

NEW PLANT FORUM

Compiled and Moderated by Jack Alexander

PRESENTERS:

Jack Alexander, The Arnold Arboretum, Jamaica Plain, Massachusetts 02130 U.S.A.

Parthenocissus tricuspidata 'Fenway Park'

Dale Hendricks, North Creek Nurseries, Inc., R.R. #2, Box 33, Landenberg, Pennsylvania 19350 U.S.A.

Aster oblongifolius 'October Skies'

Oenothera fremontii 'Lemon Silver'

Panicum virgatum 'Shenandoah'

Don Merrick, Monrovia Nursery Co., 13455 SE Lafayette Hwy. Dayton, Oregon 97114 U.S.A.

Hosta 'Eola Salad Bowl'

Hosta 'Hottsy Tottsy'

Claude Richer, Agriculture Canada CRDH, 430 Boul Gouin, Saint-Jean-sur-Richelieu, Quebec G1K 7P4 Canada

Rosa 'AC De Montarville'

Rosa 'AC Marie-Victorin'

Rosa 'AC William Booth'

Tom Ward, The Arnold Arboretum, Jamaica Plain, Massachusetts 02130 U.S.A.

Poliothyrsis sinensis

Timothy Wood, Spring Meadow Nursery, Inc. 12601 120th Ave. Grand Haven, Michigan 49417 U.S.A.

Euonymus fortunei 'Interbolwji', Blondy® euonymus

Itea virginica 'Sprich', Little Henry™ dwarf sweetspire

Spiraea betulifolia 'Tor'

Weigela florida 'Alexandra', Wine & Roses™ weigela

Aster oblongifolius 'October Skies'. A shorter, bushier, bluer sister of 'Raydon's Favorite'. A strong-growing low mound of bushy 18-inch-tall foliage spreading 18 to 24 inches. Highly tolerant of drought and poor soils. An excellent groundcover potential native plant hardy in Zones 3 to 7.

Euonymus fortunei 'Interbolwji', Blondy® euonymus. A bold new shrub with big, bright yellow splotches in the center of the leaf and bright yellow stems. Very popular in Europe, where it has literally replaced 'Sunspot'. Discovered by Bolwijn

Nursery in the Netherlands as a sport of 'Sunspot'. Great impulse color provides year-round color.

Hosta 'Eola Salad Bowl'. Eola salad bowl plantain lily is a *H. sieboldiana* seedling, selected at Monrovia by Steve Hottovy. The actual parentage is not known as it resulted from seed collected from open-pollinated named cultivars. 'Eola Salad Bowl' is hardy to Zone 3 (-40 to -30F). Size is 24 inches high by 8 to 10 inches wide. This unique miniature hosta has wavy leaf margins with a curled mid-rib and chartreuse green to yellow foliage that becomes brighter yellow with more sun.

Small pale lilac flowers appear on spikes in June. It is a clumping tight miniature which can be used in a border with other hostas and perennials or as a container planting. When grown in a container this hosta looks like a bowl of your favorite bib salad and is sure to catch the eye of hosta enthusiasts around the world.

Hosta 'Hottsy Tottsy'. Hottsy tottsy plantain lily is a perennial originating as a *H. sieboldiana* seedling, selected at Monrovia by Steve Hottovy. The actual parentage is not known as it resulted from seed collected from open-pollinated named cultivars. It is hardy to Zone 3 (-40 to -30F), 24 inches tall, and 3 ft wide. Yellow leaves are larger than *H. 'Golden Prayers'* and the golden color performs well in the full sun without burning. Flowers are pale lilac appearing on spikes in June and July.

It has a clumping form and develops into rounded full specimen. Performs well in the landscape as a border, mixed with other hostas and perennials or as a container planting.

Itea virginica 'Sprich', Little HenryTM dwarf sweetspire. Sweetly scented, pure-white flowers shoot like fireworks in the early summer horizon from this plant. A low mounded, compact stature which is perfectly suited for flooding large banks, beds, and borders. If burning bush has good fall color, then this plant is a wildfire. What more could you want in a plant. Developed by Richard Feist at Hummingbird Nursery in Kentucky.

Oenothera fremontii 'Lemon Silver'. A day-blooming evening primrose with low, silver, lance-shaped foliage, and plenty of light, clear-lemon flowers of tissue paper texture. Flowers from June to September and is happiest in hot, bright, dry well drained spots. Height is 6 inches.

Panicum virgatum 'Shenandoah'. The brightest red *Panicum* by a long shot. Experienced horticulturists have mistaken it for *Imperata cylindrica* 'Red Baron' at first glance. It colors up by June and the flowers are also red. The shortest of the group at 3 ft and also the slowest grower, perhaps due in part to its lack of greenness. Introduced by Dr. Hans Simon of Germany. At native species hardy in Zones 4 to 9.

Parthenocissus tricuspidata 'Fenway Park'. This unique cultivar of Boston ivy (*P. tricuspidata*) produces yellow-green foliage. The plant originated as a bud-sport mutation on a specimen that was growing on a west-facing wall of an apartment complex in the vicinity of Fenway Park, Boston, Massachusetts. Arboretum staff member Peter Del Tredici discovered the plant in August 1988 while on his way to a Red Sox baseball game with his son. The evening sun was setting and the top portion of a mostly green plant seemed to glow in the fading twilight. Upon closer examination, it was discovered that the upper part of the vine was producing bright yellow leaves. With the cooperation of the superintendent of the building, cuttings

of the mutant portion were collected and subsequently propagated in the greenhouses of the Arnold Arboretum.

The outstanding characteristic of this new variety is the coloration of its leaves during the growing season, which, depending upon the amount of light they receive, are various shades of yellow to chartreuse. When grown in full sun, leaf coloration comes close to Royal Horticultural Society (RHS) yellow-green 151A to C. When grown in shade, the leaf color is a uniform lime green (RHS 154D). The coloration of the leaves of 'Fenway Park' is stable throughout the growing season. In the fall they turn brilliant shades of orange, scarlet, and yellow. In full sun, the distal portion of many of the large leaves may lose their chlorophyll altogether, making their tips susceptible to sun-scald during hot, dry summers. For this reason, the plant is best grown on a north- or west-facing wall. 'Fenway Park' is hardy within U.S.D.A. hardiness Zones 4 through 9, and is useful as a climbing vine to brighten up walls, fences, or buildings, that are located in dark, shady places.

Poliothyrsis sinensis. This plant was unknown to horticulture in the U.S. until E.H. Wilson collected it for the Arnold Arboretum in 1908, from central China. The present plants we have growing on the grounds come from seed sent to us from the Shanghai Botanical Garden in 1981. At 18 years of age the plants are vigorous, large, multistemmed shrubs, reaching at this time to 15 to 18 ft in height and 8 to 10 ft in width. In its native habitat this plant has the potential to develop into a tree of moderate size. The foliage is dark green and very lustrous, turning a consistent butter-yellow color each fall. Its flowers are borne each year on that seasons new wood and appear in late August to early September. The inflorescence is made up of numerous small, yellowish-white flowers. The flower shape and fruit capsule are similar in structure to that of *Syringa vulgaris*. We have had no insect or disease problems with this plant, while also seeing that it has good drought tolerance. It propagates easily from seed and softwood cuttings. Seed is available upon request from the Arnold Arboretum.

ROSES — EXPLORER™ CULTIVARS

Agriculture and Agri-Food Canada's winter-hardy roses from the Explorer™ cultivar-group are hardy, require minimal care, are environmentally friendly (minimal sprays), yet offer beautiful bloom through the summer and are fast becoming the preferred rose. They are hardy down to -35C with only snow as winter protection, are disease resistant, flower repeatedly throughout the summer, require only minimal pruning and come in a range of colors and sizes.

Characteristics of three new winter-hardy roses from the Explorer (E) series are described below:

***Rosa* 'AC De Montarville'**. 'AC De Montarville' is a winter-hardy shrub rose which was introduced in 1997. The plant has an upright type growth habit and reaches 1.0 m in height and width at L'Assomption. The plant flowers repeatedly from June to September and is resistant to powdery mildew and tolerant to blackspot. This rose is superior in floral production to most hardy roses and is in a similar range to 'Champlain' and 'Frontenac' in total length of blooming season.

The dark red unopened bud of 'AC De Montarville' changes to a medium pink at the blossom stage and later fades to a medium mottled pink when fully opened. The flowers average 7 cm in diameter, have 26 petals, and are borne in clusters of 1 to

4. The plant propagates easily from softwood cuttings.

This selection has been tested at Ottawa for 2 years and an additional 3 years at L'Assomption. Little pruning is required in spring and it is hardy in Zone 3.

'AC De Montarville' originated from a cross between a breeding line derived from 'Queen Elizabeth' and 'Arthur Bell' and a line derived from *R. kordesii*, 'Masquerade', 'Red Pinocchio', 'Joanna Hill', and *R. spinosissima*.

Rosa 'AC Marie-Victorin'. 'AC Marie-Victorin' is a hardy shrub rose launched in 1998 at the Montreal Botanical Garden. This is a small climbing roses that reaches a height of 1.5 m and 1.25 m in width at L'Assomption. It is winter-hardy, flowers abundantly and repeatedly, and is highly resistant to blackspot and powdery mildew.

The unopened bud which is a deep peach colour changes to a pale peach at the blossom stage and later fades to a pink in the fully opened flower. Its corymbs are made up of one to six flowers, each one averaging 9 cm in diameter, with 38 petals. The pink and peach buds can be used as boutonnières. It has been released because of its unique peach colour rarely found in hardy roses, its excellent hardiness, and its disease resistance. The rose propagates easily from softwood stem cuttings.

The bright orange fruits in fall remain on the bush over the winter. The leaves, a dark shiny green in summer, turn yellow and red in the fall.

This selection has been tested at Ottawa for 2 years and 5 more years in various climatic Canadian Zones (2 to 5), in Quebec and Ontario. It is hardy in Zone 3 without special winter protection and adapts very well in Zone 2 with a natural snow cover. It may require pruning of deadwood in the spring.

'AC Marie Victorin' originated from a cross between the floribunda 'Arthur Bell' and breeding line L03, an open-pollinated seedling of a cross between *R. kordesii* and 'Applejack'.

Rosa 'AC William Booth'. This cultivar will be introduced in 1999, is a winter-hardy shrub rose that has a spreading to trailing type growth and reaches a height of 1.5 m and a spread of 2 m at L'Assomption. The plant flowers repeatedly from June to September and has excellent resistance to blackspot and powdery mildew.

The deep red unopened bud of 'William Booth' changes to a medium red at the blossom stage and later fades to a light red in the fully opened flower. The flowers average 5 cm in diameter, have five petals and are borne in clusters of 8 to 10 blooms. Softwood stem cuttings root easily.

This selection has been tested at Ottawa for 2 years and an additional 3 years at L'Assomption. It requires little to no pruning in the spring and is hardy to Zone 3.

'AC William Booth' originated from a cross between L83, a line derived from *R. kordesii* and the breeding line A72, which originated from a cross between the floribunda 'Arthur Bell' and the shrub rose 'Applejack'.

These three cultivars were recently registered with Canadian Ornamental Plant Foundation (COPF), they have been protected with the Plant Breeders Right Office since 1997 and are available on the Canadian market to eight licensees and commercial American requests were assigned to Bailey Nurseries.

Spiraea betulifolia 'Tor'. The pinnacle of adornment with a multitude of tightly packed, white flower clusters against a backdrop of iridescent green leaves. A compact, rounded habit, and exceptional purple autumn color add to this plants allure. Blooms in mid to late spring. It is a Scandinavian selection.

***Weigela florida* 'Alexandra', Wine & Roses™ weigela.** Weigela has never looked so good. Dark burgundy-purple foliage blows 'Java Red' weigela away; leaf color intensifies to near black in mid summer. Intense rosy-pink colored flowers jump against the dark glossy foliage. Developed by Herman Geers of the Netherlands.

POSTER SESSION PAPERS

A New Computer-Controlled Multifertilizer Injector for Recycling Nutrients and Water Run-Off in Nurseries

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INTRODUCTION

Nursery production practices can cause pollution if nitrate and other nutrients leach into the groundwater and surrounding environment.

NEW AUTOMATED TECHNOLOGY

A new computer-controlled multifertilizer injector has been developed to monitor, control, and recirculate nutrients and irrigation water. This patented system was designed in the late 1980s by Climate Control Systems, Inc., Leamington, Ontario, Canada, and subsequently tested by scientists at Agriculture and Agri-Food Canada in Harrow, Ontario (Papadopoulos and Liburdi, 1989). The system was initially developed for the greenhouse vegetable industry, but shows promise for use in outdoor container nurseries.

The system described herein (Fig. 1), was specifically designed for research and is smaller than a typical commercial unit. The cost was \$25,000. The computer is an IBM compatible 486/66 MHz with 8 MB of RAM. A minimum of 100 MB of hard drive is required for data storage. The software is written in Quick Basic and contains 1.4 MB of code. The control panel uses plug-in Opto Modules, which facilitates ease of replacement.

Fertigation can be initiated manually or automatically by time or solar set point. A delay feature can postpone fertigation during rainfall. For each fertigation cycle, the computer stores and can graphically display all nutrients, electrical conductivity (EC), pH levels, and flow rates. The system is equipped with alarms to warn if nutrients, EC, and/or pH levels are too high or too low, or if there is a system malfunction.

A two-tiered (1.2 m long × 1.4 m high × 0.5 m wide) stainless steel frame contains 10 electrically driven, individually controlled, dosimetric pumps. Each pump is con-