



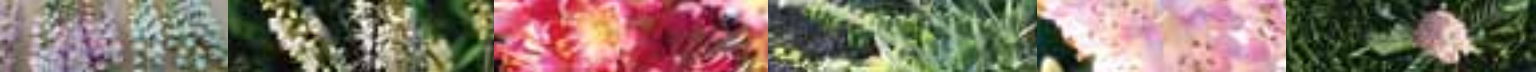
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'Pink Spire' displays a midsummer onslaught of pink, fragrant blooms.





This article is the second in a two-part series on summersweet clethra. The first part, "Summersweet Splendor," appeared in the July 1 issue of AMERICAN NURSERYMAN.

Because Clethra alnifolia has gained prominence in the market, Longwood Gardens conducted trials on the appearance of several cultivars picked for bloom color, bloom display or habit.

Summersweet Splendor, Too

For more than 200 years, nurserymen have selected aesthetically superior forms of summersweet clethra (*Clethra alnifolia*). The first selection displayed superior blooms and vigor. A century later, the first pink-flowering cultivar was introduced. More recently, cultivars showcasing compact habit, variegation, later bloom period and uniquely shaped inflorescences have entered the market.

At Longwood Gardens, Kennett Square, PA, we evaluated 14 *C. alnifolia* varieties and three additional *Clethra* species. Eleven of the cultivars included in the trials were originally selected for distinctive flower or foliage characteristics.

In the trials, each *Clethra* variety was row-planted in a sunny, Zone 6 location. The shrubs were not pruned or watered after establishment. Mulch and sporadic chemical or physical weed control were applied, as necessary.

Plant performance was evaluated from 1999 to 2006. Evaluators, consisting of horticulture professionals, students and volunteers, provided subjective opinions on the aesthetic qualities of the plants. Observations focused on several categories, including habit, plant size, stems, foliage, flowering, fruiting, environmental injury and pest or pathogen damage. Each *Clethra* variety was then rated on a scale of 1.0 to 5.0 — from “unattractive” (1.0) to “outstanding” (5.0). In 2006, we analyzed the results of eight years of *Clethra* performance. The following are our conclusions for the *C. alnifolia* cultivars picked for bloom color, bloom display and habit.

Think pink. Longwood Gardens trialed five, pink-flowered cultivars: ‘Fern Valley Pink’, ‘Hokie Pink’, ‘Pink Spire’, ‘Rosea’ and ‘Ruby Spice’.

by JEREMY A. SCHMIDT AND DR. TOMASZ ANIŚKO

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'Ruby Spice' flaunts cherry pink blooms.



'Hokie Pink' sports licorice-scented, pink inflorescences.

In late July, white flower buds on 'Fern Valley Pink' opened pink and soon faded back to white. The flowering period lasted until mid-August, with a sporadic bloom lingering until late August. The bloom was susceptible to excessive heat, which caused browning of stamens, followed by petals. The seed heads drooped more than most *Clethra* cultivars in part because of their 6-inch length — noticeably longer than the species. After eight years in the field, three contiguous plants of 'Fern Valley Pink' were 3½ feet tall and wide. This cultivar performed best in its first two years while it maintained its initial upright form, but in year two, it began to sucker — losing its upright habit and its high ratings. From years three through five, 'Fern Valley Pink' commonly was considered fuller and more compact than other pink cultivars, although it continued to lose favor with evaluators. From year five on, prominent suckers transitioned the specimens back to an upright, but less compact, form. 'Fern Valley Pink' suffered dieback in years seven and eight, earning its lowest annual scores. Although 'Fern Valley Pink' has earned an overall rating of 2.6 through eight years, its annual rating started much higher and ended much lower than that average reflects.

'Hokie Pink' was discovered by nurseryman Jim Monroe on the Virginia Polytechnic Institute and State University campus

in Blacksburg, VA. The cultivar derives its name from the school's nickname, the Hokies. Three, upright and open, 2½-foot-tall 'Hokie Pink' shrubs were introduced to the trial. After three years, the specimens filled out, but maintained their stiff, upright habit. By year five, 'Hokie Pink' was among the largest of the *Clethra* cultivars with a height and spread of 5 feet. However, during year five, 'Hokie Pink' began to sucker and soon dropped back to 3- by 3-foot plants, as the oldest stems lost their vigor and died. In the three years since the proliferation of suckers was first observed, 'Hokie Pink' began to regain its upright look, but had opened up in the process. Light green foliage enshrouded this cultivar from late April into fall. Its short-lived, yellow fall color was viewed more positively than other cultivars.

Beginning in the third week of July, 'Hokie Pink' sported a barrage of pink inflorescences (photo, above). Observations suggested that 'Hokie Pink' held its pink color more effectively than 'Fern Valley Pink'. Several evaluators enjoyed the licorice scent of 'Hokie Pink', especially during the first half of the bloom period. The 4-inch-long seed heads following the bloom were held more upright than most cultivars, and they were viewed by many to have less fruit interest than other cultivars. The overall rating for 'Hokie Pink' was 2.6. It performed best in year five

while it was at its peak size, but its ratings have dropped 20 percent since its oldest, well-branched stems were replaced by wide spreading, open suckers.

Three 'Pink Spire' plants, each initially 3 feet tall and 2 feet wide, doubled in size after eight years. Strongly upright at planting, 'Pink Spire' began to sucker sometime during its second year. From years three through five, the suckering shrubs were considered rounded, low-branched and wide. From years six through eight, the plants were compact and rounded — and quick to outgrow spent inflorescences. Bronze foliage emerged very glossy and rugose in late April and quickly matured to a light green color during flower development and to a dark green in the weeks following. Fall color display remained in step with the species. The large size of 'Pink Spire', however, amplified the fall display simply because it was hard for evaluators to miss.

Beginning in late July, pink flower buds opened on 'Pink Spire', displaying light pink flowers and emitting a pleasant fragrance (photos, page 16). The 5-inch-long inflorescences held their pink color throughout a bloom period that often lasted into the third week of August. Greenish yellow seed heads appeared as flowers faded and were held upright throughout their tenure. The fruit display was viewed as attractive, but not out of the ordinary compared to the other cultivars. 'Pink Spire' achieved a respectable overall rating of 2.7 and performed best at its largest size.

The century-old cultivar 'Rosea' was initiated into the trials as three, 3½-foot-tall plants. In eight years, plants reached 5 feet tall and wide. This cultivar was initiated as a sparse, multistemmed, upright

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PHOTOS COURTESY OF JEREMY A. SCHMIDT



White 'Paniculata' inflorescences stand out above medium green foliage.

plant and was open at ground level. Suckering began in year three, as the plant transitioned from upright to round. The plants remained round since suckering began. Leaves emerged glossy with a hint of red in late April to early May. Like most other cultivars, early summer foliage was lime green, but transitioned nicely into a healthy, dark green tone after flowering. Foliage turned yellow in mid-October, but often browned before it dropped.

Pink buds opened a light pink or white on 'Rosea' in late July, and 5-inch-long inflorescences consistently were spent by the second week of August, although some sporadic blooming was present into late August (photo, right). One observer noted that the upright spires have a stronger scent than other cultivars, and several others felt 'Rosea' was more floriferous than other cultivars at peak bloom. Inflorescences gave way to cream-white seed heads in mid-August, which persisted for more than a year on the plant. Fruit display drew consistently neutral to positive comments in each of the four seasons. 'Rosea' was rated above average at 2.8 and earned its highest annual rating at its peak size during its latest year.

In 1992, nurseryman Andy Brand of Broken Arrow Nursery, Hamden, CT, discovered a branch sport on a 'Pink Spire' plant growing in a production field. The sport had noticeably darker pink blooms than 'Pink Spire'. He took several cuttings from the sport, which he named 'Ruby Spice'. The remaining original plant at Broken Arrow Nursery was 6 feet tall after

14 years. 'Ruby Spice' entered Longwood Gardens' trials as a 4-foot-tall shrub. Within two years, it increased to 5 feet tall and wide and has maintained that approximate size in the five years following. 'Ruby Spice' went into the ground as an upright plant. Throughout its eight-year tenure in the trials, this cultivar has retained its upright habit more than other *Clethra*, which was most evident in winter. Although several evaluators considered 'Ruby Spice' to be rounded after year three, most still recognized a predominately upright shape. Consequently, no reference to suckering was made. New leaves emerged glossy and bronze in early May. The maturing foliage was chartreuse prior to flowering, but transformed into an exceptionally healthy dark green as the bloom period commenced. Dark, glossy foliage persisted through summer until mid-October, when leaves boasted a yellow fall color. Leaves browned and detached by late November. During extreme heat and drought, some defoliation occurred.

Dark pink flowers opened on 'Ruby Spice' in late July and finished in early to mid-August (photo, page 18). Flowers emitted a "heavy licorice smell" said to be stronger than some cultivars, according to evaluators. 'Ruby Spice' displayed the darkest pink blooms, as well as the shortest blooms — only 3 inches long. According to observations, it had fewer blooms than its neighboring cultivars. That may be an impression born from shorter, nonarching inflorescences. The seed

heads remained aesthetically pleasing until they were eclipsed by a flush of new growth the following spring. 'Ruby Spice' earned a superior score of the pink-flowering *Clethra*, with an overall rating of 2.9. It is important to note that the overall size, growth habit and health of 'Ruby Spice' remained steady through eight years of evaluation, and as a result, its ratings remained steady also.

Beyond color. Although most *C. alnifolia* cultivars are selected for flower color, several have been chosen for a unique bloom or foliage display. Longwood Gardens trialed six cultivars: 'Paniculata', 'Anne Bidwell', 'Chattanooga', 'Creel's Calico', 'September Beauty' and 'Cottondale'.

Selected around 1770 for its large, terminal panicles and vigorous growth, 'Paniculata' was the first cultivated variety of summersweet clethra. 'Paniculata' was planted into the trials as a 3½-foot-tall shrub. Plants grew steadily through year four and achieved the dimensions of 5 feet tall and wide. For the next three years, the plants maintained their size. Initially, 'Paniculata' was viewed to be strongly upright, but after three years in the trials, the cultivar matured into a rounded and full shrub. In year five, vigorous suckering created an upright silhouette in the dormant season, but 'Paniculata' remained rounded and full in the summer. Leaves emerged in late April with a reddish tinge. Summer foliage generally was viewed as dark green. Leaves changed to bright yellow in mid-October, but the shrub was consistently bare by the first week of November.

Blooming on 'Paniculata' began in the middle of July and finished in approxi-

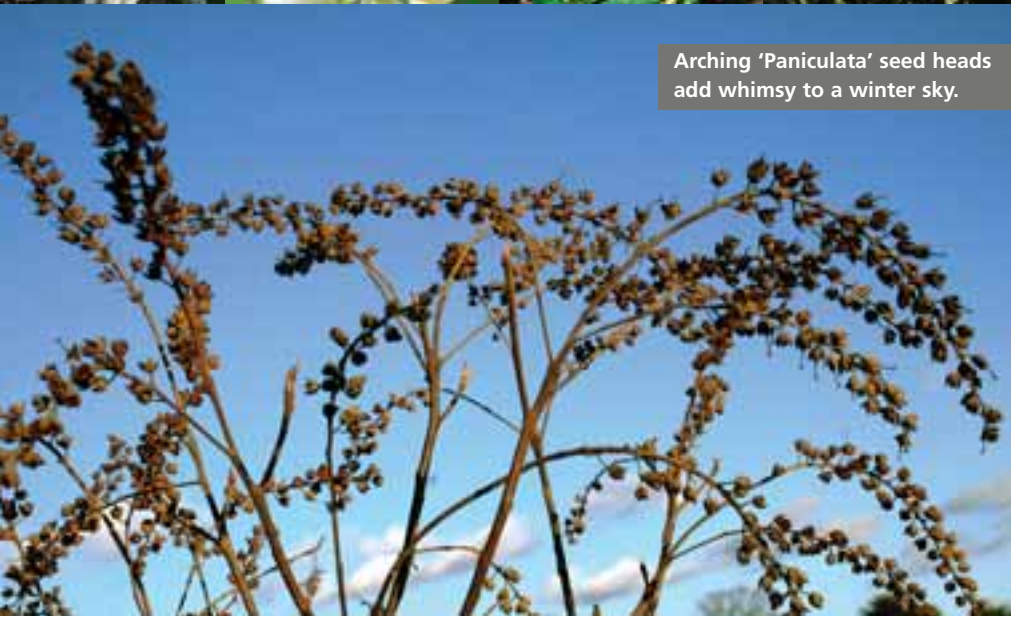
The pink and white inflorescences of 'Rosea' are illuminated among dark green foliage on a summer's day.



PHOTOS COURTESY OF JEREMY A. SCHMIDT



Arching 'Paniculata' seed heads add whimsy to a winter sky.



A layer of white 'Chattanooga' blooms orbits a dark green sphere of foliage.

mately three weeks. This selection was consistently one of the earliest cultivars to bloom. A heavy fragrance was observed on 6-inch-long inflorescences (photo, page 20). The extra-long, pendulous seed heads of 'Paniculata' were considered ornamental in all four seasons and earned it the best winter rating of any *Clethra* trialed (photo, above). Although its ratings dropped off some after suckering began, 'Paniculata' maintained a more consistent rating than many other suckering cultivars — earning a 2.8 through eight years.

Named after its discoverer, 'Anne Bidwell' was introduced via The Arnold Ar-

'Anne Bidwell' exhibits uniquely branched, "chunky" inflorescences.



boretum of Harvard University, Jamaica Plain, MA. 'Anne Bidwell' was unique because of its branched inflorescences and later bloom period. Initiated into the shrub trials as three, 2-foot-tall plants, 'Anne Bidwell' achieved a maximum height of 4 feet after five years in the field and since has not changed significantly in size. After eight years in the trials, 'Anne Bidwell' was open and upright without suckering and had noticeably fewer trunks than other cultivars. The form commonly was referred to with negative sentiment, as evaluators noted that the plant was "uninteresting," "sparse" and "inconsistent." Bud break occurred in late April. Leaves emerged medium to light green and did not grow as dark as other cultivars. Foliage turned brown in mid-October, and by early November, 'Anne Bidwell' was defoliated completely.

'Anne Bidwell' flowers demonstrated an excellent tolerance to heat. Its flowers were not damaged by a severe, midsummer heat wave while most of its neighboring cultivars' inflorescences succumbed. The flowering order of 'Anne Bidwell' appeared to be an additional difference from the species. *C. alnifolia* generally flowers from the base of the inflorescence to the apex. The center raceme of 'Anne Bidwell' either opened from the top down or in no particular order (photo, left). Flowers opened in early August and persisted into late August — a week or more later than the species.

The seed heads of 'Anne Bidwell' were more finely textured, shorter and wider than other cultivars; the length of the entire inflorescence was approximately 3 inches. The opinion of its seed heads was mixed, but according to the winter ratings, the infructescences were an asset to the

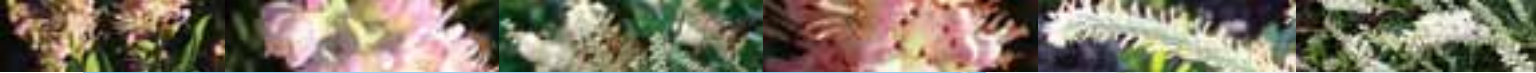
dormant 'Anne Bidwell'. Despite its unique flowering characteristics, 'Anne Bidwell' rated low at 2.3. Its flowering period was rated almost a full point better than the rest of the year, but its form and foliage were less attractive and vigorous than the other cultivars.

'Chattanooga' was selected on the grounds of the Tennessee Aquarium, Chattanooga, for its profusion of white inflorescences (photo, above). It shares the same growth habit as the species. At Longwood Gardens, 'Chattanooga' was planted as three, 1½-foot-tall shrubs and vigorously grew into open, upright plants 3 feet tall and wide by the end of the first full year. The plants were digressively upright and vigorous after their first three years in the trials. By year four, 'Chattanooga' was rounded, and it opened up dramatically starting in year five. Subsequently, the ratings decreased as 'Chattanooga' lost its full appearance. Following year five, the plants were observed to be approximately 5 feet tall and wide. Chartreuse leaves emerged in middle to late April. By the end of June, mature foliage had transitioned to an emerald green with additional new growth bearing a red cast. Yellow fall color of varying quality lingered from mid-October into early to late November, depending on the year.

Since its first summer in the trials, 'Chattanooga' consistently produced 4- to 6-inch-long inflorescences from mid-July to early August. A pleasing fragrance and abundance of bees frequently were noted during flowering. Following the bloom,

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As the name suggests, 'September Beauty' flowers until early September.



habit. According to one evaluator, the stems “appeared purple-gray when viewed from a distance.” Leaves emerged glossy and rugose with a hint of red or bronze in late April. Variegated foliage was observed rarely in seven years and exclusively during the summer. Opinions were split as to whether or not the variegation was aesthetically pleasing. Summer foliage was medium green, with sporadic white striping and stippling on some leaves. An inferior yellow to brown fall color developed by mid-October and terminated in defoliation by early to mid-November.

In late July, 6-inch-long inflorescences — said to be greater in number than ‘Chattanooga’ — opened on ‘Creel’s Calico’. A staggered bloom continued until mid- to late August, longer than other cultivars. One evaluator claimed the seed heads following the flowering period were “finer” and “less dramatic” than ‘Chattanooga’, although the fruit clusters generally were viewed as a positive attribute during the dormant season. Fruit clusters were held upright initially, but drooped by early winter. ‘Creel’s Calico’ did not benefit from the variegation for which it was selected, and it was less vigorous than most other cultivars. ‘Creel’s Calico’ earned a 2.5 rating overall.

‘September Beauty’ was introduced by the late nurseryman William Flemer III of Princeton Nurseries, Allentown, NJ. Flemer selected ‘September Beauty’ for its tendency to flower as late as early September — potentially weeks later than the species. ‘September Beauty’ was initiated into the shrub trials as a 2-foot-tall plant. After five years of steady growth, the cultivar had grown to a height of 4 feet and a width of 2½ feet. Its gray to brown stems remained upright and did not sucker. Leaves emerged green with a reddish margin in late April and matured to a medium green within two weeks of bud break (photo, left).

plentiful seed heads initially were greenish and held upright in mid-August through fall, but by spring, they were curiously pendant. Overall, the long, bowed seed heads were considered to be an attractive attribute for ‘Chattanooga’, giving a hint of the prevailing direction of the wind. One evaluator enthusiastically noted that the fruit clusters were “shaped by the wind.” However, during the peak of the growing season, the seed heads detracted slightly from the overall display of foliage and flowers. ‘Chattanooga’ has shown minor winter dieback in the trials. After eight years, it earned an average rating of 2.6. However, ‘Chattanooga’ scored more than a full point better in year five after it became rounded, but before it began to open up.

Mike Creel, a journalist and botanist with the South Carolina Department of Natural Resources, Columbia, discovered a variegated *Clethra* in a forest near Columbia, which he named ‘Creel’s Calico’. Although ‘Creel’s Calico’ was selected for its unique foliage, it remained smaller and

less vigorous than other cultivars. In the trials, three, 3-foot-tall shrubs were planted. Eight years later, they remained 4 feet tall and 3 feet wide. Until years six and seven, ‘Creel’s Calico’ was not as dense as other *Clethra* cultivars, but since has developed a rounded, consistent and full



'September Beauty' foreshadows its bloom in late July.

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'September Beauty' bloomed reliably into September at Longwood Gardens; however, peak bloom occurred in late August (photos, page 24). Inflorescences were 3 to 5 inches long and fragrant. In mid-August of the fifth year, many of the individual flower buds aborted — turning brown just before the bud opened — although a few blooms managed to open in late August. After flowering, leaves darkened to emerald green. Creamy green, round fruit capsules became evident in early September. Fall color peaked between mid-October and mid-November. 'September Beauty' earned an overall rating of 2.2 through five years in the field. The plants struggled to establish over the first three years, but in the last two years, they developed into healthy, attractive shrubs, as ratings subsequently increased.

'Cottondale' was introduced by Bob McCartney, co-owner of the nursery Woodlanders Inc., Aiken, SC. He noticed a summersweet clethra with exceptionally long inflorescences along a back road near the Florida panhandle town of Cottondale. 'Cottondale' is commonly sold as a cultivar of *C. alnifolia* var. *tomentosa* or *C. tomentosa*. However, Alan Weakley explains these nomenclatural invalidities in his publication *Flora of the Carolinas, Virginia, and Georgia, and Surrounding Areas* (available at <http://herbarium.unc.edu/flora.htm>). At Longwood Gardens, two of the three specimens died within the first year. The remaining plant established effectively and was approximately 2 feet tall and wide after one year. At an early age, this cultivar had a primary, brown-gray branch supporting a vaguely upright habit. The buds began expanding by the end of March. In the summer, this cultivar was clothed with beautiful, silvery white, pubescent foliage.

Wayward, 14-inch-long racemes covered with tiny, white flowers that emitted a pleasant fragrance graced 'Cottondale' in mid-August through mid- to late September (photo, page 28) — weeks later than 'September Beauty'. 'Cottondale' bore blooms that were twice as long as any other cultivar trialed. Fall color was yellow mottled with brown. After a promising first year, 'Cottondale' earned exceptional ratings averaging 3.6 — performing far better than any other *Clethra* cultivar in either its first year or in total.

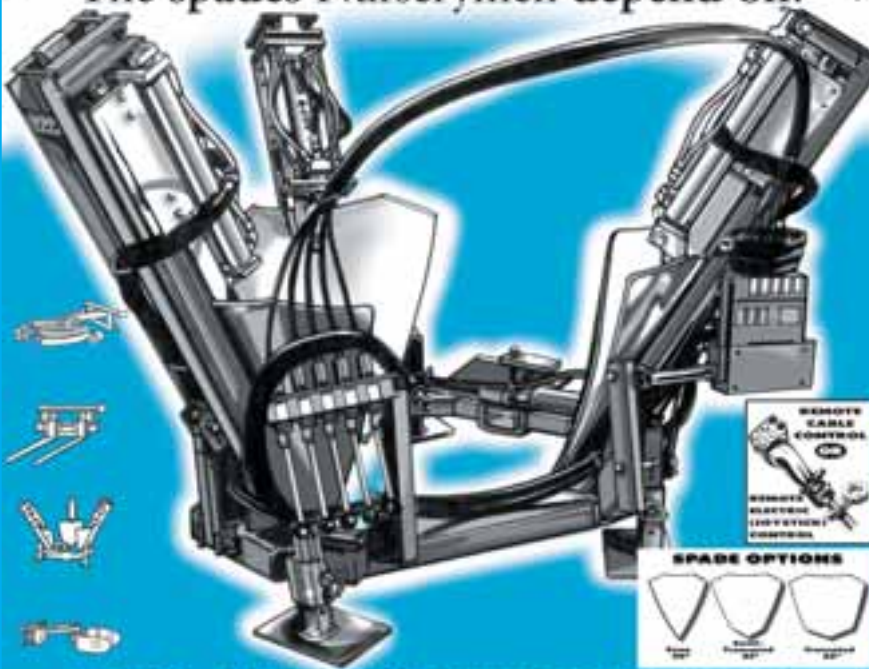
Trial conclusions. The shrub trials at Longwood Gardens provided a valuable and unique perspective on *C. alnifolia*. The close proximity of cultivars, similar growing conditions and duration of evalu-

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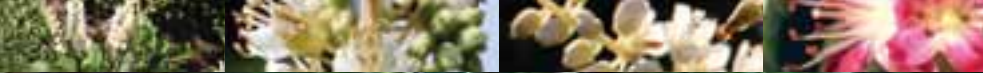
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Wayward 'Cottondale' flower spikes ascend beyond a ghostly green mound of foliage.



remaining true to species form are capable of developing into attractive, suckering shrubs. Still, the highest and most consistently rated cultivars, such as 'Ruby Spice', did not colonize.

Some sources claim 'Pink Spire' is synonymous with 'Rosea'. Similarities between the two cultivars became evident through eight years of side-by-side comparison. Their overall ratings and performance were nearly identical. 'Pink Spire' and 'Rosea' were the only two cultivars trialed — pink or white — that earned better ratings after the onset of suckers. However, several differences surfaced. 'Rosea' first was observed as suckering in its third year, and 'Pink Spire' began one year sooner. 'Rosea' did not sucker to the extent of 'Pink Spire'. Also, 'Pink Spire' was observed to flower up to one week earlier than 'Rosea' and displayed slightly shorter, darker pink inflorescences on average than 'Rosea'.

A relational pattern developed between bloom color and length. Of the pink-blooming cultivars trialed, progressively deeper pink blooms were inversely related to inflorescence length. 'Ruby Spice' displayed the shortest inflorescences, as well as the darkest pink blooms, followed by 'Pink Spire', 'Hokie Pink', 'Rosea' and lastly, 'Fern Valley Pink', which displayed the longest inflorescences and lightest pink blooms (photo, below).

As suggested by ratings and comments, winter interest was influenced by the length of the seed heads. Evaluators preferred a long, drooping inflorescence over a shorter, straighter one. 'Cottondale' and 'Paniculata', which displayed noticeably longer seed heads than other varieties, earned the highest winter ratings (3.0 and 3.3, respectively). While evaluators preferred longer seed heads, the winter display of shorter-flowered cultivars was not penalized.

At the very least, the summersweet clethra varieties in the trials were unaffected by pests and consistently produced an abundance of beautiful, fragrant blooms. Suckering cultivars are a top choice for use as vigorous, pink- or white-flowered, erosion-control barriers or masses in the garden. At their best, non-suckering cultivars offer beauty in singular form — in addition to their potential as a mass. Through its duration in Longwood Gardens' shrub trials, summersweet clethra has demonstrated itself to be an adaptable, native plant well-suited for a broad spectrum of garden uses.

Jeremy A. Schmidt is a curatorial intern at Longwood Gardens, Kennett Square, PA. Dr. Tomasz Aniśko is curator of plants at Longwood Gardens.

PHOTOS COURTESY OF JEREMY A. SCHMIDT

ations allowed for a comparison of the changing landscape performance of summersweet clethra selections.

A main detraction from the garden performance of most summersweet clethra trialed was poor growth habit as a result of suckering. It is important, however, to note that *C. alnifolia* is a naturally suckering plant. Whether they were rounded or upright, full plants were preferred by evaluators. Suckering caused older, well-branched growth to die back — redistributing vigor into colonies of suckers. The cultivars affected began to sucker between two and five years after planting. In each case, the shrubs underwent a total transition in growth habit. Most were upright and at maximum height before suckering, but transitioned

to a more rounded habit within the first year of suckering, dropping back in size and ratings the year after. Cultivars that suckered after four or five years were more adversely affected (at least initially) than younger suckering summersweet clethra that did not have as much size and form invested in old growth.

'Pink Spire' and 'Paniculata' suckered most vigorously in the trials, yet they recovered a dense summer appearance and attained maximum size after suckering. Consequently, they earned the highest ratings of suckering summersweet clethra (2.7 and 2.8, respectively). Although no suckering cultivar was exempt from the unfavorable and severe transition in appearance, 'Pink Spire' and 'Paniculata' demonstrated that *C. alnifolia* cultivars

'Ruby Spice' displays the shortest inflorescences, as well as the darkest pink blooms, followed by 'Pink Spire', 'Hokie Pink', 'Rosea' and lastly, 'Fern Valley Pink', which displayed the longest inflorescences and lightest pink blooms.

