

# The *Boxwood* Bulletin

A Quarterly Devoted to Man's Oldest Garden Ornamental



Smithsonia with foundation plantings of *Buxus sempervirens* 'Suffruticosa' will be open on April 22, 1997, as part of the Fredericksburg Tour for Historic Garden Week in Virginia. See story on page 70. (Photo: D. Frackelton)

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# The American Boxwood Society

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The American Boxwood Society is a not-for-profit organization founded in 1961 and devoted to the appreciation, scientific understanding and propagation of the genus *Buxus* L.

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Family	\$35	Life	\$500
Contributing	\$50		

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*Index to The Boxwood Bulletin 1961-1986* \$ 10

*Index to The Boxwood Bulletin 1986-1991* \$ 4

*Index to The Boxwood Bulletin 1991-1996* \$ 3

Publications may be ordered from Mrs. K. D. Ward, ABS Treasurer, 134 Methodist Church Lane, West Augusta, VA 24485-2053. Prices quoted are postpaid.

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Gifts to the Society are tax-deductible and may be undesignated or applied to:

Boxwood Memorial Garden Fund

Boxwood Manual Fund

Boxwood Research Fund

ABS Blandy Capital Fund

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Treasurer, The American Boxwood Society  
P.O. Box 85, Boyce, Va. 22620-0085

For general information about the Society, advice concerning boxwood problems or cultivar selection, write to The American Boxwood Society at the same address. You are also welcome to write directly to the President:

Dr. Stephen D. Southall  
3912 Faculty Drive  
Lynchburg, Va. 24501-3110

## Call for Papers:

Technical articles, news, history, lore, notes, and photographs concerning boxwood specimens, gardens or plantings are solicited for possible publication in *The Boxwood Bulletin*. Material should be submitted to:

Chairman, Bulletin Committee  
1714 Greenway Drive  
Fredericksburg, Va. 22401-5209

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# 37th Annual Meeting Scheduled for May 16-17, 1997

## ABS Returns to Blandly

After a hiatus of four years the Annual Meeting of The American Boxwood Society will return to Blandly. (Old timers say "Blandly" or "Blandly Farm," but now the emphasis is on using the term "State Arboretum of Virginia." Blandly Experimental Farm of the University of Virginia is the total complex. A portion of the farm is the Orland E. White Arboretum, named for Dr. White who was the first director. The Virginia State Legislature designated the Orland E. White Arboretum as the State Arboretum of Virginia, and the White name was retained.)

The ABS was founded in 1961 with 404 Charter Members, representing 32 states, and headquarters at Blandly. One objective was to establish a boxwood museum to be composed of a collection of all hardy and adapted *Buxus* species and cultivars; a library of books and articles dealing with boxwood; and eventually a collection of pressed, mounted and named dried herbarium specimens, based on the living collection.

At the ABS Annual Meeting in May 1977, the planting of the Memorial Garden, named in honor of Dr. J. T. Baldwin, Jr., and Henry J. Hohman, had begun. Admiral Neill Phillips, President of the Society from May 1, 1962, until he resigned because of ill health in 1976, was credited with being the moving force behind the establishment of the Memorial Boxwood Garden.

Now, twenty years later, a redesigned and relocated ABS Memorial Garden is being readied for this 37th Annual Meeting. Also, the Saturday tour will begin with a return to the Glen Burnie garden, visited at the same meeting in May 1977.

Speakers will include Gabe d'Eustachio, Bonnie Appleton and Keith Folsom. Gabe d'Eustachio will dis-

Schedule of Events	
<b>Friday, May 16</b>	
Blandly Farm Library	
9:00-11:00 a.m.	Registration to pick up your packets and guided tours of Memorial Garden
11:00 a.m.	Annual Business Meeting
12:00 noon	Lunch
1:00 p.m.	Gabe d'Eustachio: "Leafminer on <i>Buxus</i> "
1:30 p.m.	Bonnie Appleton, Va. Cooperative Extension Service: "New Directions in Container Plant Production"
2:00 p.m.	Break
2:15 p.m.	Keith Folsom: "Water Gardening"
3:30 p.m.	Boxwood Plant Auction
Wayside Inn - Senseny Room	
6:00 p.m.	Social hour and dinner (cash bar)
8:00 p.m.	Mrs. Mary B. Gildersleeve: "English Gardens"
<b>Saturday, May 17</b>	
9:00 a.m.	Bus departs Wayside Inn, Middletown
9:15 a.m.	Bus departs Comfort Inn, Stephens City
9:30 a.m.	Tour Glen Burnie gardens
11:00 a.m.	Visit garden of Mr. & Mrs. William F. Cook, Millwood, Va.
12:30 p.m.	Box lunch at Blandly Farm
1:30 p.m.	Visit boxwood garden at Tuleyries, adjacent to Blandly
2:30 p.m.	Visit garden of Mr. and Mrs. Harrison Symmes, Upperville, Va.
4:00 p.m.	Return to hotels

cuss results of the leafminer studies on *Buxus* which he conducted. The ABS partly funded this research. (See *The Boxwood Bulletin*, Vol.35, No.1, p.8.) Bonnie Appleton, of the Virginia Cooperative Extension Service, Hampton Roads Agricultural Experimental Station at Virginia Beach, will speak on new methods of container plant production and new tools for more comfortable operations. Keith Folsom of Springdale Aquatic Gardens, Greenville, Va., renowned for water gardens and water plants, will talk about water gardening.

Our popular Boxwood Plant Auction will follow the speakers program.

Please write Mrs. Scot Butler, 107 Cottage Dr., Winchester, VA 22603-4209 if you have a named boxwood to donate to the auction. (540) 665-5879.

Dinner will be at historic Wayside Inn in the Senseny Room. After dinner Mrs. Mary B. Gildersleeve will give her excellent slide presentation on English Gardens.

Saturday May 17 is Tour Day. The bus will pick up attendees at the two lodgings. The first stop is the Glen Burnie garden, which was the home of James Wood, founder of Winchester. (See *The Boxwood Bulletin*, Vol.17, No.2, p.21-24.)

The second stop will be at the garden of Mr. and Mrs. William F. Cook of Millwood, Va. A box lunch will be served at Blandly.

After lunch there will be a visit to the boxwood gardens of Mrs. Orme Wilson, Jr. of Tuleyries, adjacent to Blandly, and the last stop will be at Upperville to view the garden of Mr. and Mrs. Harry Symmes. Mr. Symmes is an ABS Life Member and former Director.

**Meeting Registration**

**DEADLINE: April 20**

Mail the enclosed form to Mrs. R. L. Frackelton, 1714 Greenway Dr., Fredericksburg, VA 22401-5209.

- *Registration fee: \$15.00*
- *Fee for May 16, including lunch and dinner: \$40.*
- *Fee for May 17, including bus, tour, and lunch: \$25.*

**Lodging Reservations**

**DEADLINE: April 20**

Each registrant will be responsible for his own lodging arrangements. Rooms at two hotels will be held for ABS registrants until April 20, 1997. Both are just off I-81.

Located in Middletown, exit 302 off I-81, the Wayside Inn has been



*Twenty years ago, on May 11, 1977, Alden Eaton, Richard D. Mahone, Tom Ewert (then Director of Blandly) and Albert S. Beecher (then President of the ABS) planted a pear tree named for Dr. J. T. Baldwin's mother.*



*Twenty years ago, Glen Burnie when the garden was opened for the 1977 ABS Annual Meeting.*



serving guests since 1797. There are three rooms on the first floor, each with a double bed, additional rooms on the second floor are reached by stairs (no elevator). Each room is \$80, single or double occupancy. Breakfast, not included, is served 7-11 a.m. Call (540) 869-1717.

The Comfort Inn is in Stephens City, at exit 307 off I-81, and has

standard motel rooms. Continental breakfast is included. Rooms are \$50.00, single or double occupancy. Call (540) 869-6500.

**How to Get to Blandly**

Blandly may be reached easily from these lodgings. Take I-81 north to exit 313. Go east on U.S. 50 for about 10 miles. The State Arboretum sign is on the right.



*One of the garden vistas at Glen Burnie twenty years ago.*



*Earlier this year, in February 1997, a heavy blanket of snow covered the ABS Memorial Garden, which was being readied for the Annual Meeting.*

# Life History of the Boxwood Leafminer

Gabriel d'Eustachio, University of Maryland, College Park, Maryland

*Over the past two years The American Boxwood Society has been supporting the research of Mr. Gabe d'Eustachio, a graduate student at the University of Maryland who is doing his masters thesis on the boxwood leafminer. The following is an outline of the research being done and speculation on expected results. Over the next year, the results of his research will be published and there will be following articles here summarizing his findings.*

Boxwoods are a key plant in numerous landscape settings. It is hard to imagine a traditional English garden or a southern plantation without boxwoods. Fortunately, there are only three significant pests that attack boxwoods: the boxwood leafminer, the boxwood mite and the boxwood psyllid. The most damaging of these is the boxwood leafminer, *Monarthropalpus buxi* (Order: Diptera, family: Cecidomyiidae). The boxwood leafminer causes blistering and yellowing of leaves, leading to browning and premature leaf drop. This can severely weaken the plant and in some cases make it susceptible to winterkill. Boxwood leafminer damage is very widespread, and is one of the most common pests in landscape plantings. A survey of Maryland landscapes in 1982 found that while boxwoods in residential settings accounted for only 8.8% of the total plants, boxwood leafminers accounted for almost 25% of the total pest problems (Raupp 1985). In various settings, almost 43% of landscape boxwoods show leafminer problems (Raupp 1984) and require treatment.

There is a notable lack of research and information available on the boxwood leafminer. This article will

detail the development and life cycle of the boxwood leafminer and will mention the natural enemies of boxwood leafminer. Over the next few months, future articles will discuss effective control strategies and possibly resistant cultivars.

## Development

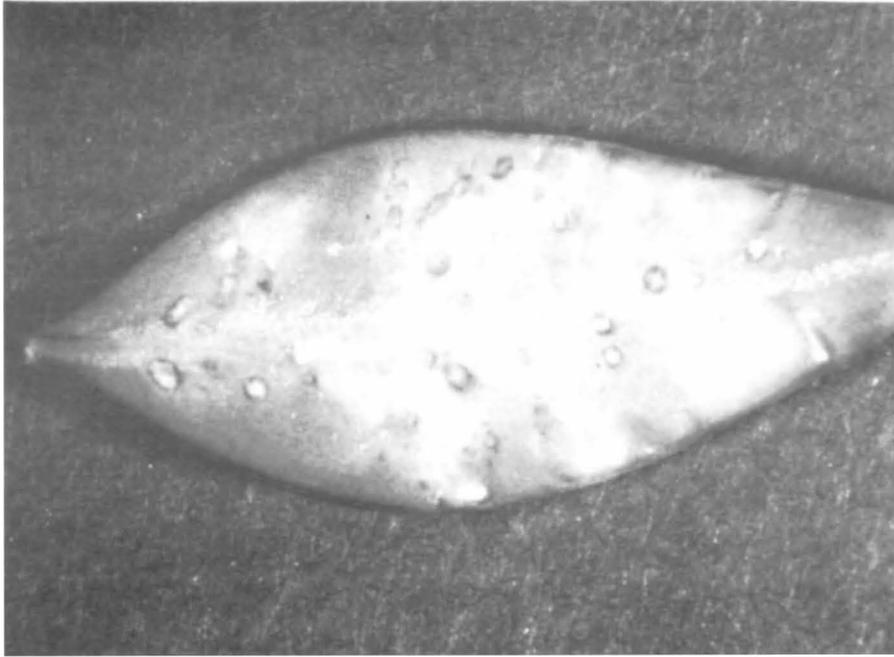
The boxwood leaf miner is a small, fragile fly in the family Cecidomyiidae that lives most of its life inside the leaves of boxwood. The family Cecidomyiidae includes the Hessian Fly (a pest of winter wheat), and includes some beneficial species that are aphid predators. It was first identified by Laboulbène in 1873 (Laboulbène 1873) who gave a thorough description of its morphology and life cycle. His description included an excellent set of drawings of the adults, larva, and gall damage. The orange adults lay eggs in the underside of newly emerged leaves

by inserting them into the leaf tissue with a sharp, heavily sclerotized ovipositor. They have not been observed to feed from the oviposition scars as some leafminers do (Barnes 1948). The period of adult emergence has long been believed to be the best time for the application of control tactics.

The emergence of the adults is strongly correlated with the spring leaf flush, much like the holly leaf miner (*Phytomyza ilicicola*). Boxwood leafminer adults emerge in late April-early May. Adults are bright orange, delicate, nematocerous flies that look rather like small orange mosquitoes. Boxwood leafminer adults are quite noticeable against the dark green background provided by mature boxwoods, and their emergence is hard to miss. Even in lightly infested plants the adults form a dense cloud around their host boxwood, and will cling to the clothing as well as be inadvertently inhaled by



*Boxwood leafminer adult. (Photos, except as noted: Davidson)*



*Heavily damaged leaves. Note oviposition scars and swollen, discolored galls. (Photo: d' Eustachio)*

a nearby observer. This is an ephemeral stage, as the adults only live for about a day requiring them to quickly mate and oviposit. Female boxwood leafminers have a sharp, pointed ovipositor that they use to insert their eggs into the underside of boxwood leaves. This is quite a task, and they spend several minutes twisting their ovipositor into the leaf tissue. Females are observed to take from 3-8 minutes to oviposit (Hamilton 1925). Oviposition only occurs on new growth and fresh growth appears to be critical for larval survival. Similarly, the larvae appear to survive only on new growth. This is most likely due to the generally higher food quality of younger growth (Raupp and Denno 1983). Potter (1986) observed that holly leafminer development is closely linked to the presence of various defense mechanisms in holly, both structural and chemical. Quantitative allelochemicals such as tannins and lignins tend to be at lower levels in younger leaves, and younger leaves are noticeably more tender (personal

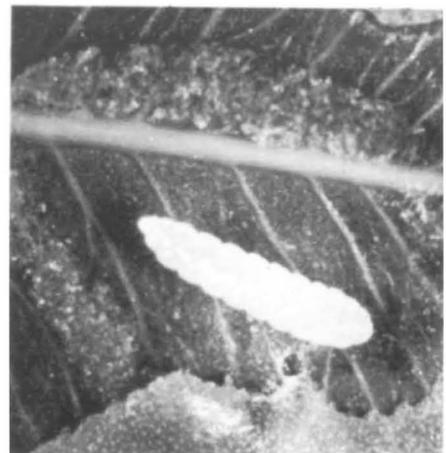
observation). Additionally, it has been hypothesized that gall-formers can only form galls on plant material that is still growing (Washburn and Cornell 1981 in Potter and Redmond 1989), although with boxwood leafminer, gall development doesn't really pick up until late fall/early winter. Brewer (1980) noticed that survivorship decreased significantly if the adults were forced to wait 1-2 weeks before being allowed to oviposit. This is possibly due to the leaves being too old for the leafminers to effectively utilize them.

Boxwood leafminers remain in their eggs until mid June. Eggs are small, gelatinous, translucent masses about the size of a leaf parenchyma cell. They are placed deep into the underside of the leaves. It has been estimated that females can lay an average of 20 eggs (Hamilton 1925). Oviposition leaves a distinct scar on the underside of the leaves, which is visible to the naked eye. Shining a light source through the leaf makes the oviposition scars even more apparent.

First instar larvae are about the same size as their eggs. They are horseshoe-shaped and basically featureless little maggots. The second instar (starting in July) is marked by the larvae "straightening out" and growing a bit larger. Second instar larvae grow remarkably larger, and this stage lasts until late August/early September. This is when gall formation begins. Hypertrophised cells are visible in the parenchyma layer of the leaves. By mid-August, the gall is visible as a pair of tiny bumps proximal and distal to the central vein of the leaf, on either side of the oviposition scar. This placement of gall tissue is probably due to the distribution of some unknown gall forming factor moving through the secondary veins of the leaf.

By late August to early September the larvae have molted into their third instar. This is marked by the appearance of the sternal "breastbone" or spatulum. Third instar is the stadia (life stage) in which boxwood leafminers pass the winter. Boxwood leafminers continue to grow and develop through the winter months, albeit rather slowly. There is very little winter mortality.

In the early months of spring (mid-March), the larvae molt into the fourth instar. The breastbone becomes



*Boxwood leafminer in gall. Note gall material. (Photo: d' Eustachio)*

notably longer and forms a distinctive 'T' shape at its posterior end. This is the point where most economic damage occurs. Galls grow to their full size and the leaves become yellow or brown where galls have formed. Opening a gall will reveal specialized gall tissue clearly visible to the naked eye. The larvae are quite large (~2mm) and will writhe and roll about if disturbed. There are still very few features visible to the naked eye besides the breastbone. Examination under a microscope reveals an ever-scable head and mouthparts structure. Clearly visible under low magnification are a pair of single segmented antennal tubercles. Higher magnification reveals various mouthparts, including mandibles, maxilla, a labrum, and labium. These are all very small, slightly sclerotized and probably not very powerful. It has been speculated that the larvae feed by piercing gall cells and feeding on their liquid contents. As no fecal matter is readily visible in the galls, it is unlikely the larvae feed on anything solid.

Near the end of the fourth instar, the larvae carve a small, one-cell-thick "window" in the underside of the leaf. Usually each larva will make its own window, but sometimes larvae will share a window. After window formation is complete, the larva pupates.

After about a month, fourth instar larvae will pupate in mid-April. Pupae start a light orange color and darken as they mature. Pupae have free legs, distinct wingpads, eyes and can still writhe about if disturbed. The eyes, antenna and wingpads turn from a light red to near black during development.

At the conclusion of the pupal stage, the pupae push their way out of the gall through the window and hang by their posterior end as the adult sheds its pupal skin through a suture in the thorax. Several researchers,

including Chaine (1913) and Brewer (1981), have shown that adult emergence usually occurs in the first few hours of daylight. Adults emerge rather quickly, completely free of the pupal cast in about ten minutes. Within five minutes of emergence, the wings have expanded and the adult is able to fly. It is believed that



*Pupa emerging from underside of leaf. The cast pupal case will be left hanging from the leaf surface.*

they quickly mate and the females start ovipositing shortly. Haste is important as the adults do not feed and can survive only for a day or two.

### Natural Enemies

The only predator that seems to have a significant effect on boxwood leafminer population is predatory birds, primarily titmice. Birds do serious damage to the plants to get to the mature larvae, and can tear up most of the leaves on a given plant. The damage done by birds is almost worse than that done by the insects! The only other enemy noted was the occasional wasp pupa in the galls. It appears to be a chalcid (a common parasitic wasp) but tended to be so fragile that any attempt to remove them from the gall resulted in destroying them. These were very rare, and only a handful were found out of the thousands of galls analyzed. No other predators were observed save the occasional adult trapped in a spider web.



*Mature boxwood leafminer pupa. Wingpads, eyes and head have darkened and the pupa will emerge soon.*

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# Boxwood in Historic Parterres

Sigrid Georgii Harriman

Europe experienced a period of great expansion and wealth during the seventeenth and eighteenth centuries. After the Thirty-Year War of 1618-1648 the Roman Catholic Church reaffirmed its hegemony and the royal houses of France, Italy, and Spain set out to build grand palaces and churches in the exuberant style of the baroque, celebrating the triumph of the Roman Catholic Church over the more restrained Protestants.

Palaces were adorned with outdoor spaces reflecting the wealth and power of their owners. Boxwood was used as a major planting design feature in most great gardens. Formidable structural hardscapes, e.g., balustrades, walls, statues, fountains, were enhanced by boxwood plantings which formed an evergreen backdrop and lined vistas of a magnitude no

one attempts today. Boxwood was used to complete large outdoor spaces, to soften massive walls, to surround enormous statues, to line wide steps and to provide a visual link between outdoor rooms and galleries.

In this article, I will provide a short description of boxwood parterres in two gardens from about the same period: The Palace of Versailles near Paris, and Herrenhausen in Hannover, Germany.

The gardens of Versailles were begun in the 1660s and designed by the architect Vaux Le Vicomte and the royal gardener Le Notre. As with every other feature of the palace, the gardens of Louis XIV and Louis XVI were intended to draw admiration and awe from visitors to Versailles. The gardens of Herrenhausen, on the

other hand, were conceived on a more human scale. Both gardens have outstanding parterres constructed in accord with the dictates of the time:

“The planting of box ...will not be made in a confused manner... so that compartments remain uniform... We should note that, just as a painter endeavors to make one side of his design match the other, so the gardener will do likewise ...for example, if on the right you have a design of a scroll, a square, a circle, an oval ...then on the left this must appear without addition, subtraction, or any other variation...” (Oliver de Serres, *Theatre d'Agriculture*, 1600.)

The French term *par terre* itself means “on the ground” and implies a low growing planting bed bordered by a low hedge. Historically, five different parterre styles can be



*Latona parterre with a view of the main axis at Versailles. (Photos: Sigrid Harriman)*

differentiated: *parterre de broderie* (embroidered parterre), 1620-1700; *parterre de compartement* (compartamental parterre), 1650-1750; *parterre à l'Angloise* (English parterre), 1650-1750; *parterre de pieces coupées pour les fleurs* (floral parterre), 17th-18th century; *parterre d'Orangerie* (orangery parterre), late 17th-18th century (from: Hansman, *Gartenkunst*, 1993).

### Versailles

Although I spent the better part of one day in the gardens of Versailles, I saw only a fraction of the 2,000 acre park. Overwhelmed by these formidable spaces, I concentrated on the parterres which extend in front of the stone terrace along the palace and follow the main east-west axis of the park toward the bosquets, the dense,

exactly trimmed trees forming a green wall. The parterres de l'Eau are vast compartamental water parterres designed to mimic the Hall of Mirrors in the palace. Fourteen bronze statues in the two pools personify the major rivers of France. The borders are low stone walls instead of boxwood. Two ramps lead down on the west end of the water parterres to the parterre de Latona, a marble basin filled with water and in its center the goddess Latona. (See photo of Latona parterre with view of main axis.) This is flanked by two large grassy carpets. Below stretch the parterres du Nord with twenty-four statues, in groups of four, representing the cosmic forces - the seasons of the year, the times of the day, the elements, the continents, the humors, the genres of literature. These compartamental parterres are

surrounded by sharply clipped *Buxus sempervirens* 'Suffruticosa' hedges about 3' high. To the left and right of the parterre de l'Eau are the parterres du Midi, true flower parterres. (See photo from the lower parterres toward the palace.) This is where a sumptuous display of flowers can be seen from June through October. In May I observed several gardeners with electric shears trimming the 3' *Buxus sempervirens* 'Suffruticosa' hedges. I learned that the plants are routinely replaced with new ones, every 5-7 years as they are clipped twice a year to prevent unsightly new shoots from obscuring the geometric lines. (See photo of shearing.)

At the end of my visit I saw the parterre d'Orangerie on the south end of the parterre du Midi where potted exotic plants, such as orange, lemon



*View from the lower parterre toward the Versailles palace.*



*Electric shears in use at Versailles.*

and lime trees flourish in the summer.

Leaving the gardens of Versailles, I realized that much of the arrogance of Versailles is common to seventeenth and eighteenth century thought concerning the related status of man and nature. To Louis XIV, and to his

contemporaries (indeed, to many even today) beauty was not to be found in the natural world, but rather in the symmetry, order, and balance imposed by “rational” man.

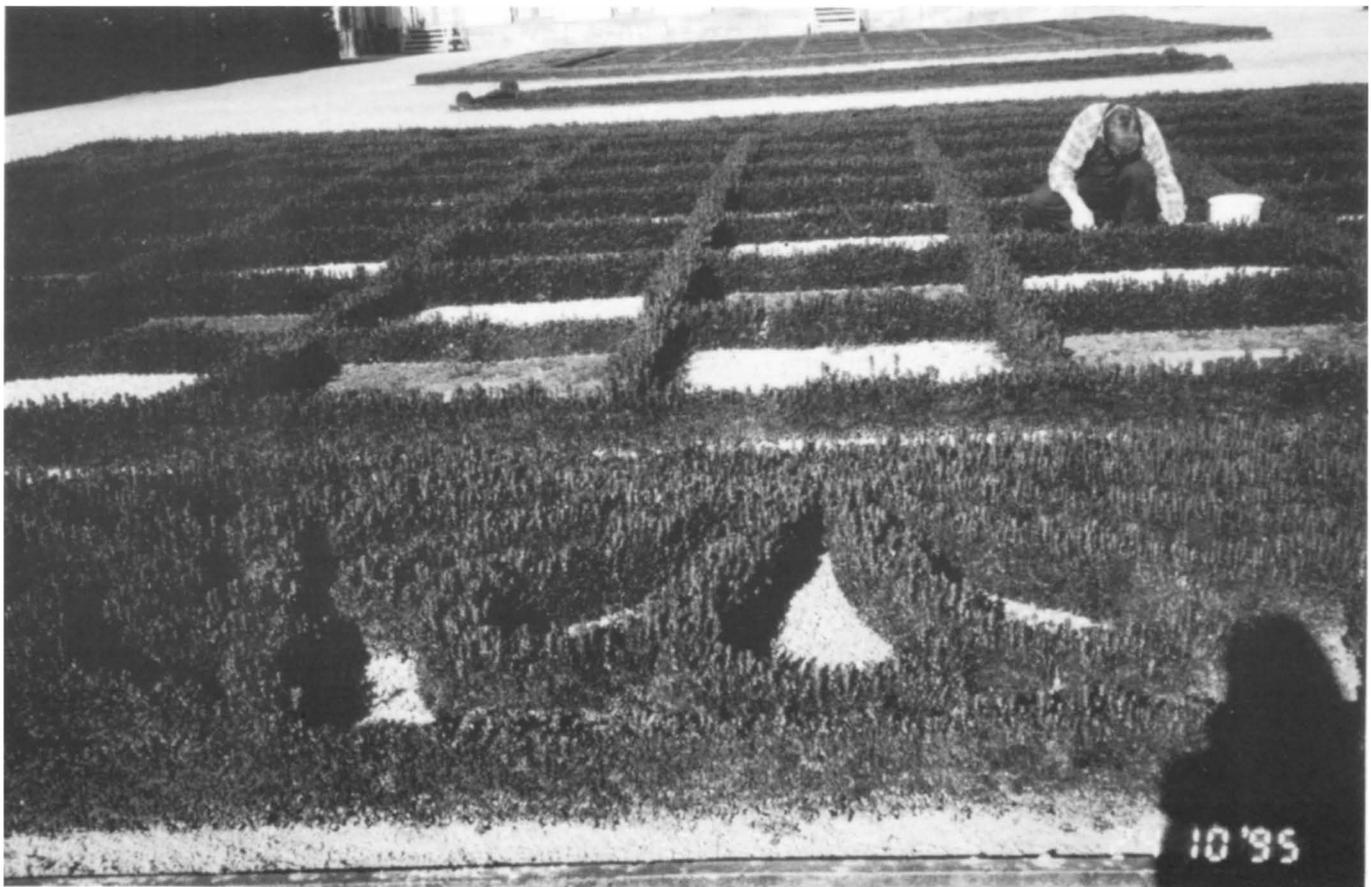
### **Herrenhausen.**

I visited Herrenhausen within a week of my stay in Paris, and was at once struck by the differences in size and style. Herrenhausen was the former residence of the electors of the House of Hannover, and in 1682 the Electress Sophie commissioned the French gardener Martin Charbonnier to design, with the Dutch gardener Joost van Sasse, the “Great Garden of Herrenhausen.” As a result of the Electress’ personal involvement, Herrenhausen is on an intimate scale and appeals today in different ways to the visitor.

The composition of the rectangu-

lar garden, surrounded on three sides by water, is at once Dutch and French in its concept. The water canals swing around a “full moon” (a circular, open space onto which many paths converge) at the end of the main axis. The parterres and bosquets are arranged between the former palace and the “full moon.”

The palace itself was destroyed at the end of World War II, only the southern facades remain. The gardens have been restored in a contemporary interpretation of parterres. As in Versailles, I concentrated on the parterres and their delineating plantings of boxwood. I recognized embroidery, English, flower, and orangery parterres in most pleasing arrangements. The orangery parterre is filled with alternating shaded gravel simulating a giant chess board. (See photo showing a gardener



*Hand trimming in parterre d'orangerie at Herrenhausen.*

trimming boxwood.) In the embroidery parterres, gravel and severely trimmed grass alternate to enhance the designs. Low green borders of boxwood define the spaces and embellish larger areas.

Ornamental shapes used by goldsmiths and tapestry workers were generally adapted in the baroque style by gardeners to "embroider" parterres. (See photo showing highly ornamental swirls.) Approximately 300,000 boxwood border plants, only 8-14" tall and about thirteen miles long, are being gradually replaced with more winter hardy plants. (See photos of embroidery parterre with *Buxus microphylla* 'Herrenhausen' turned orange-rust and new plantings of *Buxus sempervirens* 'Blauer Heinz' without winter discoloration.)

It is this replacement process that prompted me to meet with Dr. Hans Preissel, the director of the Herrenhausen Garten in Hannover. According to him, several qualifications had to be met by a particular variety of *Buxus* to be chosen for Herrenhausen's extensive boxwood borders. First, the branching pattern of the plant is considered the most important attribute. This can easily be determined on uncut, two- to three-year old plants. If the branching is stronger at the crown of the plant, the plant will grow to an upright hemisphere. Second, the plant has to be winter-hardy and should show the least amount of discoloration during the cold months.

Dr. Preissel informed me that they have experimented with many

different varieties during the last 20 years. *Buxus sempervirens* 'Blauer Heinz' cultivars emerged as the strongest and most suited for the cold winters in northern Germany. (See *The Boxwood Bulletin* Vol.28, No.1, July 1988, pp. 8-9.)

Before the 1960s, the Herrenhausen parterres used plants from asiatic *Buxus microphylla* var. *koreana* [sic] strains to develop winter-hardy plants designated *Buxus microphylla* 'Herrenhausen'. In spite of its hardiness, the 'Herrenhausen' strain exhibited a spreading growth pattern, and was subject to winter discoloration. Each fall all borders were covered with spruce branches to prevent frost damage. This proved too labor intensive and expensive, so the practice was discontinued.



*Highly ornamental swirls at Herrenhausen.*

Meanwhile, in the Netherlands, winter hardy cuttings were developed and selected. After years of cloning and propagation, the gardeners in Herrenhausen reached their goal: a winter hardy, slow and upright-growing plant, *Buxus sempervirens* 'Blauer Heinz', so named for its bluish-green leaves and its propagator, Heinz Grupe, who had worked at the Herrenhausen Gardens for more than 40 years. This cultivar fills all the requirements for an ideal parterre plant and was registered in 1987 (it is not yet available in the U.S.) Its slow upright growing habit makes it an ideal border plant, for it needs only one top trimming per year. Cuttings can also easily be rooted.

Although 'Herrenhausen' was officially invalidated as a cultivar,

examples of the strain remain. I saw some very attractive plants with interesting spreading habit and a generally neat appearance after years without trimming. Other varieties used in Herrenhausen's gardens are *Buxus microphylla* 'Morris Midget', 'Green Gem', 'Green Mountain', 'Green Velvet' and *Buxus sempervirens* 'Suffruticosa' and 'Anderson'. Most boxwood parterres, however, are planted with 'Herrenhausen' and, increasingly, 'Blauer Heinz' cultivars. At the end of the visit Dr. Preissel led us through a woodland setting of the garden where numerous boxwood varieties flourish untrimmed, protected, and well shaded.

In closing I must stress that this article by no means attempts to compare the gardens of Versailles

with the gardens of Hannover. Versailles' gardens cannot be compared to anything; after all, Louis XIV, "The Sun King," considered himself and his creations the absolute center of the universe. However, a major distinction between the two gardens can be seen in the use of the plants.

In Versailles' gardens, plants were employed in service of an abstract design concept, as the unifying green space between parterres, bosquets, fountains, and statues. The plant itself was likely chosen for its slow growth and evergreen appearance. In Herrenhausen, boxwood was always a living plant, used to enhance elaborate spaces, flowering plants and exotic trees. It was used to "embroider" and intensify complex designs.



*Embroidery parterre discoloration of 'Herrenhausen' cultivar.*

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# Historic Garden Week Preview

## Selected Gardens with Notable Boxwood Plantings

H. Munson, Executive Director of Historic Garden Week

Among the many beautiful public and private properties with exceptional boxwood plantings featured this year during Historic Garden Week in Virginia is the birthplace of President Thomas Woodrow Wilson. Tours of the stately residence and delightful English bow-knot box garden will be offered as part of Staunton's Garden Day event on Saturday, April 26. The Staunton program is one of more than 30 tours scheduled across the state April 9-26.

Wilson, the twenty-eighth president of the United States, was born in the manse in 1856 while his father was pastor of Staunton's First Presbyterian Church. In the mid-19th century, outbuildings stood on the location of the current garden grounds. Today, the birthplace, gift shop and visitor center museum are set in an intricate pattern of forecourts and terraces with a graceful bow-knot parterre garden as the focal point of the entire complex. Planted in 1933, the landscape project was the third restoration program funded by The Garden Club of Virginia with proceeds from Historic Garden Week, and one of more than three dozen of the state's historic properties which the Garden Club has restored since 1929.

A resident of the manse, after the Wilsons, created the plan which became the inspiration for the garden design, although it is not known whether the design was executed earlier. Noted landscape architect Charles F. Gillette discovered the plan during research for the garden.

The Garden Club of Virginia has also completed two expansions of the garden, a brick terrace in 1968 and the landscaping and walks to the



*Bow-knot parterre garden at the Woodrow Wilson birthplace in Staunton, Virginia. (Photos this page: Woodrow Wilson Birthplace Foundation)*



*Bulbs and peonies are in one of the parterres at the Woodrow Wilson birthplace garden.*

adjoining new museum in 1991. After a leisurely walk through these lovely grounds, enjoy a tour of the museum's interior which portrays life in the 1850s during Wilson's youth.

Fredericksburg is the site of several other important Garden Club restoration projects open on the Garden Day tour there Tuesday, April 22. Historic Kenmore was the Garden

Club's first restoration in 1929. Beginning in 1993, the Club undertook another extensive redesigning and replanting of the gardens. Without precise archival and archaeological data, the landscape which has been created is conjectural. Landscape architects Charles Gillette and Alden Hopkins treated the west front of the mansion as a tree-covered lawn in the 18th-century manner. The rear of the property is planted to a four-square garden with borders planted with boxwood, bulbs and perennials.

Along the Fauquier Street wall is an example of *Buxus sempervirens* 'Pendula'. The weeping box plantings were sent to Kenmore by Mount Vernon's horticulturist Bob Fisher some 40 years ago and were taken from boxwood which had originally grown at the Lee family ancestral home, Stratford Hall Plantation.

In recent years, a major goal at Kenmore has been to feature 18th-century and native plant material. In 1992, a wilderness walk was added to the southwest corner of the property. The creation of wilderness walks containing native American plants was popular in the late 18th century.

Also open on the Fredericksburg tour is the charming 1895 Lodge adjacent to the Mary Washington Monument. The grounds of the monument were landscaped by The Garden Club of Virginia in 1930. Mature trees, boxwoods and a brick wall form the background for the resident's cottage garden. At the Mary Washington House garden nearby, re-created by the Garden Club in 1968-69, are found some of the English boxwoods said to have been planted by Mary Ball Washington in the late 18th-century from small slips, as well as her original sundial.

Smithsonia, originally part of the Kenmore property, features a variety of fine boxwood plantings. The box around the front and side of the



*Buxus sempervirens* 'Pendula' along the Fauquier Street wall.

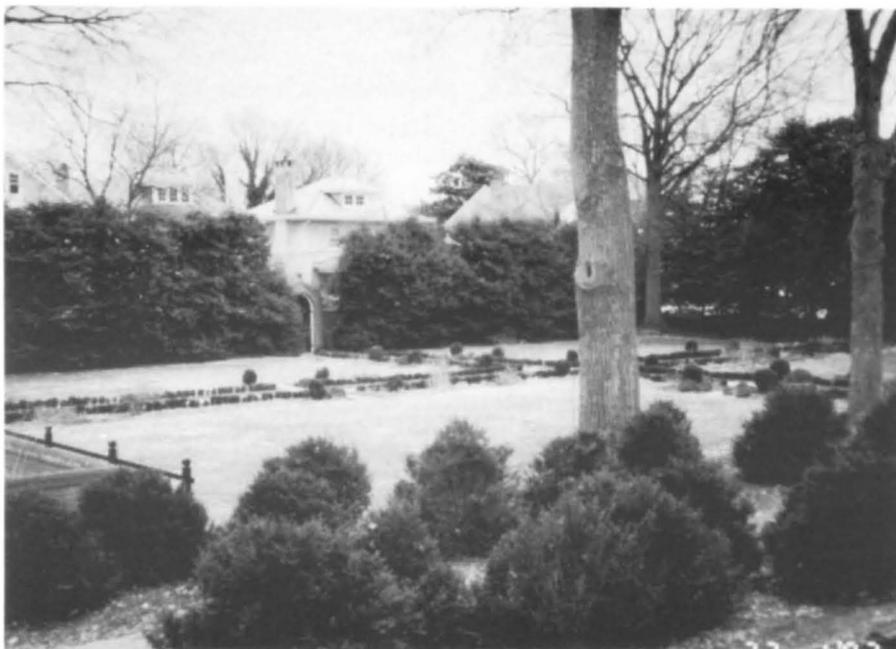
elegant Greek Revival house are "English" *Buxus sempervirens* 'Suffruticosa'. These were planted in the mid-1940s by Dr. Earl Ware from small plants from Gunston Hall and Mount Vernon. The borders around the terrace are Kingsville boxwood, *Buxus microphylla* 'Compacta'. Miss Lucy Duer, a member of the

Warrenton Garden Club, started them and that club sold them as a fundraiser. The present owners, Mr. and Mrs. Douglas F. Quarles, Jr., planted them at their home in The Plains, Virginia, and moved them to Smithsonia.

Another private home on the walking tour in Fredericksburg's historic district, the residence of Dr. and Mrs. David F. Huddle at 1104 Charles Street, contains boxwoods in the front and rear gardens which were originally at Chatham, one of Fredericksburg's foremost architectural and historic landmarks, also open during Garden Week.

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*Many of this year's other Garden Week tours feature gardens with interesting and historic boxwood landscaping. Additional details about more than 250 properties open in April are outlined in the Garden Week guidebook, available in early March. To reserve your copy, mail a \$3 donation for postage and handling to Historic Garden Week, 12 East Franklin St., Richmond, VA 23219.*



*The lower bed of the Kenmore garden is a four-square design with borders of boxwood, bulbs and perennials. In the foreground is *Buxus sempervirens*.*



*Barricades close off a section of walk where the oldest Buxus sempervirens 'Suffruticosa' overlap. These are believed to date back to Mary Ball Washington.*



*At Smithsonian in Fredericksburg, Va., Buxus microphylla 'Compacta' borders a curved retaining wall. (Photos: D. Frackelton, except as noted)*

## Maryland House and Garden Pilgrimage April 1997

Information and photos supplied by Marianne Graham, Co-Chairman of Publicity

On Saturday, April 26, the **Queen Anne's County Tour** will open the 60th Anniversary Maryland Pilgrimage. This historic county, established in 1706, took its name from Good Queen Anne of England. Its oldest community was settled between 1628 and 1631. The county contains 350 square miles with vast waterfronts and few hills.

One of the places featuring boxwood on this tour is Readbourne. Originally a plantation of about 2,000 acres, it is now a tract of 975 acres. The site of the house is on land that descends in a series of "falles" to a wide river front on the Chester River. George Read received the land grant in 1659. The present house was built in 1731 by Col. James Hollyday after his marriage to Sarah Covington Lloyd, a Quaker widow, who is buried in the little graveyard near the house. He and his descendants lived there for 168 years. The central part

of the house is early Georgian in design with large wainscoted halls and rooms. The paneling from the dining room is now at Winterthur. The various owners have been careful to preserve the integrity of the original in spite of structural additions and alterations over time.

**Somerset County** was established in 1666 by Cecil Calvert, the second Lord Baltimore, and later divided with the seaboard side established as Worcester County in 1742. Princess Anne, founded in 1733, became the county seat of Somerset in 1744. In 1867 parts of the counties of Somerset and Worcester were partitioned to form Wicomico County. This tour will take place April 27.

Kingston Hall in Somerset County, Md., is located on the Great Annemessex River. It survives as a significant Revolutionary War era plantation dwelling. The main house

has floor-to-ceiling raised paneling, a formal note in contrast to the patterned, worn brick floors and exposed hand-hewn and pit-sawn ceiling joists of the kitchen west wing.

Linden Hall, built 1835-36, has remained with few alterations over the years. The original beaded siding and Federal style entrance with arched fanlight has an interior of the original Federal and Greek Revival woodwork. There are a total of nine fireplaces, including a cooking fireplace in one of the four cellar rooms and a large brick "pyramid" cooking fireplace with original cranes in the kitchen which is attached to the main house by a hyphen. The grounds have a formal boxwood garden and topiaries.

Teakie Mansion has a boxwood garden in the back along with a smokehouse and dairy/wash house. Owned by Olde Princess Anne Days, Inc., Somerset County Historical

Society, it was begun in 1802 by Littleton Dennis Teakie of Northampton, Va. Architectural features include a carefully carved cornice and a round window set within a triangular pediment of the front gable and decorative plaster panels above first floor windows and door openings.

Historic Boxwood Gardens, Princess Anne, is a boxwood parterre dating from the 1840s. (See *The Boxwood Bulletin* Vol.30, No.4, p.59-60 and Vol.35, No.2, p.25-29) Restoration on this boxwood parterre was begun about 10 years ago when the boxwoods were 6-8' tall. They were cut back several times, most recently in the spring of 1996, to their present height of 24". Ivy is being removed from the parterres. Where they have died, boxwood will be replaced. Companion plants include



*Readbourne in Queen Anne's County has "grown" from the 1731 central part. It overlooks the Chester River.*



*Kingston Hall in Somerset County is landscaped with boxwood.*

camellia, azalea, crape myrtle, redbud, witch hazel, yucca, hosta, veronica, roses, bulbs and many perennials.

A walking tour of **Historic Lutherville in Baltimore County** may be enjoyed on Saturday May 3. This unique Victorian era residential community was developed by two Lutheran ministers, beginning in 1852. It still retains the flavor and charm of a country village.

One of the gardens on tour, Oak Grove at 313 Morris Avenue is being renovated. A 19th-century print showing "Dr. Morris' Cottage" reveals knee-height "English" boxwood already flourishing. Two urns in the original print remain in the garden, though relocated. Other pictures reveal a park-like garden. Many of the trees have reached their life expectancy and the boxwood has become overgrown, as have the paths. The boxwood is being trimmed and reshaped, new urns have been added and overgrown woods are being thinned and planted with woodland material.

Evergreen azaleas and rhododendrons, daphne 'Carol Mackie' and bulbs bring color to the spring season.

**Frederick County**, the site of the Pilgrimage tour for Saturday May 17 was created in 1748 from Baltimore and Prince George's Counties and named for Frederick Calvert, the sixth and last Lord Baltimore. German and English immigrants were attracted to the region because of the farming and location along major trade routes. The county boasts a distinguished farming tradition and a long lineage of notable citizens and numerous historic landmarks.

Stone Manor in Middletown began as a four-room stone farmhouse and is still a working farm. One of the oldest houses in Frederick County, it represents three different architectural styles from three centuries. Two hand-hewn Greek Revival mantels



*Stone Manor, Middletown, Frederick County, has large boxwoods for foundation planting.*



*Woodmere in Middletown, a Routzahn home since 1883, is flanked by a pair of blue Atlas cedars in the Victorian tradition.*

are probably the most historically significant detail. From the rear terrace one enters the garden, planted for formal beauty, for cutting and as the kitchen's source of herbs and vegetables.

Woodmere, in Middletown, an excellent example of Victorian architecture, has been in the Routzahn

family since it was built in 1883. Splendid trees and boxwood borders adorn the parklike setting. The house contains many of the original furnishings. At the rear of the property is an unusual three-part building, built to accommodate carriages, privy and chickens separately, yet under one roof.

## NOTICES

### Decorators' Show House - A Walk Through Elegance

April 12-May 11, 1997, presented by the Fredericksburg Area Service League, Inc.

History: In 1772, Dr. Hugh Mercer purchased the lot where the Doggett House now stands. In 1820, Carter Littlepage Stevenson purchased part of the original lot for \$500. It is believed the residence was built around 1826. In 1888, Dr. Doggett purchased the estate. His daughter Kate Doggett Boggs had the wall surrounding the property constructed of bricks salvaged from the area.

This event will showcase some of the area's finest interior designers, decorators and landscapers. Advance sale tickets (\$10) are available by sending a check made payable to FASL Decorators' Show House and a self-addressed stamped envelope to Decorators' Show House, Attn: Tickets, 525B Jefferson Davis Hwy., Suite 190, Fredericksburg, VA 22401.

After April 11, tickets will be \$12 except on Garden Tour Day (April 22) when you can receive a \$2 discount by presenting a Garden Week Ticket.

Show House hours are Monday, Wednesday, Thursday and Friday 1-2, Thursday evenings 5-7, Saturday 1-4 and Sunday 1-5. The Show House will be closed on Tuesday except for Garden Day April 22. For informa-

tion about special events, call the Show House Hotline (540) 371-4920 or visit the Web site, <http://www.erols.com/slarimer/fasl>.

The organization's purpose is educational and charitable and the current project, which will benefit from the Show House proceeds, is to provide a new safe playground in one of the city's oldest and best used parks.

### 60th Anniversary Maryland House and Garden Pilgrimage

April 26-May 18, 1997. For information call or write: Maryland House and Garden Pilgrimage, 1105-

A Providence Rd, Towson, MD 21286-1790. Phone (410) 821-6933, FAX (410) 821-7620. (See p. 69.)

### Historic Garden Week in Virginia

April 19-26, 1997. For information, contact: The Garden Club of Virginia, 12 E. Franklin St., Richmond, VA 23219, phone (804) 644-7776. (See p. 67.)

### Eighth Annual Garden Fair at Blandy

Saturday, May 10, and Sunday, May 11, 1997.



*The boxwood parterre at the Doggett House is being renovated in preparation for the Decorators' Show House April 12-May 11, 1997.*

## CORRESPONDENCE

### Buxus 'Green Velvet' In Gold Medal Chelsea Flower Show Garden

One of the most admired gardens created for last year's Chelsea Flower Show in England brought the hybrid B. 'Green Velvet' into prominence.

Designer Fiona Laurenson, a true plantswoman and presenter of Murdoch's B-Sky-B Television's Saturday gardening programme,

knows exactly how to display the qualities and characteristics of plants.

The theme of her garden was a New England Cottage Garden,

imagined to be in an area around Rhode Island. The box bushes were used to great effect, loosely bordering the patterned old brickwork central path leading up to the stepped porch of the genuine New England timber house, which has been imported as a plat-pack.

The house was assembled on the site area of 8½ x 9½ m, and artist John Simpson skillfully aged and antiqued the cedar roof shakes, the porch and paint work, even down to rust marks on the white picket fence surrounding the garden.

The garden plan was simple: a central box-bordered path and plant-packed square beds on each side of the path. In essence such a cottage garden evolves full of spontaneity and whimsy, for enjoyment and use. The

beds were a mix of perennials, annuals, shrubs and roses, clematis, peonies, iris, lilac and lilies. The lovely soft blend of the skillfully planted mixture of favorites gave an amazingly natural “been-there-for-



*Fiona Laurenson.*

years” look. There were blueberry bushes in fruit tucked in one corner, a sheltered garden seat, an old wash tub and copper cider press by the porch, a loose tsuga hedge down one side.

Among the other highly sophisticated and varied show gardens, many of which are heavily sponsored by major corporations for the massive publicity the show engenders during its five-day duration, Fiona’s garden, with all its charm, was much admired by all who could get near it, and the Gold Medal was well deserved. It is pleasing to see the greater use of box in its informal, self-shaping state by our leading young designers now, in addition to our passion for topiary, clipped hedging and knot gardens.

*-Elizabeth Braimbridge*



*New England cottage garden by Fiona Laurenson being set up for the 1996 Chelsea Show. Buxus ‘Green Velvet’ borders the center path. (Photos: Elizabeth Braimbridge)*

## Durable *B. sempervirens* 'Elegantissima'

Elizabeth Braimbridge sent this quote from "Dossier on Drought" by P. R. Collison in the newsletter of the Cottage Garden Society, *The Cottage Gardener*, of March 1996.

"Shrubs that really enjoyed the conditions were for the most part those one would expect to: ceratostigma, caryopteris, phlomis, *Teucrium fruticans* senecio and the like. *Abelia* 'Francis Mason' and *A. grandiflora* deserve top marks, too; they never flagged at all and needed no watering. But my greatest admiration goes to the small-leaved, cream variegated *Buxus sempervirens* 'Elegantissima', of which we have several grown from cuttings (circa 1976).

One of these, the smallest, was planted on the southwest side of the summer house, in a 6" wide strip of the worst, hardest, stoniest soil you can imagine and with a paved path at the other side. I had to break up the soil with a large, very old screwdriver to make a planting hole, and the box cutting was consigned to this grave with a dusting of bone meal, a handful of compost and my sincere apologies!

It is still not only alive but thriving (though only about 2' 6" tall), and densely leafy and well coloured, the picture of good health. Every time I pass I stroke it, congratulate it and tell it I love it! ...it has to be the toughest, most drought-proof plant in this garden!"

Note:

*This certainly confirms that the British have a way with plants. We wouldn't dare treat Buxus sempervirens 'Elegantissima' like that!*

-D. Frackelton

## NEWS OF THE SOCIETY

### Winter Meeting Minutes

The winter meeting of the ABS Governing Board was held on Wednesday, January 29, 1997, at 1 p.m. in Charlottesville, Virginia. The meeting was called to order by President Stephen Southall; also attending were Vice President Tom Saunders, Treasurer Mrs. Katherine Ward, Secretary Mrs. Joan Butler, Registrar Lynn Batdorf and Directors John Boyd III, Charles Fooks, Mrs. Robert Frackelton, Dr. Henry Frierson, Mrs. Sigrid Harriman, Steve Zapton, and Dr. Edward F. Connor, Director Ex-Officio.

The minutes of the fall Board meeting on September 19, 1996 were approved as published in *The Boxwood Bulletin*, Vol.36, No.2, p.36.

The Treasurer reported balances of \$23,491.11 in the checking account and \$14,244.20 in a certificate of deposit. Mrs. Ward also presented an account of income and expenses from publishing the *Boxwood Handbook* and a listing of copies remaining totaling 760. She also distributed reports on expenses for the ABS Memorial Garden at the State Arboretum and on the escrowed allotments for the Special Funds.

Mr. Batdorf will prepare a second edition of the *Handbook* to be published later this year. It was moved, seconded and passed unanimously that ABS publish 4,000 copies of the next edition, using the same St. Louis printer. The European Boxwood and Topiary Society (Dr. Mark Braimbridge, Chairman) has asked permission to reprint articles from *The Boxwood Bulletin*; articles from their newsletter will be shared with ABS. Limited permission will be given. Mr. Batdorf reported that one piece on leafminer research has been submitted and one or two more will follow.

Mrs. Butler noted that a corre-

spondent had found the address of ABS on the Internet; discussion followed on creating a home page for the Society; Dr. Frierson will explore the idea as a way to offer our membership application and other information to searchers. The possibility of an e-mail address for the Treasurer will be considered.

Mrs. Frackelton issued an urgent appeal for contributions to *The Boxwood Bulletin*; Board members are expected to provide at least one article each year. The next deadline is February 15, 1997, since the April issue must appear early to announce the Annual Meeting.

Mr. Zapton, Nominating Committee Chair, noted that the terms of Mrs. Frackelton and Dr. Frierson will expire in May 1997 and received their assurances that they are willing to serve another three-year term.

Mrs. Butler reported that the research project on cultivar evaluation continues at the Chicago Botanic Garden; Mrs. Harriman has purchased plants of their introduction, *Buxus* 'Glencoe', which will be added to the ABS Memorial Garden. Mrs. Butler also noted that many boxwoods were moved to their permanent locations during the fall of 1996. Metal edging has been installed around the beds and the Garden is becoming very attractive. White-flowering trees and low shrubs have been added to create variety and fragrance. She also plans to write a brief history of the Garden to explain its significance as a memorial to early ABS leaders Dr. J. T. Baldwin, Jr., and Henry J. Hohman.

Mrs. Butler reviewed plans for the Annual Meeting on May 16 and 17, 1997, centered at Blandy Farm's Orland E. White Arboretum near Boyce, Virginia.

The meeting adjourned at 4 p.m.

Joan Butler, Secretary

## New Members for 1996-1997

Martha L.	Adams	Falmouth	MA	James	Knox	Raleigh	NC
Mr. Cary N.	Ahl	Lancaster	PA.	Brooklyn Botanic	Garden Library	Brooklyn	NY
Jerry Aldridge	Aldridge Nursery			Lou-Anne	Maniscalio	Rappahannock	VA
		Pinola	NC	Dr. L. B.	Mason	Wilmington	NC
Mr. Len	Angle	Douglasville	GA	M/M John	McDougall	Montpelier	VA
Scott D. Appell	The Green Man, Inc			Joseph	McGinnis & family		
		NY City	NY			Ottsville	PA
M/M Chance Shaw	Arensberg	Louisville	KY	Robert	Miser, Jr.	Annapolis	MD
Dr. I. V. or Ann	Behm	Hampton	VA	Marshall L.	Norton	Richmond	VA
N/N John Wade	Bell, III	Lewisburg	WV	Ms. Beatrice Ost	Mr. Ludwig Kuttner		
G. P.	Bruce	Richmond	VA			Keene	VA
Mrs. William R.	Buster	Midway	KY	Mary	Parell	Princeton	NJ
Jerry Norris	Camden Gardens			Samuel R.	Pattison	Bayonne	NJ
		Seattle	WA	Mark W.	Paul	Newport	KY
Evelyn	Cheatham	Lancaster	VA	Floyd R.	Porahan	Avon	OH
William	Christie	Paris	France	Robert Fawcett	Project Hope	Millwood	VA
Edward	Clark	Macon	GA	M/M	Quinby	Farmington	CT
Andy	Conlon	Leesburg	VA	Mrs. T. S.	Quinn, Jr.	Cornwall	PA
Roger G.	Cook	Hightstown	NJ	Susan Showalter	Rae	Casanova	VA
Dr./Mrs. C. Bernard	Cross	Waterford	VA	Mr. Timothy W.	Robertson	Glen Allen	VA
Mrs. William S.	Cummings	Bethlehem	PA	Larens	Satoris	Richmond	VA
Jerry B.	Dalton	Germantown	ON	Janet "Rosie"	Sauser, Cultiv. Garden		
Claiborne M.	Dickinson	Machipongo	VA			Washington	DC
Margaret M.	Donne	Olympia Fields	IL	Manse	Schader	Tillicum	WA
Katherine M.	Elder	Alexandria	VA	Avi	Shaki	Deep Gap	NC
Mr. Bryn	Eldridge	Unionville	PA	Ms. Joel H.	Shaper	Baltimore	MD
Lynne Ellis, Mgr.	Waverly Farms	Lutherville	MD	Charlotte J.	Shelton	North Garden	VA
Mr. William	Elwood	Charlottesville	VA	Janie Baugh	Singletary, GardnHaven		
Kornel	Esveld	Zwartewaam	Holland			Greenville	SC
John A	Fraser	Newburg	MD	Al	Smith	Denton	MD
Christine Kurtz	Fuerhoff	St. Charles	MO	Mr. Paul L.	Stewart	Baltimore	MD
Thomas Gaipa	Pepsi Cola Co.	Somers	NY	Mr. Thomas J.	Tatterson	Martinsburg	WV
Mr. John W.	Garrett, III	Reidsville	NC	M. Hugh P.	Taylor	White Pine	TN
Lewis	Gaskin	Laurel Springs	NC	Mrs. Addison B.	Thompson	Richmond	VA
Mac	Griswold	Sag Harbor	NY	Mrs. James A	Tignor	Greensboro	MD
Jack M.	Gwaltney, Jr.	Free Union	VA	M/M James E.	Treacle, Jr	Charlottesville	VA
Maury	Hanson, M.D.	Madison	VA	Grady	Vass	Galax	VA
Hawksridge	Farms	Hickory	NC	Perry	Vining	Deer River	MN
Mrs. Jay French	Hill	Little Rock	AR	Mary Ann	Von Handorf	Middleton	RI
J. C. Estes	Nursery	Newland	NC	Catherine B.	Ward	Hampton	VA
Paul D.	Jones	Ripon	CA	John F.	Wilson, Jr.	Harwood	MD
John A. Karel,	Dir. Tower Grove Park			Mr. Stephen M.	Wolf	Middleburg	VA
		St. Louis	MO	Aubrey	Zaffuto	Far Hills	NJ
Richard F.	Kimnel	New Nope	PA				

### Seasonal Gardener, continued...

tible to bark splitting than other boxwoods in late winter, as this cultivar breaks dormancy earlier than others.

With proper pruning and cultural practices the plants will recover and may serve as an adequate substitute for *Buxus sempervirens* 'Suffruticosa' as a boxwood hedge. (See photo.)

Henry F. Frierson, Jr.



# The Seasonal Gardener

Practical tips for boxwood enthusiasts from Society members



## ***Buxus microphylla* var. *japonica* 'Green Beauty': Winter Damage and Recovery**

In a 1989 issue of *The Boxwood Bulletin* (Vol.29, No.2, page 23) Banko and Stefani reported the finding of cold injury to stems of Japanese boxwood in their research planting at the Hampton Roads Agricultural Experiment Station in Virginia Beach, Virginia. They noticed in the summer of 1988 that stems below yellow foliage of some plants were girdled and that the adjacent bark had produced callus tissue, imparting a swollen appearance to the stems. In this report, similar winter damage to *Buxus microphylla* var. *japonica* 'Green Beauty' is described.

In March 1992, 16 Japanese boxwood plants were installed to begin a hedge planting on the northern side of a city lot in Charlottesville, Virginia. After some study of appropriate cultivars, it had been determined that 'Green Beauty' would be an attractive alternative to *Buxus sempervirens* 'Suffruticosa'. The plants, which were more than 10 years of age, had originally been grown in a nursery in New Jersey, but over the last several years had been growing in a field of a nursery near the Skyline Drive in Warren County, Virginia.

On March 13, 1993 a severe storm dumped approximately a foot of snow in the Charlottesville area. This was followed immediately by clearing and severe cold temperatures for several days. Numerous splits in the bark of stems of the majority of the plants were soon noted. No attempt had been made to clear away snow from the plants, and therefore only the top 6-12 inches had been exposed to the extreme cold. The bottoms of the plants were insulated with snow, while the tops, quite pregnant with new leaf buds, suffered exposure to the cold temperatures. The vertical splits in the bark of stems ranged from a few millimeters long to approximately 2 cm. Some of the bark had been

completely sloughed away. (See photo.)

Interestingly, two rows of *Buxus* 'Green Gem' plants of similar size that were located nearby sustained virtually no damage. Once the cold weather abated and the



extent of the damage to the 'Green Beauty' plants was determined, stems with the most severe splitting of bark were pruned back to live wood.

Over the next few years the 'Green Beauty' plants became heavily infested with psyllid and became modestly infested with the boxwood leaf miner. After appropriate treatments, these pests have been largely brought under control. Since the winter damage of 1993, the shape of the plants has been maintained by modest pruning to promote their growth as a hedge.

The plants suffered virtually no damage during the severe winter of 1995-96, during which time more than 50 inches of snow fell in the Charlottesville area. Currently they are healthy, show dense growth, and continue to develop toward a full hedge.

Splitting of bark on stems of boxwoods that have begun to produce new secondary vascular tissue under the bark tissue results from a rapid drop in temperature. The lowering of temperature causes freezing and expansion resulting in the splitting of bark and, if severe, separation from the stem.

In central Virginia, *Buxus microphylla* var. *japonica* 'Green Beauty' seems to be more suscep-

...concluded opposite page

