

A Comparative Trial Report on Rodgersias and Astilboides

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Rodgersia 'Kupfermond'

Large leaves make dramatic counterpoints to small-leaved plants; their lush textures and tropical-like dimensions bring an exoticness to temperate landscapes. Unfortunately, there is a paucity of perennials with big, bold foliage for northern gardens—giant rhubarb (*Gunnera manicata*) is too tender, butterbur (*Petasites japonicus*) is too weedy, and ligularias (*Ligularia spp.*) are too often finicky. On the other hand, rodgersias (*Rodgersia* spp.) and astilboides (*Astilboides tabularis*) are well-mannered, cold-hardy alternatives that fill the niche beautifully.

Rodgersias are herbaceous perennials in the saxifrage family (Saxifragaceae) and are native to China, Japan, and Korea. Four species are commonly cultivated including *Rodgersia aesculifolia*, *R. pinnata*, *R. podophylla*, and *R. sambucifolia*. Astilboides tabularis, formerly known as *R. tabularis*, is typically included in discussions of the group despite its reclassification. In recent years, new rodgersia hybrids have entered the marketplace, yet availability of these cultivars is still fairly limited.

Rodgersias are notable for their large, dark green leaves. In spring, emerging leaf color varies among rodgersias and may be wholly burgundy to bronze or simply tinged with those colors. In most cases, the leaves turn fully green although some degree of bronze coloration may remain throughout the summer. In form, the leaves are palmate, pinnate, or peltate, in the case of *Astilboides tabularis*. The palmately compound leaves of *Rodgersia aesculifolia* (fingerleaf rodgersia) resemble the leaves of horsechestnut (*Aesculus* spp.), hence the origin of the specific epithet. Its leaf is comprised of five to nine coarsely toothed leaflets that arise from a central point. Each leaflet is up to 12 inches long, broadest at the tips, and has a rugose or wrinkled texture due to deep venation. By comparison, the palmately compound leaves of *R. podophylla* (bronzeleaf rodgersia) have five large, lustrous leaflets that are jaggedly toothed and thrice lobed at the broad apex. Its supersized foliage can be up to 36 inches wide.

The pinnately compound leaves of *Rodgersia pinnata* (featherleaf rodgersia) look superficially like fingerleaf rodgersia but rather than originating from a central point, the five to nine leaflets are separated into two groups by a short stalk. In some cases, the two groups of leaflets may be so closely spaced that the leaf looks palmate, which is an intermediate trait described as pseudo-pinnate. A mix of the two leaf types

can be present in a single plant. The ovate leaflets, six to eight inches long, are broadest in the middle and taper at both ends. Rodgersia sambucifolia (elderberry rodgersia) has pinnately compound leaves that are reminiscent of elderberries (Sambucus spp.), and composed of seven to eleven oblong leaflets arranged oppositely along an axis. Astilboides tabularis (astilboides) differs from rodgersias in having shield-shaped, simple leaves that are shallow-lobed, toothed, and up to 3 feet wide. And being peltate, the bristly petioles attach to the undersides of the leaves, much like nasturtiums (Tropaeolum spp.) and lotuses (Nelumbo spp.). Rodgersias and astilboides grow from stout, slowly spreading rhizomes that can form large patches over time. Their

leaves are basal, which means that the long petioles arise directly from the rhizomes rather than a stem; thus, the length of the petiole is essentially the height of the plant sans floral stalks.

Rodgersias begin blooming in early summer. Floral stalks, ranging from 36 inches to 72 inches tall, terminate in pyramidal to flattened panicles containing numerous small apetalous flowers with creamy white, yellow, or pink sepals and stamens. Flowers are often colorful for a time after anthesis but eventually turn brown or black in late summer. The floral stalks may remain erect and persist into winter; however, the deciduous foliage declines and collapses in autumn and does not provide any winter interest. Similarly, the floral stalks of astilboides hold plumes of tiny, creamy white flowers well above the foliage. Unlike rodgersias, astilboides has both petals and sepals like the flowers of astilbe (*Astilbe* spp.), which is the derivation of *Astilboides*.

For optimum health and growth, rodgersias and astilboides do best in consistently moist soils—no standing water though—in sunny or shady gardens that are sheltered from desiccating winds. Cultural missteps are the usual cause of poor performance and unsightly displays. Plants that receive inadequate moisture become tatty and unkempt as the summer goes on. This problem is exacerbated by high temperatures and direct sunlight that can also scorch the foliage. Rodgersias are fairly untroubled by diseases, although slugs



and snails can be pests. Rodgersias and astilboides are listed for USDA Hardiness Zones 5 to 7/8 but late spring frosts can damage emerging foliage in colder regions; *Rodgersia podophylla* emerges earlier than other species and may be more susceptible to frost injury in Zone 5. Required maintenance in the growing season is limited to the removal of damaged or unsightly foliage to improve the ornamental display. Deadheading is recommended as flowers turn brown. Regular mulching around the plants will help retain moisture and keep soils cool.

As a focal point or in mass, rodgersias and astilboides are well-suited to garden borders, woodland edges, or near ponds. Their handsome foliage pairs nicely with other moisture-loving perennials such as Siberian irises (*Iris sibirica*), bleeding hearts (*Dicentra spectabilis*),



Rodgersia podophylla 'Rotlaub'

meadowsweets (*Filipendula* spp.), hostas (*Hosta* spp.), bugbanes (*Actaea* spp.), and a variety of ferns such as lady fern (*Athyrium filix-femina*), autumn fern (*Dryopteris erythrosora* 'Brilliance'), and maidenhair fern (*Adiantum pedatum*). Well-grown rodgersias make impressive displays, and being long-lived, they get better with age.

The Evaluation Study

The Chicago Botanic Garden (USDA Hardiness Zone 5b, AHS Plant Heat-Zone 5) evaluated 16 taxa of Rodgersia between 2004 and 2014. The comparative trial included Astilboides tabularis, which was previously known as Rodgersia tabularis and is still horticulturally grouped with rodgersias because of their similar ornamental traits and garden uses. Each taxon was evaluated for a minimum of six years but some were grown for up to 10 years. The goals of the project were to determine the cold-hardiness of commercially available rodgersias and astilboides, and to recommend the best ones for Upper Midwestern gardens.

Three plants of each taxon were planted in close proximity for easy comparison of ornamental traits and landscape performance. From 2004 to 2008, the trial beds were naturally shaded by several mature trees including red oak, white ash, and white-barked birch. The loss of a red oak in 2008 significantly changed the shade pattern, causing half of the trial beds to be in full sun from mid-morning to mid-afternoon in subsequent years. A cedar fence enclosed the trial site providing some wind protection from all directions. The well-drained, clay-loam soil had a 7.5 pH during the trial.

Maintenance practices were kept to a minimum, thereby allowing the plants to thrive or fail under natural conditions. Trial beds were irrigated via overhead sprinklers as needed, top-dressed with composted mulch once each spring or summer, and regularly weeded. Moreover, plants were never fertilized or winter mulched. Any frost-damaged foliage was removed in the spring to encourage new leaves to emerge, and all plants were cut back to the ground in the fall following a hard frost.





Rodgersia aesculifolia

The Evaluation Report

The trial began in the spring of 2004 with the planting of six taxa including Rodgersia aesculifolia, R. pinnata 'Elegans', R. pinnata 'Superba', R. podophylla 'Bronze Form', R. podophylla 'Rotlaub', and Astilboides tabularis. The remaining 10 taxa were added to the trial between 2005 and 2009. All plants were evaluated for their cultural adaptability to the soil and environmental conditions of the test site; disease and pest problems; winter hardiness or survivability; and ornamental qualities associated with foliage and plant habit. Floral traits and phenology were monitored but ultimately were not factored into the overall rating due to generally low flower production and sporadic bloom from year to year. Final performance ratings are based on foliage and habit quality, plant health and cultural adaptability, and winter hardiness during the trial period. Plant traits and final performance ratings are shown in Table 1.

The majority of taxa in the trial received four-star good ratings for their overall performance. Top-rated plants displayed consistently attractive foliage, robust habits throughout each growing season, adaptability to the light conditions of the trial site, and winter hardiness. The 15 taxa that completed the trial are included in Table 1; Rodgersia pinnata 'Elegans' was determined to be incorrect and did not receive a final rating. The confusion surrounding its identification was due to the preponderance of palmate rather than pinnate leaves. While it is true that leaflets of R. pinnata may sometimes be so closely attached in the center as to look palmately compound, we concluded that the evaluation plants resembled R. aesculifolia much more than R. pinnata. Subsequent flowering confirmed that the plants were indeed R. aesculifolia.

With a few exceptions, the rodgersias were adapted to the soil and growing environment of the trial site. The culture of the site was significantly altered in midsummer of 2008 when a mature red oak that provided natural shade was removed. A number of plants that had been receiving early morning sunlight and afternoon shade for several years were suddenly growing in direct sunlight for up to six hours each day. Among the taxa that suffered periodic foliar scorch due to excessive sunlight in one or more years beginning in 2008 were Rodgersia 'Die Schöne', R. 'Hercules', R. aesculifolia, R. pinnata 'Fireworks', R. pinnata 'Superba', R. podophylla 'Bronze Form', R. podophylla 'Rotlaub', and Astilboides tabularis. And while we strived to maintain consistently moist conditions in the test site, the soil occasionally dried out

Rating ¹	Rodgersia	Flower Color	Flower Size ²	Bloom Period	Spring Leaf Color	Height ³ 16/57 in.	Width
***	Astilboides tabularis	creamy white	1⁄4 in./13×8 in.	mid-June to mid-July	light green		30 in.
****	Rodgersia aesculifolia	creamy white; peachy petal tips	¼ in./14×8 in.	early to late June	light bronze in May	20/32 in.	36 in.
****	Rodgersia 'Badenweiter'	creamy white	¾ in./24×11 in.	late May to late June	red-bronze in May	27/37 in.	50 in.
***	Rodgersia 'Die Schöne'	light pink; creamy white stamens	¼ in./25×6 in.	early June to late June	deep bronze in May	24/50 in.	45 in.
****	Rodgersia 'Hercules'	light; creamy white stamens	¼ in./15×9 in.	early to mid-June	deep bronze in May	27/42 in.	42 in.
****	Rodgersia 'Kupfermond'	pale pink; creamy white stamens	¼ in./16×10 in.	early June to late June	deep red-bronze in May	36/58 in.	68 in.
****	Rodgersia pinnata 'Chocolate Wing'	light pink; rosy buds	½ in./6×6 in.	early June to late June	bronze in early May	21/32 in.	37 in.
***	Rodgersia pinnata 'Fireworks'	creamy white; pink stamens	½ in./6×6 in.	late May to mid-June	deep bronze in May	20/35 in.	26 in.
***	<i>Rodgersia pinnata</i> 'Superba'	creamy white; pinkish cast	¾ in./15×8 in.	late May to late June	bronze in May	30/50 in.	58 in.
****	Rodgersia podophylla			did not flower	bronze in April	32 in.	60 in.
****	Rodgersia podophylla 'Braunlaub'			did not flower	bronze in April	14 in.	24 in.
***	<i>Rodgersia podophylla</i> 'Bronze Form'			did not flower	bronze in April	24 in.	52 in.
***	Rodgersia podophylla 'Rotlaub'	creamy white	¾ in./8×6 in.	early June to late June	bronze in April	24/44 in.	48 in.
****	Rodgersia podophylla 'Smaragd'	creamy white	¼ in./9×11 in.	early to late June	bronze in April	30/42 in.	55 in.
****	Rodgersia sambucifolia	light pink	¾ in./5×8 in.	early June to early July	bronze in April	22/35 in.	55 in.

¹Overall Ratings: ★★★★ excellent, ★★★★ good, ★★★ fair, ★★ poor, ★ very poor ²Flower Size: inflorescences measured as height × width ³Height to top of foliage/height with flower stalks

between irrigation and/or rain events. Heat stress during dry periods resulted in foliar wilting and/or marginal desiccation. Wilted plants fully recovered and further marginal necrosis was arrested once adequate moisture levels were restored. Chlorosis due to high soil alkalinity was a minor cultural issue in the trial; however, severe chlorosis was observed in 2007 on plants of *R*. 'Die Schöne' and *R. sambucifolia*.

Damage from pests and diseases was infrequent and inconsequential in the trial. Rabbit browsing was observed in 2004 and 2008 only. Moderate damage—loss of one to several leaves per plant—was noted on *Rodgersia* 'Badenweiter', *R.* 'Die Schöne', *R. pinnata* 'Superba', and *R. podophylla* 'Rotlaub'. In each instance, the browsing damage was a onetime occurrence. Slugs were a more typical pest with minor to moderate cosmetic damage noted in multiple years but never enough to affect plant health.

Cold hardiness was not an issue for the rodgersias as no plants were winter-killed during the trial period. However, frost injury to emerging or new foliage in spring was a recurring problem for some taxa. Moderate to severe frost damage—50 percent to 100 percent—was noted on *Rodgersia podo*-

phylla 'Bronze Form', R. podophylla 'Rotlaub', and Astilboides tabularis in 2004, 2006, 2008, 2010, and 2013. Frost damage occurred because these taxa emerged earlier in the spring, typically in the second week of April. The emergent dates for most other taxa were in the first or second week of May; and in most cases, after the last frost date. Minor spring frost damage was observed in one year only on R. 'Hercules' (2007), R. aesculifolia (2004), R. pinnata 'Superba' (2004), and R. podophylla 'Smaragd' (2010). In each of these cases, leaves emerged on or just prior to the date of the last significant frost. Weather data for the trial period is shown in Table 2.

The rodgersias generally exhibited good habit traits and foliage quality over the course of the trial. On the whole, plants began forming robust habits after several years in the garden. Nonetheless, by the third year of the trial it was determined that a longer evaluation period would be beneficial due to fairly slow growth rates; mature plant sizes and habits were often not observed until the fifth or sixth year. Good foliar quality was maintained as long as plants received adequate soil moisture and appropriate light levels. Leaf size was variable each year and was directly influenced by springtime temperatures and moisture availability during leaf develop-

ment. For example, the leaves of Astilboides tabularis ranged from 12 inches wide in typical years to over 2 feet wide in exceptionally wet springs. Among the rodgersias, distinctions in foliar coloration in spring ranged from dark to light burgundy or bronze, and either remained colorful for several weeks or faded quickly. Despite descriptions that tout long-lasting bronze to burgundy foliage, no taxon retained noteworthy coloration beyond late May; however, cool temperatures in spring enhanced foliage color. Although rodgersias are flowering plants, the floral habits observed in the trial did not appreciably enhance ornamental displays. In all cases, flowering was slow to develop and inconsistent from year to year, and flowers were produced at extremely low levelstypically one to several floral stems per plant at best. Maturing inflorescences were colorful after anthesis, often looking healthy and attractive into midsummer or occasionally later.

Most of the hybrid cultivars displayed robust habits and attractive, healthy foliage all summer. 'Badenweiter' (aka 'Badenweiler'), a form of fingerleaf rodgersia, had large, palmately compound leaves. The leaves emerged red-bronze and typically held this color until mid-May; the color was strong

Table 2: Weather summary for 2004-2014

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Lowest temperature °F (°C)	-9(-23)	-2(-19)	-8(-22)	-10(-23)	-6(-21)	-17(-27)	0(-18)	-7(-22)	2(-17)	-3(-19)	-16(-27)
Lowest temperature date	1/30	12/7	2/18	3/5	1/20	1/16	1/3	2/10	1/21	1/22	1/6
Highest temperature °F (°C)	93(34)	100(38)	100(38)	96(35)	93(34)	96(35)	97(36)	102(39)	105(41)	96(35)	91(33)
Highest temperature date	6/6	6/24	7/31	7/9	7/17	8/9	7/23	7/20	7/5	7/18	7/17
Number of growing season days ^a	155	158	143	196	181	175	177	192	165	185	186
Number of days below 0°F (-18°C)	10	2	2	11	16	8	16	5	0	3	24
Number of days above 90°F (32°C)	5	24	15	20	6	7	6	22	40	15	5
Last frost date	5/3	5/4	4/26	4/16	4/30	4/18	4/28	4/21	4/24	4/20	4/16
First frost date	10/5	10/23	10/12	10/28	10/28	10/10	10/22	10/30	10/6	10/22	10/19
Annual rainfall in inches (cm) ^b	35.5(90.2)	24.4(61.9)	42.5(107.9)	41.0(104.1)	49.5(125.7)	38.8(95.5)	35.6(92.5)	48.2(122.4)	31.1(78.9)	39.1(99.3)	42.5(107.9)
Annual snowfall in inches (cm)°	27.2(69.1)	44.4(112.7)	23.4(59.4)	38.5(97.8)	78.5(199.4)	28.8(75.2)	51.8(131.6)	35.3(89.7)	23.4(59.4)	40.3(102.4)	66.4(168.7)

^aNormal growing season: 162 days

^bAverage rainfall: 37.4 inches (94.9 cm)

°Average snowfall: 34.7 inches (88.1 cm)

Data collected at Chicago Botanic Garden weather station

Latitude: 41°51'N. Longitude: 87°37'W. Altitude: 578.74 ft. (176.4m)



but not as dark as other hybrid cultivars. After anthesis, its inflorescences turned rosy and were colorful into late summer. 'Hercules' (aka 'Herkules') featured dark bronze foliage in early spring; leaves held a light bronze cast into late May and early June. Its inflorescences remained green for a long time after flowering.

'Kupfermond' had the darkest red-bronze spring leaves, followed in diminishing intensity by 'Die Schöne', 'Hercules', 'Fireworks', and 'Chocolate Wing'. Its deep color faded to green tinged with bronze in late May, then developed bronzy margins in summer, and ultimately turned red in October. 'Kupfermond' was one of the top-performing rodgersia every year and was notable for its reliably bushy habit. 'Die Schöne' was loose and slower growing than most other rodgersias, but eventually formed sizeable plants. The predominantly pinnate leavessome palmate leaves were presentemerged deep bronze and faded to green by late May. Recurring issues with heat stress and leaf scorch contributed to the fair rating for 'Die Schöne'. Flower production on all of the hybrid cultivars was low, and flowers were only produced in a few years of the trial.

Rodgersia podophylla 'Smaragd'



The palmately compound leaves of Rodgersia aesculifolia emerged light bronze in May but the color quickly faded. Compared to the hybrid cultivars, its early bronze coloration was insignificant. The dark green summer leaves were healthy and unblemished in most years, but leaf scorch was noted periodically after the loss of shade in 2008. Fingerleaf rodgersia seemed to adapt well to the increased sunlight it received because leaf scorch was never more than a minor issue. While flower production was low, it produced more flowers than any other taxon. As the flowers faded, the inflorescences turned pink and then green, and usually did not detract from the ornamental display until early to mid-August.

The foliage of *Rodgersia pinnata* can be variable in form; in fact, leaf arrangements that were intermediate between *R. pinnata* and *R. aesculifolia* were fairly common in our trial. The short stalk separating the two groups of leaflets may be foreshortened or nearly nonexistent, thus giving the leaf the appearance of being palmately compound. 'Chocolate Wing', while described as a cultivar of featherleaf rodgersia, had distinctively palmate foliage. Nomenclatural issues aside, its leaves emerged brown-

bronze but turned green by late May. As with other rodgersias, leaf color was enhanced in cool weather. Minor leaf scorch was noted on several plants of 'Chocolate Wing' in 2009. The deep bronze foliage of 'Fireworks' was comparable in color to 'Die Schöne' and 'Hercules' in May. Unfortunately, heat stress and minor leaf scorch was observed on 'Fireworks' in all seven years of its trial (2008 to 2014). Like other rodgersias, flower production on 'Fireworks' was low but flower stems and the persistent calyces stayed red into August. 'Superba' was a reliably strong selection despite suffering moderate to severe leaf scorch in most years between 2004 and 2010. Following the loss of shade in 2008, these plants grew in full sun for much of the day until a replacement tree had grown large enough by 2011 to cast substantial shade. The light bronze leaves faded to green by late May. The deep rosy red floral stems remained colorful into late August in each of the three years that 'Superba' bloomed.

Rodgersia podophylla and its cultivars featured the boldest leaves in the trial, typically growing more than 2 feet across. Their large leaflets differed from other species due to the jaggedly toothed margins and broad,





Rodgersia 'Fireworks'

lobed tips. Bronzeleaf rodgersia emerged earlier than other rodgersias-mid- to late April compared to early to mid-May, which put them at risk for late spring frost injury in most years. In the trial, the new leaves of R. podophylla were bronze into mid-May and then turned green for the remainder of the summer. These plants were grown in full shade throughout the trial, and no winter crown injury or spring frost damage to leaves was noted. The three plants of 'Braunlaub' were weak at planting and took several years to bulk up, but remained the smallest taxon during its trial period from 2009 to 2014. Its early bronze coloration faded to bright green for the summer. Some heat stress and leaf scorch was noted in 2011 and 2012, but no frost damage was observed on plants of 'Braunlaub'.

The lush leaves of *Rodgersia podophylla* 'Bronze Form' emerged bronze and changed to bright lustrous green with a bronze cast that remained for most of the summer. After the loss of shade, plants of 'Bronze Form' received full sun until midafternoon, which caused minor to severe leaf scorch in most years after 2008. Due to its early emergence—typically between April 14 and April 21—these plants suffered late frost damage in five years of the trial. Replacement leaves emerged within a week or two after being injured, and recovered fully within a month. 'Rotlaub' was likewise troubled by late frosts and leaf scorch but at much lower levels than 'Bronze Form'. Its bronze coloration faded appreciably by mid-May, but leaves retained a bronze cast all summer. As was the case with some rodgersias, the leaves of 'Rotlaub' were shabby looking by late September due to slugs, scorch, and/or wind damage. The robust plants of 'Smaragd' had consistently large lush foliage and produced flowers in half of the trial years. Its emerging leaves were not damaged by late frosts; the early bronze color faded fairly quickly to green in April.

The pinnately compound leaves of *Rodgersia* sambucifolia consisted of one terminal leaflet and multiple pairs of leaflets separated



by short internodes along the axis. The pinnate aspect of the leaves was substantially more pronounced than on *R. pinnata*. Slow to emerge in spring, its leaves opened bronze, faded to green with bronze margins, and eventually turned fully green. Inflorescences remained green long after the light pink flowers had finished. Elderberry rodgersia was never as full or robust as other taxa but the loose spring habit typically filled out well by midsummer.

Simple leaves and petaliferous flowers mark the difference between astilboides and rodgersias. The pale green parasollike leaves of Astilboides tabularis can be guite large, up to 3 feet wide, although in our trial were rarely larger than 2 feet wide. We observed that blade size was directly related to moisture and temperature during leaf emergence and development; that is, leaves were larger in warm, wet springs. Although produced in low quantities in several years only, the pleasantly fragrant, creamy white flowers were borne in large drooping plumes in June and July; inflorescences remained attractive into late August when they turned from green to brown. Young leaves suffered moderate to severe frost damage in several springs but new leaves regenerated quickly following injury. Plant detritus from overhead trees often collected in the depression at the center of its peltate leaves.

Summary

While not counted among the largest studies undertaken at the Chicago Botanic Garden, the rodgersia trial brought together a good representation of new and uncommon taxa available to gardeners. Of the 15 rodgersias that completed the trial, 11 taxa including *Astilboides tabularis* received four-star good ratings for their overall performances based on ornamental traits, plant vigor, and winter survivability. The protracted evaluation period allowed for additional observations on long-term cultural needs and longevity, which is not always evident during a standard four-year trial.

Rodgersia pinnata



Astilboides tabularis

It was clear from the beginning of the trial that the rodgersias were not going to be strong bloomers, at least under the existing environmental and cultural conditions. In light of this, the rodgersias were evaluated and rated as foliage plants only. Since all taxa in the trial exhibited low flower production and sporadic bloom cycles, floral displays were monitored but not factored into the final performance ratings.

The loss of a mature red oak that had provided natural shade to the trial site created an opportunity to observe how the change in cultural conditions within an aging landscape affects existing plants, which is a problem that homeowners encounter when old trees decline and must be removed. Rather than scrapping the trial due to the unsuitable environment caused by increased sunlight, we chose to monitor the adaptability of the established rodgersias to the new light conditions. Whether planted in sun or shade, rodgersias require consistent moisture for optimum growth; therefore, the periodic droughty conditions in the test site also influenced plant health. In full sun, and especially during dry periods, some plants looked scorched and/or tattered by midsummer. Surprisingly, most plants adapted well to the less-than-ideal culture of the test site, but there was no doubt that appropriate growing conditions would have improved the performance of all taxa, not just the low-rated ones.

Lower ratings were largely due to environmental or cultural damage and the frost susceptibility of young leaves.

On the whole, rodgersias proved to be hardy, bold-textured perennials for northern gardens. Their handsome foliage complements an array of moisture-loving perennials in formal gardens and naturalistic landscapes alike. Although never strong-blooming plants in our trials, the large floral plumes were always appreciated when present. And by meeting their basic cultural requirements, the reward is lush, slightly exotic plants for many years.

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