

High Variability Incidences of *Rhododendron calendulaceum* Exhibited on a Mountain Slope in the Southern Appalachians

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A newly discovered population of *Rhododendron calendulaceum* in southern West Virginia displays some unusual color variations. On a gentle southwest mountain slope above the Greenbrier River Valley, *R. calendulaceum* exhibits colors of white with a light pink blush, white with a light yellow border, deep pink, strong yellow, deep salmon-red, to deep orange. Predominant color types within this population are salmon and pink. The area containing these specimens is an acre in size at an elevation of 2,400 feet.

Plant species associated with the population are *Quercus alba*, *Q. coccinea*, *Q. prinus*, *Hamamelis virginiana*, *Rhododendron maximum*, *Magnolia acuminata*, *Pinus strobus*, *P. echinata*, *Betula lenta*, *Nyssa sylvatica*, *Vaccinium pallidum*, *Epigaea repens* and *Gaultheria procumbens*. The heights of *R. calendulaceum* vary from three to ten feet. Forest growth is beginning to enter a mature stage.

Local elevations on this mountain between 2,400 and 2,800 feet escape late frosts that occur in May and June. Within this "frost free" zone the opportunity for successful pollination is maximized, allowing for more variable characteristics to appear. All specimens were in full bloom and full leaf on May 28, 1994 while scattered frost was in the valley.

The largest specimen of *R. calendulaceum* found within the acre-size population was a light pink clone ten feet tall by 14 feet wide. It is probably the parent of the numerous unusual specimens. Although no white flowering specimen was found, a white mutation of *R. calendulaceum* may be responsible for the numerous color variations found within this population. Unlike the hybrid populations found at a higher elevation on a slope of Spruce Knob in West Virginia (4,861 feet), *R. viscosum*, *R. arborescens*, and *R. periclymenoides* have not been found within miles of the site to produce white hybrids [1].

Other variations found within the study area are a specimen with narrow pointed leaves and salmon-pink flowers, one with very large orange-pink flowers, one deep orange with star-shaped flowers, a specimen with two color patterns on each truss (the truss was compact) and three specimens producing flowers with ruffled edges. A late salmon clone was found within the population on June 20, 1992. Also, a small star-like yellow-orange specimen with narrow upright growth

habit was found three-fourths of a mile away at a lower elevation on May 28, 1994. Cytological testing is needed to determine if it is a diploid.

Red color types of *R. calendulaceum* on this mountain range begin to appear at 2,400 feet and become the dominant color phase above 3,000 feet. Galle reports that "the orange-red to red forms of this species are usually from higher elevations and later flowering" [2]. Yellow forms begin to appear below 2,750 feet and become the dominant color phase below 2,450 feet. The typical orange phase is interspersed on the entire mountain, but appears as the dominant phase between 2,300 feet and 2,750 feet.

Unfortunately, some of the most striking scarlet specimens found near old logging roads are disappearing rapidly. Extirpation of the red to scarlet forms is causing this color phase to become absent particularly above 2,750 feet. The chances of extirpation are increased at higher elevations on this mountain range since there are fewer acres above 2,750 feet. Extirpation may have been occurring for at least 150 years, with noticeable damage occurring in the last 15 years.

Cuttings were taken from 16 specimens of the selected population on July 2, 1994 with variations in rooting success. Propagation success percentage was very high for a specimen of white flowers with a light pink blush, and for a deep pink specimen. Others had low propagation success rates. Selected clones have been named and will be registered soon. One hopes that a few varieties will be available in the near future.

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REFERENCES

- 1 Skinner, Henry T., April 1955, "In Search of Native Azaleas". *Morris Arboretum Bulletin*, Vol. 6, No. 2, pgs 19-20.
- 2 Galle, Fred C. 1985, *Azaleas*, Timber Press, Portland, OR pgs 68-69.

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