

An Intersectional Point of View, Column #4  
(APS Bulletin No. 334, June 2005, pages 110-113)

An Intersectional Point of View

by Don Smith

Production of lateral buds (i.e., sidebuds) is a characteristic that greatly enhances the landscape and garden value of lactiflora peonies. The presence of sidebuds increases the number of flowers and also significantly extends the period of bloom. Unfortunately, this is a characteristic not shared by the majority of peony species. In fact, other than lactiflora, only p. veitchii and p. emodi on the herbaceous side and p. lutea/delavayii on the tree peony side share this important characteristic.

On the other hand, the genes for multiple flower stems are frequently passed along to the hybrid offspring of these four species and thus there are numerous examples of herbaceous and tree peony hybrids that also exhibit this desirable characteristic. One group where multiple flower stems are common is the lutea hybrid group (p. lutea/delavayii x p. suffruticosa). Other examples of hybrid peonies with more than one flower per stem are the very beautiful *Early and Late Windflowers* and the remarkably tall and lovely *White Innocence*, all Saunder's hybrids derived from crosses with p. emodi. In these three cases it is not at all surprising that these hybrids have inherited this trait since the parents on both sides exhibit this characteristic. The crosses being (veitchii x emodi) in the first case and (lactiflora x emodi) in the latter case. It is also interesting to note here that recent DNA sequence analysis of p. emodi (Sang et al., *Amer. J. Botany*, 84, 9, 1120-1136, 1997) has revealed that p. emodi is a hybrid species from a natural cross between p. veitchii x p. lactiflora. Here again, both parents exhibited the multi-flower trait.

Another group of hybrids where both parents exhibit the characteristic of more than one flower per stem is the intersectional hybrid group (p. lactiflora x t.p. lutea hybrid). Based on this parentage, one would certainly expect this group of hybrids to also have multiple flowers per stem and indeed this is the case. This trait is an important factor in making these new hybrids such outstanding landscape and garden plants, yet it seems this fact is not widely known in connection with the intersectional group. Due to this, I thought I would use the remainder of my column this time to discuss this topic in more detail as it applies specifically to the intersectional peony group.

First, let me simply say that multiple flowers per stem are typical of the intersectional hybrid group. Based on a careful survey of all of my flowering plants, more than 80% have sidebuds. The number of sidebuds varies from plant to plant but is typically between 1-3 per stem, thus giving a total of 2-4 flowers to a stem. This greatly increases

the number of flowers per plant and also significantly extends the length of the blooming season for these plants to as long as three weeks. Since mature intersectional peonies often have 40-60 stems per plant, it is not unusual for these hybrids to have more than a 100 flowers in a season. For example, several years ago I counted 155 flowers on a single plant of my 2002 intersectional introduction, *Singing in the Rain*.

Intersectional sidebud flowers also exhibit several unique characteristics not usually seen in other peonies. One of these is the tendency for the lateral flowers to be more double than the terminal ones. This is a surprising result since it is just the opposite of what normally occurs with the lactiflora varieties. In addition, the sidebuds are usually quite large and often produce flowers that nearly approach the main flowers in size and quality. The sidebud flowers are carried on strong secondary stems that extend several inches beyond the terminal flowers and thus are always beautifully displayed above and beyond the foliage even in the rare cases where the main bud flowers are slightly hidden just inside the foliage canopy (an undesirable trait sometimes inherited from the lutea hybrids).

Another interesting phenomenon is a result of the incredible color transformations that occur in many of the hybrids and is especially pronounced in the numerous varieties with flowers that are blends of pink and yellow. Sidebud flowers usually open several days to a week or more after the main buds. In the intersectional hybrids, this often creates a beautiful kaleidoscopic effect that slowly evolves over a period of several days as mature terminal flowers are continuously joined by newly opening lateral flowers, which are initially heavily flushed with pink or red. The overall effect is a pretty multicolored display that is one of nature's little marvels to behold. This effect is created by the fact that many of the intersectionals have flowers that are basically yellow which is overlaid with red; combined with the fact that these two pigments react very differently when exposed to the sun. Some of these hybrids are extremely pink when first open yet become quite intensely yellow as the flowers age. This change occurs over a period of several days to a week depending on how sunny the days are. It is important to note that these two colors (pigments) cannot mix because they occur in different layers of the petal. Therefore, the colors simply overlay rather than actually blend or mix. This is the reason there are no true (lasting) orange lutea or intersectional hybrids. The yellow pigment is relatively unfading and often seems to intensify as the flowers mature whereas the red pigment is most intense when the flowers first open and then usually fades (sometimes quite rapidly) as the flowers age in the sun. When the sidebuds begin to open on mass, the entire plant can often exhibit a very pretty rainbow effect that is created by an array of many individual flowers (from both main and lateral buds) that are all at different color phases of their polychromatic cycle. It's an effect that is very hard to describe, but quite beautiful to behold. Of course, you can always pinch-off the sidebuds and allow the terminal flowers to reach show size (many will reach 8 ½ to 9 ½ inches when this is done), but then you would miss out on much of the natural beauty of these remarkable landscape plants. I guess, in the end, either way you really end up winning.