

Collection Profiles

Trillium and Hexastylis at Mt. Cuba Center

Jeanne Frett

In 1935 Lammot du Pont Copeland (1905-1983) and his wife Pamela C. Copeland (1906-2001) began the development of their estate Mt. Cuba on the hills overlooking the Red Clay Creek in the Appalachian Piedmont physiographic province of northern Delaware near the historic village of the same name. Over nearly 65 years, the Copelands purchased several tracts of land, created numerous gardens, and formulated plans for the future establishment of their estate as a nonprofit horticultural institution.

In 1983, following the death of Mr. Copeland, Mrs. Copeland established Mt. Cuba Center to emphasize the study and display of plants native to the Appalachian Piedmont of the eastern United States, noting that it was her and Mr. Copeland's mission, "to inspire in visitors a joyful appreciation of the beauty of native plants and gardens made from them, and to bring the public to an awareness of the complexity and fragility of our natural environment through garden display, education and research."

With the death of Pamela C. Copeland in 2001, Mt. Cuba Center and its 630 acres became a nonprofit horticultural organization. With its renowned naturalistic, woodland wildflower gardens, focused views and vistas of the Delaware Piedmont, formal gardens designed by some of the region's foremost 20th century garden designers, and its Georgian style main house commanding the highest point on the property, Mt. Cuba Center is one of Delaware's most precious horticultural treasures.

Trillium Collection

Developed in the late 1960s, the woodland gardens at Mt. Cuba display large drifts of trillium along pathways. Mrs. Copeland was especially fond of the genus and encouraged its acquisition.

Many friends and nurseries have contributed to the diverse collection of species and cultivars that enrich the Mt. Cuba Center Trillium collection. The friendship she established with Frederick and Roberta Case, authors of *Trilliums*,



The double white cultivar, *Trillium grandiflorum* 'Pamela Copeland' was selected by Frederick Case as a tribute to Mrs. Lammot du Pont Copeland.

led to forays into trillium habitats as well as gifts of the more ornamental and rare species from their garden. These include the distinctive *Trillium stamineum* with its purplish, twisted petals reminiscent of propeller blades and the diminutive *Trillium pusillum* and its varieties found in disjunct populations across the southeastern United States. Louise Smith, a friend from Birmingham, Alabama, contributed species with beautifully mottled foliage such as *Trillium decipiens* and *Trillium underwoodii*, and the sweetly scented species, *Trillium rugelii*.

Dr. Richard Lighty, former director, added many accessions to the collection. His avid interest in plant selection, resulted in the introduction of *Trillium grandiflorum* 'Quicksilver', a rapidly multiplying form of the species. In addition, Dr. Lighty's plant exploration efforts resulted in the addition of a wide range of *Trillium erectum* color forms.

In 2001, Mt. Cuba Center was granted NAPCC recognition as an official collection holder of the genus *Trillium*. At the present time, the collection includes 52 taxa, represented by 237 individual accessions. Species, varieties, cultivars, and horticulturally interesting forms are represented in aesthetically pleasing combinations with other woodland natives and/or in the research lath house.

Our goal is to use the collection to develop a better understanding of the factors that influence propagation, growth, and development in the genus and to use that information for both horticultural and conservation purposes. An example of the value of this collection is the propagation research that Mt. Cuba has sponsored over the past few years.



View of pond garden in early May

Mrs. Copeland became increasingly aware that wildflowers, trilliums in particular, were frequently wild collected rather than nursery propagated. In 1991 she encouraged a project at Mt. Cuba that resulted in the propagation from seed to flowering of over 1000 plants of *Trillium grandiflorum*. Seeds were collected with permission from G. Richard Thompson Wildlife Management Area near Linden, Virginia. This population is renowned for its scope and the presence of pink flowered *T. grandiflorum* among the typically white flowered plants. This seed collection provided the necessary germplasm to make significant inroads to viable commercial seed propagation techniques at Mt. Cuba. We are currently engaged in seed propagation of 15 species and cultural studies with several species.

The trillium collection has stimulated additional propagation research with Dr. Sherry Kitto at the University of Delaware, who has used the collection for the past five years for tissue culture propagation research and currently has in culture *T. grandiflorum*, *T. discolor*, *T. decipiens*, *T. simile*, *T. sulcatum*, *T. maculatum*, and *T. rugelii*. In addition, the USDA was given research material for the National Seed Storage Laboratory for research with long-term trillium seed storage.

Hexastylis (Asarum) Collection

The genus *Hexastylis* (*Asarum*) became the focus of collection efforts at Mt. Cuba Center in the early 1990s. Since eight of the eleven recognized eastern North American species occur in the Piedmont and all are hardy here, it was a logical genus to be included in the garden. Wild gingers are a valuable component of woodland gardens; the color, texture, and particularly attractive foliage of the evergreen species extends the garden display long after the spring wildflowers fade. Mt. Cuba Center was recognized as the official NAPCC collection holder of the genus *Hexastylis* (*Asarum*) of the eastern United States in 1996. Portions of the collection are displayed within the naturalistic gardens with the remainder maintained in a research lath house.



Above, *Hexastylis* species and cultivars are represented in a research lath house as well as in the garden setting. Right, Flowering *Hexastylis* plants provide opportunities for taxonomic study.

The taxonomic quagmire that exists with these species points to the need for a wild ginger collection. There has been, and continues to be, considerable taxonomic confusion with the genus; whether or not *Hexastylis* Raf. should be considered a valid genus or combined with *Asarum* L. in a broad sense is the most contentious issue. Another question is the number of species that should be recognized within the genus. The calyx, which is used to determine taxonomic differences, is difficult to preserve, thus a living collection, accessible to visiting botanists, can facilitate taxonomic study.

Conservation plays a role in managing the ginger collection. *Hexastylis naniflora* is a federally endangered species, and *H. rhombiformis* and *H. speciosa* are rare in their native habitat; thus, the collection represents a conservation effort as well. In addition, we are attempting to obtain samples from throughout the native range of the species for both conservation and taxonomic purposes. There are presently 19 taxa representing 10 species in the collection. Many of the species are from known-provenance, natural populations. Multiple accessions, from different parts of the native range of *Hexastylis* may prove valuable for

future research in assessing speciation within the genus.

The horticultural value of the genus cannot be overlooked. Although the flowers are unseen to all but the most avid naturalist, the foliage and growth habit are attractive additions to the garden. To that end, our *Hexastylis* collection contains several ornamentally superior cultivars. These include *Hexastylis arifolia* 'Beaver Creek', which has silvery mottled foliage and a strong stoloniferous habit, and *Hexastylis shuttleworthii* var. *harperi* 'Callaway' with similar characteristics and smaller foliage. Through our cooperation with Dr. Sherry Kitto, and as an outgrowth of her tissue culture research, the robust cultivar *Hexastylis speciosa* 'Buxom Beauty' is now commercially available. It is hoped that future collecting trips to the southeastern United States will yield potential selections for tissue culture propagation and commercial release.

Jeanne Frett is Assistant to the Director at Mt. Cuba Center in Greenville, Delaware. She is curator of the *Trillium* and *Hexastylis* Collections.