

## Singing the Silvery Blues for the Winter Garden

January is a tough month for gardeners. The days are short, unpleasantly cold and occasionally fraught with ice and snow. The garden is quiet and relies mostly on evergreens for consistent color throughout the month.

Admittedly, finding good evergreen groundcovers and perennials is more of a challenge, especially if a color other than green is desired! Fortunately, there are several great selections from which to choose, such as *Euphorbia myrsinifera* or Donkey Tail Spurge, whose silvery-blue foliage adds cool color and interesting structure to the winter garden (as seen at right in December).



*Euphorbia* is a huge genus with around 2,100 species native to primarily the Americas, Mexico, Eurasia, Africa and Australia. A member of its own family, the Euphorbiaceae, the species are very diverse in appearance, ranging from small trees to cactus-like succulents to even leafy ornamentals such as Poinsettia (*Euphorbia pulcherrima*). Donkey Tail Spurge is native from the Balearic Islands off the coast of Spain, east to Italy, the Caucasus and Iran. The root of the name *Euphorbia* dates back 2,000 years to the Roman Empire. As written by the naturalist and soldier Gaius Plinius Secundus (AD 23/24–79), who is better known as Pliny the Elder, the genus name was coined by King Juba II (48 BC – AD 23). He served under Emperor Augustus as the client King of Mauretania (present day western Algeria and northern Morocco). His wife was Cleopatra Selene II, the daughter of Antony and Cleopatra! He was very well studied and had strong interests in natural history. His physician was Euphorbus, who treated the ailing King with a plant possessing strong medicinal properties, which was probably the species currently known as *Euphorbia resinifera*. Once healed and as a way of thanking his physician, the King named the plant Euphorbus in his honor. Centuries later, the Swedish botanist Carl Linnaeus (1707-1778) once again honored the physician by formally naming the genus *Euphorbia* in 1753!

*Euphorbia resinifera* was not the only species used medicinally. *Euphorbia myrsinifera* and many other members of this genus have served in medicinal roles and their common name of Spurge comes from their use as a purgative. These plants have also been long popular for their anti-inflammatory properties. The species name of *myrsinifera* was first penned by the Greek pharmacologist Pedanius Dioscorides (40-



90 AD) in his 5-volume medicinal treatise *De Materia Medica* (Of Medical Matter), in recognition of its similarity to Myrsine or Myrtle, another well regarded medicinal. Despite its many therapeutic and beneficial properties, the sticky white sap common to all members of *Euphorbia* is also known for causing skin and eye irritation and care should be taken when handling broken stems or leaves. Of course, this sap does have the beneficial quality of rendering the plant unpalatable to deer!

Donkey Tail Spurge is also a most attractive ornamental plant, reaching heights of 6-12" by widths of up to 2'. Plants consist of numerous 10-20" long stems that initially grow vertically from the central crown, with the silvery-blue foliage densely arranged in a whorl around the stem, as seen in the image above right. Gradually, the weight of the foliage causes the lengthening stem to fall to the ground, whereupon it continues to lengthen before the terminal 6-8" of the stem once again curves upward, re-establishing its upright habit. Plants grown in full sun will have the best form while those grown in light shade will have fewer and more floppy stems.

The attractive leaves are fleshy with a waxy or glaucous coating and look pleasing in combination with their light green, photosynthetic stems. This waxy coating causes water to coalesce into beads after a storm, an interesting yet often overlooked attribute. As mentioned, the 1-2" long leaves appear radially around the stems, with each round to obovate leaf coming to a sharp point at the tip. Although difficult to see through the mass of upright stems, the leaves along the prostrate portion of the stem usually fall by the wayside as



pictured above. When the stems are viewed individually, the leafless lower portion combined with the dense tuft of foliage at the tip gives an appearance similar to that of a Donkey's Tail and hence, the common name!



Starting in late March and continuing through May, plants yield clusters of 'flowers' among the unfurling golden foliage at the tips of year-old stems. The 'flowers' are actually structures called cyathia (cyathium for singular) and with slight variations, they are typical to all members of the genus. Each cyathium bears two rounded, golden yellow bracts that loosely resembles the foliage. Within the cyathium lies one central female flower and several surrounding male flowers, both perched atop a cup-like structure called an involucre and both lacking petals. The barely open bracts of the cyathia can be seen at left (tip of blue arrow) with the protruding, Pinocchio-like stigma of

the female flower (at the tip of the green arrow) the first to appear from within. At the very center a cluster of flowers are the first to appear, complete with the yellow nectar glands but lacking any protective bracts. Ultimately, a total of 10-12 cyathia appear at the tip of each stem.

Surrounding the male and female flowers are the 4 oblong nectar glands arranged around the rim of the involucre beneath. With a touch of imagination, the glands resemble light green sausages tied at either end with yellow string (as seen at the tip of the blue arrow at right). As seen in the image above, the stigma of the female flower emerges first, although it quickly droops under the weight of the enlarging ovary (as highlighted by the green arrow at right). Equally small are the 6-12 male flowers that emerge second but remain at the center since they lack the weight of the ovary! Each stamen bears 2 anthers and can be seen at the tip of the gray arrow at right. Since these female and male flowers are greatly reduced and lack both petals and sepals, they rely on the two showy bracts and the nectar glands for attracting pollinators.



By late May, flowering is complete and the bracts fade to a glaucous silver, appearing much like the foliage. At this point, the ovary and developing seeds have matured into a spherical capsule located atop a thick stem (as seen on the left), appearing much like a miniature water tower! The nectar glands also remain and transition from green to a bright orange, providing a nice ornamental touch (also seen at left)! When ripe, the seed capsules burst open and, through a process called

explosive dehiscence, the seeds are propelled to distances upwards of 14' from the plant. This action accounts for how the seedlings are often found far from the original plant. Fortunately, these seedlings can easily be transplanted back to where they were first intended to grow!

Following seed dispersal, the stems will die back to be either replaced by new stems or the entire plant will simply die. Following unusually cold winters, the stems can also die back to the crown and should be removed. In general, the plants are relatively short lived and it behoves the gardener to transplant the errant seedlings back to the original location, although the often seed into interesting spots where they could never be planted! In the wild, the plants are native to sun drenched and well-drained rocky and grassy terrain in zones 4-9. In western North America where growing conditions are ideal, the plants have become invasive and sale of plants

is prohibited in Colorado and Oregon. In points east of the Mississippi including New Jersey, the plants are far less prolific and make great candidates for a gravel garden or a dry, south facing slope. They mix well with Prickly Pear (*Opuntia humifusa*) and dwarf Stonecrops such as *Sedum album* 'Coral Carpet' or Siebold Stonecrop (*Sedum sieboldii*), especially when the gray summer foliage of the Siebold Stonecrop turns orange and rose come autumn (as seen at right). The glaucous foliage works great with selections of blue flowered spring bulbs, such as *Chionodoxa* (now *Scilla*) *luciliae* or, for a hotter composition consider *Tulipa linifolia* or *Tulipa* 'Little Princess' (as seen below in late April).



Winter is certainly the time for embracing our evergreens, even if they are not always green! With water conservation becoming an increasingly important part of garden design, especially for dry and sloping terrain, our palette of plants is certainly more limited. Having grown Donkey Tail Spurge for a number of years, I have come to truly appreciate its drought tolerance, attractive flowers and silvery-blue foliage that only leads me to sing those silvery blues of praise for this winter stalwart!



Bruce Crawford – Manager of Horticulture, Morris County Parks Commission