Small White Lady's-Slipper

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To the ardent student of nature, the discovery of Alabama's native orchids can be an exhilarating and memorable experience. The splendor witnessed by the privileged few often arouses a subtle state of ecstasy, a simple delight that finds no distinction between the seasoned orchidophile and the budding novice. Such curiosity of the state's orchid flora may be easily understood, for these plants are embellished with an exquisite display of colors and forms as if intricately designed and decorated by a set of invisible hands.

Of the orchids found across the state, perhaps no group epitomizes their lavish elegance more than the lady's-slippers. Replete with a slipper-shaped pouch subtended by a series of colorful combination of sepals and petals, few Alabama wildflowers can rival their majestic poise.

Swedish botanist Carolus Linnaeus is credited with devising the botanical name *Cypripedium* (genus *Cypripedium* from Greek *Kypris*, a name for Venus + *podion*, or slipper) over 200 years ago to commemorate the legend of Venus, the Roman goddess of love. As the legend goes, Venus was out hunting with Adonis when they were overtaken by a tremendous thunderstorm. The two were forced to take shelter. Naturally enough, Venus and her beloved also took full advantage of their enforced intimacy, lending her to misplace her slipper. As the storm subsided, the slipper was spotted by a mortal who immediately went to pick it up. Before he could touch it, Venus's slipper was suddenly transformed into a flower whose central petal not only retained the shape of the slipper, but also the color in which the goddess's priceless shoes had been made.

The small white lady's-slipper (*Cypripedium candidum*) is the most delicate and rarest of the four species of slipper orchids known in the state. Known from only Dallas and Colbert counties, the species assumes its greatest abundance in the Tallgrass prairies of the upper Midwest, where it typically favors moist swales and seepage areas underlain by limestone. Such conditions are rare in Alabama, often being confined to stream banks and gentle slopes blessed with a continuous supply of ground and/or surface water. Typically, water sources have pH's greater than 6.0, higher alkalinity, and distinctly higher concentrations of mineral ions (especially calcium and magnesium) than other wetlands. Too, these habitats tend to be dominated by low-growing sedges and various grasses.

As far as wetland plant associations go, alkaline seepage areas are among the most diverse in North America. A single square meter in a Cahaba River seep may contain as many as 30 different species of mosses and vascular plants, with some larger sites potentially supporting more than 200 species. In contrast, a typical marsh, which contains no more than a few dozen species, generally supports only two to five species in an area of comparable size. Perhaps the key distinction among wetlands in terms of species diversity is their source of water, which imparts a significant influence on hydrologic regime and water chemistry. Calcium, a key element at white lady's-slipper sites, can bind phosphorus, an essential plant nutrient, in forms most plants can not absorb. This means that fast-growing, nutrient-loving species like cattails and tall grasses fare poorly in the preferred habitat of this rare and unusual species. Growth remains relatively low, thereby favoring many small, slow-growing species such as the lady's-slipper that have evolved ways to survive with little phosphorus, or that can access phosphorus bound to calcium.

Seldom very common, recent population studies have suggested that the small white lady's-slipper may have been reduced by nearly 50 percent since the early 1900s. While the disappearance of this delicate orchid from many of it former haunts is largely attributed to habitat alterations, collectors aspiring to embellish gardens are also partially responsible. Given the importance of groundwater to maintain essential growing conditions, conservation will depend on more than land acquisition. Long-term protection may be best accomplished by managing activities in watersheds and acquiring a greater understanding of how plant diversity is influenced by groundwater chemistry and nutrient availability. Lacking a commitment to safeguard our natural heritage, the entrancing beauty of the small white lady's-slipper and a host of other species may forever disappear from the Alabama landscape.

Photo by Alfred R. Schotz