarine that also aids in preventing deer predation of the foliage and flowers. The severed rhizome is a startling sight and, on many occasions, I

thought I had cut myself after unknowingly slicing a rhizome! Contact of the sap with skin should be avoided, since the toxin will kill skin cells and result in unattractive skin deformation and lesions. Indigenous Native Americans extracted these red fluids for use as a dye to make colorful baskets and in pigments for paint. As an aside, if you do accidentally sever a piece of the rhizome, simply replant it right away, as it will readily form a new plant providing it has a bud. Dividing rhizomes with a growing point or bud is successful method of plant division.

Bloodroot thrives in humus rich woodland soils with a pH of 5-7 and a mulch of leaf litter. It also thrives in a broad range of temperatures, hardy from zones 4-9! It is a great garden plant for both its attractive spring flowers, which pair beautifully with numerous spring bulbs and the coarse foliage that follows. Although the flowers are relatively short lived, the coarse foliage remains effective for several months and provides an effective companion for the flowers of early and midsummer woodland plants, especially those that create a taller 'layer' for the woodland. Consider pairing it with Jack-in-the-Pulpit (*Arisaema triphyllum*), the white or pink flowered Woodland Peony (*Paeonia obovata*), the arching stems of Solomon's Seal (*Polygonatum biflorum*) or the summer blooming Black Snakeroot (*Actea racemosa*) and Doll's Eyes (*Actea pachypoda*). Naturally, the coarse foliage pairs beautifully with the delicate nature of ferns, such as Maidenhair (*Adiantum pedatum*) and Christmas Fern (*Polystichum acrostichoides*) or beneath the bolder foliage of Smooth Hydrangea (*Hydrangea arborescens*).

To its detriment, Bloodroot is difficult to grow in containers for retail purposes and is typically not seen for sale at garden centers, especially if it has gone dormant! However, the plants divide and transplant easily while in leaf or dormant and make great gifts from fellow gardeners. This is actually how I acquired my initial plant and once established, the colony will spread and naturalize readily from seed. Still uncommon in many Gardens, more gardeners need to become acquainted with this spring ephemeral and enjoy the distinguished 'Beauty of Bloodroot'!



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