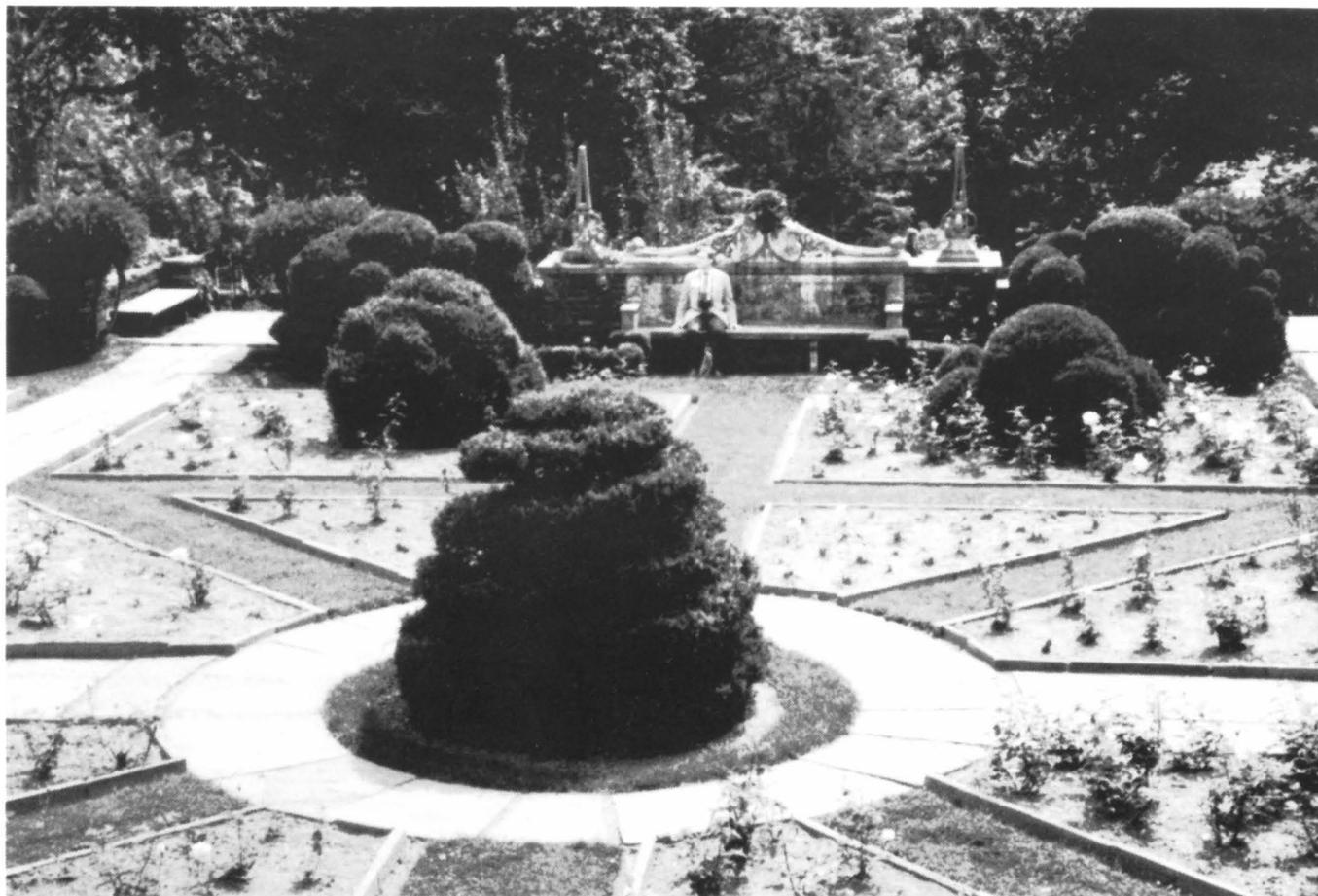


The *Boxwood* Bulletin

A quarterly devoted to Man's oldest garden ornamental



Dumbarton Oaks: The rose garden features mature boxwood, using topiary (center) and "clouding" forms. See story on page 22. (Photo: Mrs. Robert L. Frackelton)

IN THIS ISSUE

Japanese Boxwood Cultivars by Dr. Henry T. Skinner, <i>Lynn R. Batdorf</i>	19
8th Annual Southern Garden History Society Meeting, <i>Decca Frackelton</i>	22
Proposed Redevelopment of ABS Memorial Garden	26
Capillary Irrigation Container Production of Boxwood, <i>Thomas J. Banko and Marcia Stefani</i>	28-29
ISHS Inquiry	30
New Use for Boxwood	31
Research Report	32
ABS Board Meets in Staunton, Virginia	33
Plant Listing for Proposed New ABS Memorial Garden	34-28
<i>The Seasonal Gardener</i>	Inside Back Cover

The American Boxwood Society

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. There are more than 800 members in the United States and nine foreign countries.

Officers:

PRESIDENT:

Mrs. Robert L. Frackelton Fredericksburg, Va.

VICE-PRESIDENTS:

Mr. Dale T. Taylor Wenonah, N.J.
Mrs. Malcolm L. Holekamp Webster Groves, Mo.

SECRETARY:

Mrs. Joan C. Butler Bluemont, Va.

EXECUTIVE TREASURER:

Mrs. Katherine D. Ward Deerfield, Va.

REGISTRAR:

Mr. Lynn R. Batdorf Colesville, Md.

DIRECTORS:

Mr. Lynn R. Batdorf (1993) Colesville, Md.
Mr. John W. Boyd, Jr. (1991) Alton, Va.
Cdr. Phillip D. Larson (1991) Knoxville, Md.
Mr. Richard D. Mahone (1992) Williamsburg, Va.
Dr. Alex X. Niemiera (1993) Blacksburg, Va.
Susanne A. Schrage-Norton (1991) Mt. Vernon, Va.
Mrs. Tyra Sexton (1993) Fredericksburg, Va.
Dr. Stephen D. Southall (1992) Lynchburg, Va.

EX-OFFICIO:

Dr. Edward F. Connor Boyce, Va.

BULLETIN EDITOR:

John S. McCarthy Webster Groves, Mo.

Memberships:

Memberships for the year May through April include \$12 for four quarterly issues of *The Boxwood Bulletin*:

Individual	\$15	Contributing	\$30	Life	\$250
Family	\$20	Sustaining	\$50	Patron	\$500

Non-member subscriptions for groups and institutions, such as botanic gardens and libraries, are \$15 by the calendar year.

Available Publications:

Back issues of <i>The Boxwood Bulletin</i>	\$ 4
<i>Boxwood Buyer's Guide (3rd Edition)</i>	\$ 8
<i>International Registration List of Cultivated Buxus L.</i>	\$ 3
<i>Index to The Boxwood Bulletin 1961-1986</i>	\$10

Contributions:

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

Boxwood Handbook Fund
Boxwood Memorial Garden Fund
Boxwood Monograph Fund
Boxwood Research Fund

Correspondence:

For address changes, memberships, dues, contributions, or to order back issues or publications, write:

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

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:

Mrs. Robert L. Frackelton
1714 Greenway Drive
Fredericksburg, Va. 22401

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*. Photographs should be suitable for reproduction and fully captioned. Suggestions regarding format and content are welcome. Material should be submitted to:

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

Material to be returned to the sender must be submitted with a self-addressed envelope carrying suitable postage. Every effort will be made to protect submittals, but the Society cannot be responsible for loss or injury.

The Boxwood Bulletin (ISSN 0006 8535) is published quarterly for \$12.00 per year by The American Boxwood Society, Blandy Experimental Farm, Boyce, Va. 22620. Second class postage paid at Boyce, Va. POSTMASTER: Send address changes to *The Boxwood Bulletin*, P.O. Box 85, Boyce, Va. 22620. The *Bulletin* is printed by M-J Printers, Fredericksburg, Va.

Japanese Boxwood Cultivars by Dr. Henry T. Skinner

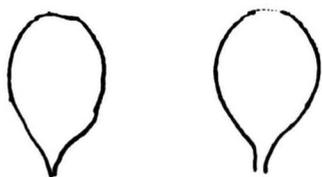
Lynn R. Batdorf

In 1950, while at the Morris Arboretum of the University of Pennsylvania, Dr. Skinner had selected three open-pollinated seedlings of *Buxus microphylla* var. *japonica*. Later these three plants became known as 'Morris Dwarf', 'Morris Midget' and 'National'. Forty years later, these three plants have withstood critical evaluations and have proved to be outstanding selections. To understand the characteristics that these plants possess, one needs to first understand the parent plant.

Buxus microphylla var. *japonica*

The species was introduced to western cultivation about 1890. It grows naturally on the mountains of Honshu, Shikoku and Kyushu in Japan where its occurrence is local and comparatively rare. It has long been in cultivation by the Japanese, especially around their hilltop shrines.

Japanese boxwood grow as an erect, loose-habited shrub 2.4 to 3 m in height and 3.6 to 5.5 m in width, often with a single main trunk. The leaves are glossy ovate, oblong-lanceolate to ovate-rotundate 6 to 10 mm wide and 10 to 20 mm long. The apex is slightly



emarginate and the base is cuneate. Venation is strictly pinnate. [Leaf forms shown are actual size.] The peduncle is 1 mm in length and glabrous. Fruit is globose-ovoid 10 mm high with horns 3 mm long. The plant has a characteristic 4-sided stem (box shaped) on wood younger than four years.

In North America it has adapted to a wide climatic range, growing from New England to Central Florida and Southern California. Few boxwoods enjoy

such wide distribution over so many temperature zones. It is the hardiest of all boxwood with the exception of *B. sinica* var. *insularis* and a few cultivars of *B. sempervirens*. It has been known to successfully survive temperatures to -20 F. Typically in late fall and early spring the older foliage will bronze, then quickly green up in spring.

The Japanese boxwood is a prolific seed producer, often producing numer-

version of the Japanese boxwood which shows prospect of attaining a height of 3-4 feet in twenty years. Compared with the companion seedling, 'Morris Midget', the leaves of this clone, averaging 1/2" long by 3/16" wide, are slightly narrower and are possessed of a



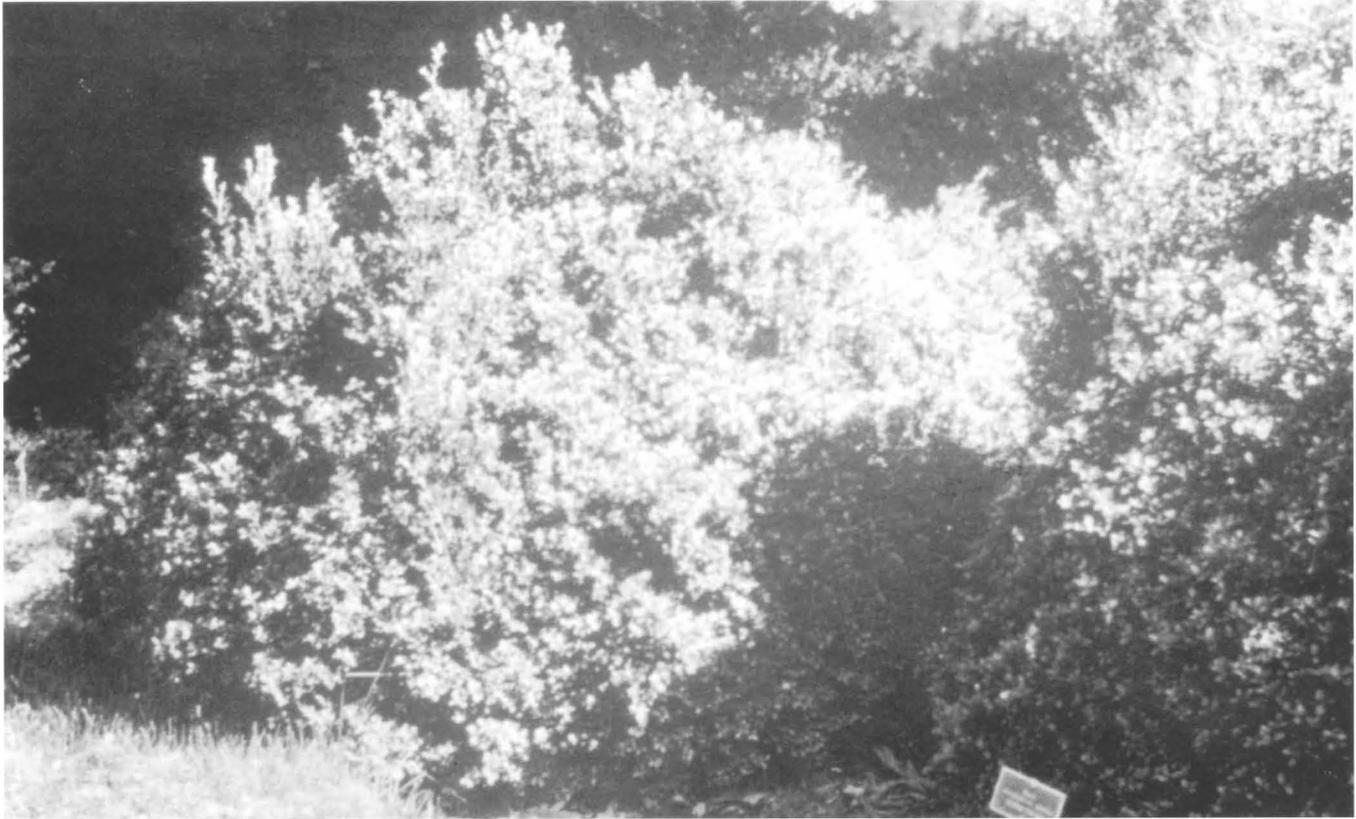
Buxus microphylla var. *japonica* received as cuttings from the Morris Arboretum. Plant was originally from Hillier Nursery. Plant has a spread of 4.8 m and a height of 2.2 m at 36 years of age. (Photos: Lynn Batdorf)

ous open pollinated seedlings. Dr. Skinner noted subtle, yet important, variations in some of these seedlings at Morris Arboretum. These seedlings were raised in 1947 and after three years of careful evaluations, several selections were made. They are:

Buxus microphylla var. *japonica* (Muell. Arg.) Rehd. and Wils. 'Morris Dwarf'

Registration was accepted by Dr. Wagenknecht in *The Boxwood Bulletin* 11(3):45.1972, with this description of the plant: "A miniature, slow-growing

less pronounced terminal notch. Clustering of the 2-3" shoots results in an irregular or 'tufted' bush outline. One in a hundred or so will show an occasional bad reversion to normally vigorous *B. microphylla* var. *japonica*. Serves as an interesting substitute for English Dwarf Boxwood. This clone was selected by Dr. Henry T. Skinner at Morris Arboretum, Philadelphia, PA., in 1950, from open pollinated seedlings of *B. microphylla* var. *japonica*. It was named at the U. S. National Arboretum (USNA). Rated as hardy in USDA Zone 6." The plant was originally



Buxus microphylla var. *japonica* 'Morris Dwarf' received as cuttings August 1954 from the Morris Arboretum. Plant is currently 0.8 m tall and 1.65 m wide at 36 years of age.



Buxus microphylla var. *japonica* 'Morris Midget' also received as cuttings in August 1954 from the Morris Arboretum. This plant is now 0.55 m tall and 1.33 m wide at 36 years of age.

named *Buxus microphylla* var. *japonica* 'Morris Medium Dwarf' and was later changed to 'Morris Dwarf' by Dr. Skinner.

Trying to predict the size and shape of a mature plant is difficult when working with young seedlings. Nevertheless, Dr. Skinner's description is remarkably close to a 42-year old plant. A 'Morris Dwarf' was evaluated at the USNA in 1989 by Lynn Batdorf. The plant was described as 0.8 m tall and 1.65 m wide. It has a neat, compact, mounding habit. Leaves are elliptic with obtuse to retuse tips. The leaves are 7-11 mm wide and 11-18 mm long. New growth is 2-4.5 cm in length with 10 to 16 leaves. Noticeable mite and leaf miner infestations. Both plants tend to send up some reversion. It can be seen that the plant varies only slightly from Dr. Skinner's original description.

The plant enjoys a broad distribution. The third edition of the *Boxwood Buyer's Guide* has twelve nurseries that list 'Morris Dwarf'. Mature plants can be seen at the Morris Arboretum, Arnold Arboretum, USNA and Blandy Experimental Farm.

Buxus microphylla* var. *japonica (Muell. Arg.) Rehd. and Wils. 'Morris Midget'

'Morris Midget' was registered at the same time as 'Morris Dwarf'. The original description of 'Morris Midget' was; "A miniature form of the Japanese boxwood which is somewhat slower growing and more smoothly regular in outline than *B. microphylla* var. *japonica* 'Morris Dwarf'. Annual growth averages 1 to 1 1/2" and the leaves are slightly wider (to 1/4" wide) and more round in appearance. They tend to be more conspicuously notched



at the apex. Expected height is 2-3' in 20 years. This clone displayed no tendency to bud reversion. 'Morris Midget' takes on a yellowish cast a little earlier in the winter than 'Morris



Buxus microphylla var. *japonica* 'National' received as cuttings August 1954 from Morris Arboretum. A rapid grower, the plant is now 4.8 m tall and 4.6 m wide at 36 years of age. Three plants are shown in this photograph.

Dwarf'. Both forms revert to a good green with warmer weather."

Dr. Skinner also commented that 'Morris Midget' is hardy to USDA Zone 6. He originally named this plant *Buxus microphylla* var. *japonica* 'Morris Dwarf' and then later changed it to 'Morris Midget'.

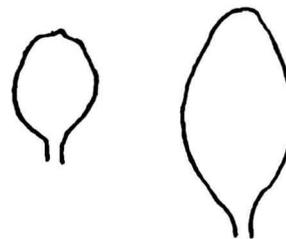
This 36-year old plant was evaluated in 1989 with the following comments: "The plant is 0.55 m tall and 1.3 m wide. The leaves are elliptic with retuse tips, leaves are 6-8 mm wide and 9-14 mm long. New growth is 0.5 to 2 cm with 8-10 leaves. The mites are less of a problem than on the 'Morris Dwarf', possibly this can be explained because the 'Morris Midget' plant receives more shade."

The *Boxwood Buyer's Guide* lists 14 sources for the plant. Mature plants are located at Arnold Arboretum and the USNA.

Buxus microphylla* var. *japonica (Muell. Arg.) Rehd. and Wils. 'National'

Registered by Douglas Anberg, while Curator of the Boxwood Collection at the USNA, in *The Boxwood Bulletin* 12(4):62.1973. The registration stated, "A fast-growing plant of

upright growth habit attaining a height of 7'6" and a width of 5'6" in 18 years, with stout branches ascending stiffly to the tips; the terminal branches 12-15 cm long. Leaves somewhat glossy, deep green, flat, becoming salmon colored on the underside in winter.



'National' was selected by Dr. Henry T. Skinner at the Morris Arboretum in 1951 from the same group of open pollinated seedlings from which *B. microphylla* var. *japonica* 'Morris Dwarf' and 'Morris Midget' derive. It was named at the USNA."

Observations of 'National' made in 1989 recorded that a 35-year old plant is 4.8 m tall and 4.6 m wide. The leaves are 24 to 30 mm long and 13 to 16 mm wide. They are broadly cuneate at the base, the tip is obtuse. New growth is 7 to 13 cm in length having 10 to 16 leaves.

This plant, was selected one year

after 'Morris Dwarf' and 'Morris Midget'. 'National' was originally named 'Morris Fastigiata' by Dr. Skinner at Morris Arboretum. When he came to the USNA he brought plants of his three introductions along with him. After making observations of the mature plant, he determined that 'Morris Fastigiata' was, unfortunately, not a fastigiata plant. Since he was then at the National Arboretum, he renamed the plant 'National'. There were other name changes as 'Morris Dwarf' was originally named 'Morris Medium Dwarf' and 'Morris Midget' was originally named 'Morris Dwarf'. Unfortunately, the renaming of somewhat similar plants with similar names has created some confusion in the past.



Lynn R. Batdorf is Curator of the Boxwood Collection at the USNA and International Registration Authority for Cultivated Buxus L.

At left, three Buxus microphylla var. japonica 'Morris Midget' (age 29); at right, three Buxus microphylla var. japonica 'Morris Dwarf' (age 29); and center, one Buxus microphylla 'Compacta' (age 27) at ABS Memorial Garden (Photo: Mrs. Robert L. Frackelton)

8th Annual Southern Garden History Society Meeting

Boxwood Prominent in Tour

Decca Frackelton

The Southern Garden History Society (SGHS) headquartered in Alexandria, Virginia, for its Annual Meeting. In their largest gathering to date, the 139 members represented thirteen southern states and members from New Jersey, Delaware and Connecticut.

J. Dean Norton, horticulturist at Mount Vernon, planned a memorable three days of lectures and visits to houses and gardens. Boxwood was to be found in abundance.

George Mason's Gunston Hall was the first to be visited. Donald Taylor, the Director, had given a slide presentation on the restoration of the house and grounds to introduce the group to Gunston Hall.

In 1950 when the Garden Club of



Gunston Hall: Boxwood parterre on the west side of the allée or stem of the "T," looking toward the river. (Photos: Mrs. Robert L. Frackelton)

Virginia obtained the services of Alden Hopkins of Colonial Williamsburg to draw plans for the restoration of the gardens on the river side of the house, there was one feature from the Mason days that had been preserved. This was the "T" of boxwood. The crosstop of the "T" paralleled the river side of the house and the stem was the allée extending from the central axis of the house. Four parterres are accessed from a break midway in the stem. (For further details see *Historic Virginia Gardens* by Dorothy Hunt Williams.)

Arriving at Mount Vernon by boat was an event long anticipated. Morning lectures took place in the building named in honor of Ann Pamela Cunningham who, in 1853, began the movement to save Mount Vernon.

We next journeyed to Woodlawn, home of Lawrence Lewis and his wife, Nellie Custis, nephew and step-granddaughter of George Washington, respectively. This property, a part of the Mount Vernon estate, had been given to the couple by George Washington.

After lunch, served on the grounds, we toured the house and gardens. There were boxwoods to admire as well as the collection of old roses. (See photo, page 24.) Returning to Mount Vernon, we enjoyed a lecture by C. Allen Brown in which he speculated on the possible Masonic influence on George Washington's garden designs at Mount Vernon.

After the gates had been closed to visitors we had a private tour of the grounds, carriage rides along the serpentine avenue, refreshments and 18th century music from the piazzas, overlooking the river, and leisurely tours of the house. One could almost expect to see George Washington appear!

The optional tour day featured Dumbarton Oaks, lunch at the Anderson House, and the gardens at Tudor Place and Evermay.

Beatrix Farrand designed the magnificent gardens at Dumbarton Oaks for Mr. and Mrs. Robert Woods



Gunston Hall: A portion of the crosstop of the "T," planted in Buxus sempervirens 'Suffruticosa', a feature from the Mason days.



Mt. Vernon: Weeping Boxwood. The original plant came to George Washington from the Lees of Stratford Hall and was in the center of this clump. These offspring layered and rooted from the original.



Woodlawn: Buxus sempervirens 'Suffruticosa' grows in the entrance circle.



Mt. Vernon: J. Dean Norton, with a backdrop of boxwood, explains the vegetable garden.



Tudor Place: A lower garden "room" walled with boxwood, a restful green setting.



Dumbarton Oaks: Another section of the rose garden, with Buxus sempervirens "clouded" along the wall and Buxus sempervirens 'Suffruticosa' at the corners of the beds

Bliss who left the property to Harvard University. It is beautifully maintained by a dozen groundskeepers under the supervision of Don Smith. One stroll through the garden rooms was not enough to absorb all there is to see. One would have to return again and again.

Tudor Place, circa 1805, belonged to the Peter family. The knot-garden plan that resurfaced was from references to Avenel where James Bradshaw Beverly and his wife Jane Peter made copies of a knot-garden from Blandfield and from Tudor Place, their former homes.

Evermay, the private residence of Mrs. Peter Berlin, was our oasis at the end of a day filled with enough horticultural treats to last us beyond the next meeting. J. Dean Norton and all who helped deserve all the plaudits they received and more.

Mrs. Frackelton, President of the ABS finds history and boxwood absorbing subjects. Anyone with a deep interest in the history of the plants and gardens of the South may write for further information to SGHS, Old Salem, Inc., Drawer F, Salem Station, Winston-Salem, NC 27108



Tudor Place: The knot-flower garden was reconstructed in its early 19th century design when the plans resurfaced. Massive boxwood in the background are in the driveway circle and probably were once a maze or parterre design.



Evermay, in Georgetown: An oasis in an urban setting, featuring a hedge of Buxus sempervirens 'Suffruticosa'.

Proposed Redevelopment of ABS Memorial Garden is Featured in New Master Plan for Orland E. White Arboretum

At right is a proposed site plan for the American Boxwood Society Memorial Garden as presented to the Board of the ABS on September 21, 1990.

The plans were drawn by graduate student Elizabeth Sargent and funded by The American Boxwood Society. They are intended to be a part of the Master Plan for the Orland E. White Arboretum, designated as the State Arboretum of Virginia, which is located within the confines of the Blandy Experimental Farm of the University of Virginia, Clarke County, Virginia. (See *The Boxwood Bulletin*, July 1990, p. 10,12.)

The first step in carrying out the Master Plan will be the relocation of the entrance drive from Route 50. This has been funded and is expected to be carried out in the spring of 1991. The Friends of the State Arboretum (formerly the Friends of Blandy) are raising funds to establish an amphitheater in the depression where a large portion of the ABS Memorial Garden collection is now located. This will necessitate moving many boxwoods. The Friends hope to begin in 1992.

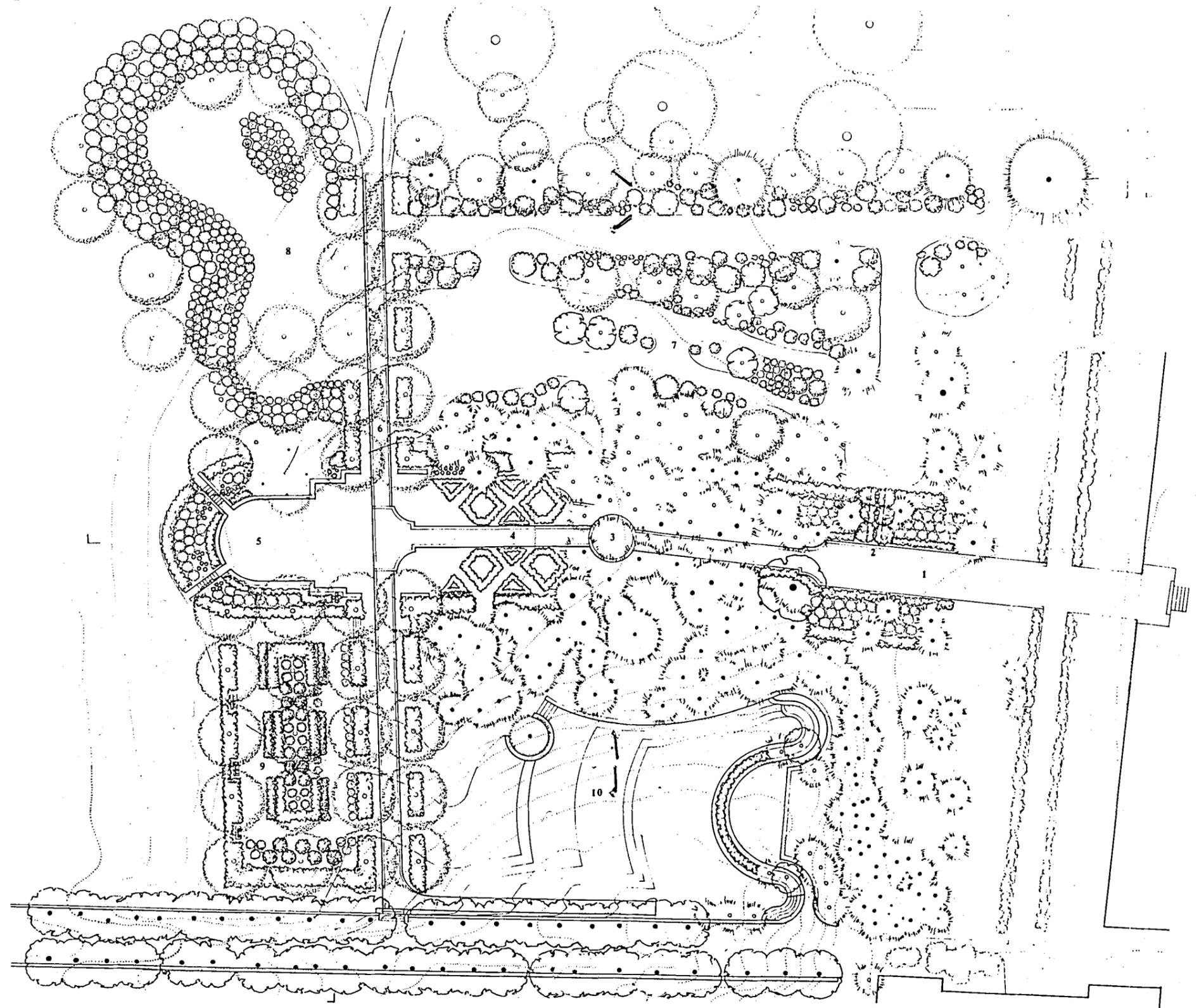
Key to the plan drawing:

1 Main Entrance. A plaza lining the existing central walkway of the arboretum and the future proposed Visitors Center provides a gathering place for garden tours and a well-marked entry into the Boxwood Memorial Garden.

2 Entrance to the Cultivar Display Garden. Two arboreal boxwoods frame an arched entry way and view into the cultivar specimen collection.

3 Arborvitae Grove. The central path leads through an existing grove of densely-planted Arborvitae cultivars, providing a dark and shaded approach into the Boxwood Garden.

4 Summer Garden. Selected



dwarf boxwood cultivars edge beds of white, summer-flowering perennials.

5 Overlook and Reception Area. Located at the high point of the garden, the reception area provides an open place for social gatherings. A stone seat wall, selected boxwood cultivars and summer-flowering shrubs edge the area which looks over the future site of the Arboretum's Pinetum. The cultivar *Buxus sempervirens* 'Graham Blandy' will be prominently featured here.

6 Yellowwood Allée and Paved Walkway. The smooth gray bark and bright green leaves of the yellowwood tree are featured along this walkway connecting the upper and lower areas of the garden. A selected cultivar of boxwood edges the path and defines entry points into the adjacent garden rooms.

7 Boxwood Specimen Collection. At least one specimen of each cultivar will be on display here in its natural form up to the age of 25 years. Cultivars of each species and variety are grouped together for easy comparison.

8 Boxwood Drift Garden. Linear drifts of selected boxwood cultivars offset one another to create a flowing mass of subtle colors and textures.

9 Bosque Garden. Color and form of selected boxwood cultivars are accented here to suggest the range of design ideas possible with boxwood. This shaded room will also contain white flowering deciduous shrubs for interesting seasonal displays.

10 Garden Theater. Integral to plans for the boxwood garden, this amphitheater provides a garden setting for performances at the Arboretum. Selected boxwood cultivars along with other plants will enframe and structure the stage terrace.

[A listing of plants to be included in the final plan for the ABS Memorial Garden is given on the next page.]

Plant Listing for the Proposed New ABS Memorial Garden

1	<i>Amelanchier arborea</i> /Shadbush	53	'Heinrich Bruns'	104	'Tall Boy'
2	<i>Astilbe x arendsii</i> /Astilbe	54	'Henry Shaw'	105	'Tide Hill'
3	<i>Buxus harlandii</i>	55	'Hermann von Schrenk'	106	'Winter Beauty'
4	<i>Buxus microphylla</i>	56	'Holland'	107	'Wintergreen'
5	'Compacta'	57	'Hood'		<i>Buxus X</i>
6	'Creepy'	58	'Inglis'	108	'Green Gem'
7	'Grace Phillips'	59	'Ipek'	109	'Green Mound'
8	'Green Pillow'	60	'Joy'	110	'Green Mountain'
9	'Helen Whiting'	61	'JWB-1'	111	'Green Velvet'
10	'Henry Hohman'	62	'Krossi-livonia'	112	<i>Buxus wallichiana</i>
11	'Jim's Spreader'	63	'Latifolia'	113	<i>Chionanthus virginicus</i> /Fringetree
12	'John Baldwin'	64	'Latifolia Macrophylla'	114	<i>Cladrastia lutea</i> /Yellowwood
13	'Kingsville'	65	'Latifolia Maculata'	115	<i>Clethra alnifolia</i> /Summersweet
14	'Liberty'	66	'Latifolia Marginata'	116	<i>Cornus kousa</i> 'Summer Stars'/ Chinese Dogwood
15	'Locket'	67	'Latifolia Nova'		
16	'Miss Jones'	68	'Liberty'	117	<i>Crataegus phaenopyrum</i> /Wash- ington Hawthorn
17	'Sport Compacta No. 1'	69	'Maculata'	118	<i>Fothergilla gardenii</i> /Dwarf Fothergilla
18	'Sport Compacta No. 2'	70	'Marginata'	119	<i>Helleborous niger</i> /Lenten Rose
19	'Sunnyside'	71	'Mary Gamble'	120	<i>Hydrangea quercifolia</i> 'Snow Queen'/Oakleaf Hydrangea
20	'Winter Gem'	72	'Memorial'	121	<i>Malus sargentii</i> /Sargent Crabapple
21	<i>Buxus microphylla</i> var. <i>intermedia</i>	73	'Myosotidifolia'	122	<i>Pachysandra procumbens</i> / Allegheny Spurge
22	<i>Buxus microphylla</i> var. <i>japonica</i>	74	'Myrtifolia'	123	<i>Physostegia virginiana</i> /False Dragonhead
23	'Green Gem'	75	'Natchez'		
24	'JWB-2'	76	'Newport Blue'		
25	'Morris Dwarf'	77	'Nish'		
26	'Morris Midget'	78	'Northern Find'		
27	'Nana Compacta'	79	'Northland'		
28	'National'	80	'Pendula'		
29	<i>Buxus sempervirens</i>	81	'Ponteyi'		
30	' <i>Angustifolia</i> '	82	'Prostrata'		
31	'Arborscens'	83	'Pullman'		
32	'Argenteo-variegata'	84	'Pyramidalis'		
33	'Belleville'	85	'Pyramidalis Hardwickensis'		
34	'Berlin'	86	'Rotundifolia'		
35	'Blauer Heinz'	87	'Salicifolia'		
36	'Bullata'	88	'Salicifolia Elata'		
37	'Butterworth'	89	'Sport'		
38	'Clembrook'	90	'Ste. Genevieve'		
39	'Cliffside'	91	'Tennessee'		
40	'Decussata'	92	'Undulifolia'		
41	'Dee Runk'	93	'Vardar Valley'		
44	'Elegantissima'	94	'Varifolia'		
45	'Fastigiata'	95	'Welleri'		
46	'Flora Place'	96	'West Ridgeway'		
47	'Fortunci'	97	'Woodland'		
48	'Glaucua'	98	'Yorktown'		
49	'Graham Blandy'	99	'Zehlung'		
50	'Handsworthiensis'	100	<i>Buxus sinica</i> var. <i>insularis</i>		
51	'Handsworthii'	101	'Justin Brouwers'		
52	'Hardwickensis'	102	'Nana'		
		103	'Pincushion'		

Capillary Irrigation Container Production of Boxwood

Thomas J. Banko and Marcia Stefani

There is a growing concern these days about water usage, and, specifically, about water conservation. We would like to tell you of our experiences with an alternative watering method, called capillary irrigation. Capillary irrigation is a method of providing water to container-grown plants by capillary water rise from a moist supporting surface through the bottom of the pots. This supporting surface is usually either sand or a fabric matting.

The practicality of this method is at least partially dependent on local climatic factors. Researchers have had success with capillary systems in Massachusetts, Ohio, Virginia and in several European countries, but high temperatures and low humidity doomed their use in north central Oklahoma.

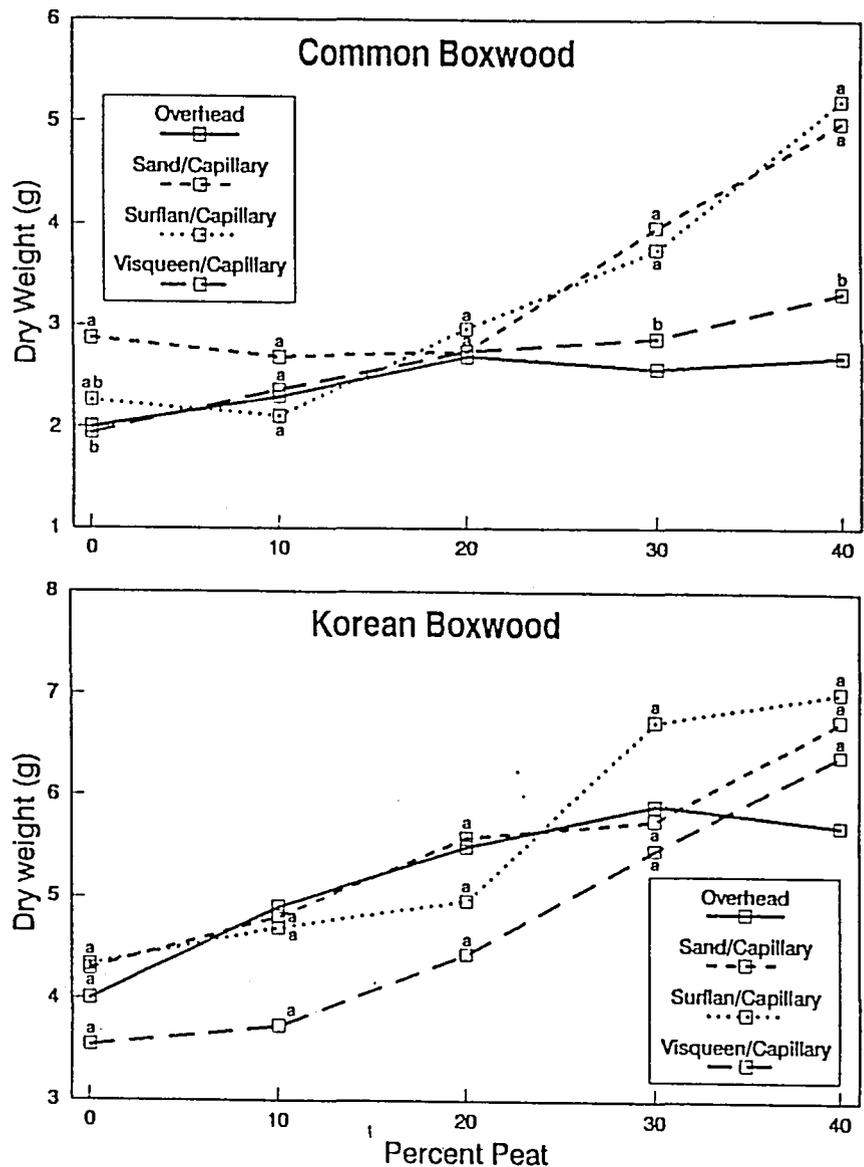
Some advantages of this type of watering system include reduced water consumption (an estimated 40-80% savings in water use), a concurrent savings in expense, reduced water and fertilizer runoff, and elimination of the need for an elaborate overhead watering system. Potential problems include the initial cost of set up, the growth of roots through the bottom of pots into the sand beds, root disease spread, and weed and algae proliferation on the bed surface.

We constructed our capillary beds from frames of pressure-treated lumber, 6 ft. by 50 ft., 3 inches deep. These dimensions worked well, but narrower beds would allow easier access across the bed (without having to step on the bed surface). We constructed two beds side by side about 1 foot apart. If we were to do this again, we would allow more space between beds to permit enough of a walkway for carts, flatbeds, or other container-moving equipment.

The beds were slightly graded with a slope of about 3 inches per 100 ft. to allow water to drain out. Beds were lined with 6 mil polyethylene. Holes

(9/16 in.) to provide drainage were drilled in the polyethylene at 2 foot intervals along the inside of the frame at a height of 1-2 inches from the base. This was to prevent prolonged flooding following heavy rainfall. The poly-lined frames were filled with a fine mortar sand and the sand was leveled to the tops of the frames (Fig.1). Irrigation

water was provided by drip tubing placed on top of the sand bed. The tubing could be buried, but placement on the sand surface allows one to visually inspect the tubing for blockage or leaks without having to dig it up; it also reduces the possibility of sand plugging the openings in the drip tubing. The drip line was connected to



Dry weight of Common and Korean boxwood as affected by percentage of peat in the container, capillary bed surface and irrigation method. Within each level of peat, means with the same letter are not significantly different ($p=0.05$ LSD)

a solenoid, pressure control valve, and a 24-hour electronic timer set to provide two 2-hour irrigation periods per day during the heat of the summer (70 gallons per bed per day). This was sufficient to keep the beds constantly moist, but not flooded.

We compared treatment of the sand surface with a pre-emergent herbicide (Surflan), and covering the sand with a ground cover material (Visqueen) for prevention of weeds and growth of roots into the sand. When we sprayed with Surflan A.S. at 3 lbs. a.i./acre before placing the containers on the sand, weed establishment was reduced early in the growing season, but there was little effect on weed growth or growth of Korean boxwood roots out of the pot and into the sand four months after study initiation.

A second herbicide application later in the season or a higher application rate may have been beneficial. The ground cover material did reduce weed establishment and prevent boxwood roots from growing into the soil. Unfortunately, it also interfered with water uptake into the containers and plant growth was significantly reduced (see chart).

Medium choice is important in establishment of a capillary irrigation system. Other researchers have determined a need for sphagnum peat in the container medium to optimize water absorption. We used a pine bark:peat:sand medium. Our research this past year also investigated the effects on plant growth from increasing percentages of peat in the medium. Peat percentages ranged from 0 to 40% of the volume of the media. For common and Korean boxwoods, we found that a 50:40:10 mix (bark:peat:sand, percentages by volume) was optimal for plant growth. Growth in this medium equalled or exceeded that under overhead irrigation (see chart). Slow release fertilizer was incorporated into the medium equally for all treatments.

Capillary irrigation is a viable alternative to overhead sprinklers for irrigation of container-grown box-



Leveling the sand surface following construction of the capillary beds



Completed capillary irrigation beds with plants in containers

woods. In the pine bark:peat:sand medium that we used, 30 to 40% peat was generally needed to obtain growth comparable to that obtained with the overhead irrigation system. The expense of the additional peat may be justified by the fact that 40% less water was needed with the capillary system compared with an area of equal size covered by overhead sprinklers.

Dr. Banko, who has been doing research at the Hampton Roads Agricultural Experiment Station (VPI&SU) for 11 years, received M.S. and Ph.D. degrees from the University of Idaho. Ms. Stefani, a research scientist, received an M.S. in plant pathology from the University of Georgia and has been at the Experiment Station for six years.

ISHS Inquiry



TELEGRAMS
"HORTENSIA, LONDON, S.W.1."

TELEPHONE
01-434 4111

All communications should be
addressed to "The Secretary"

The Royal Horticultural Society,

P.O. Box 313 *Vincent Square,*

London, SW1P 2PE

June 1990

Dear Registrar

ISHS COMMISSION FOR NOMENCLATURE AND REGISTRATION

The XXIII rd International Horticultural Congress will be held in Florence, Italy between 27 August and 1 September 1990 and I am required to provide a report on the work of all International Registration Authorities for the ISHS Council and the ISHS Commission for Nomenclature and Registration which will be meeting during the Congress.

I would be grateful, therefore, if you could provide me with details of the activities of your International Registration Authority since the last Congress in 1986 so that I can prepare a report to be presented to the ISHS Council and the ISHS Commission at the Congress. In order to co-ordinate the information and prepare the report it is essential that I receive your report not later than 1 August 1990 at the above address. Regrettably if the information is not available by that date I will be unable to include it in my report.

In order to assist you to prepare your report I enclose a proforma which lists the headings for the information required.

- * It would be helpful if you could complete the proforma and return this to me as soon as possible at the above address.

With many thanks.

Yours sincerely

C D Brickell
Chairman
ISHS Commission for Nomenclature and Registration

* Enc

Buxus sempervirens 'Hood' *The Boxwood Bulletin* 26(3):64.1987
International Registration List of Cultivated *Buxus*. *The Boxwood Bulletin* 26(4):76-81.1987.

New cultivars added to Registration List. *The Boxwood Bulletin* 27(4):73.1988.

A critical examination of *Buxus harlandii*. *The Boxwood Bulletin* 28(1):38.1988.

Buxus microphylla 'Herrenhausen' invalidated. *The Boxwood Bulletin* 28(1):9.1988.

Registration of four new cultivars of *Buxus*. (*B. sempervirens* 'Dee Runk', *B. microphylla* 'Sunlight', *B. microphylla* 'John Baldwin', *B. sempervirens* 'Denmark') *The Boxwood Bulletin* 28(2):26-28. 1988.

Checklist of *Buxus* L. *The Boxwood Bulletin* 28(3):43-49.1989.

Registration of *Buxus sempervirens* 'Flora Place'. *The Boxwood Bulletin* 28(4):59.1989.

Buxus sinica var. *insularis* 'Justin Brouwers' registered. *The Boxwood Bulletin* 29(1):3.1989.

Publications under preparation:

Monograph of the genus *Buxus*.
(Current draft is over 220 pages of text.)

Other activities:

Studied species and cultivars in the British Isles for three weeks in 1987. (This was to assist me in the preparation of the *Monograph for Buxus*.) A small article on the trip itself was published, "Prominent Gardens in the British Isles Display Boxwood." *The Boxwood Bulletin* 27(2):38-42.1987.

Lynn R. Batdorf, Registrar

American Boxwood Society
1409 Elm Grove Circle,
Colesville, MD 20904, USA

ABS Response

To: C. D. Brickell, Chairman
ISHS Committee for Nomenclature and Registration
P.O. Box 313, 80 Vincent Square
London SW1P 2PE, UK

International Registration for: Buxus
Registrar: Lynn R. Batdorf

Report of Publications & Activities 1986-1990

Publications:

Buxus sempervirens 'Mary Gamble'
The Boxwood Bulletin 26(2):34.1986
Buxus sempervirens 'Natchez' *The Boxwood Bulletin* 26(3):62.1987

New Use for Boxwood

The usual use of boxwood is for screens, foundation plantings, wind-breaks, outlines of property and gardens. My short story is of an unusual use in Pittsylvania County, located in Southside Virginia.

In the early 1800s Mr. Lewis Gregory owned a saddle and leather shop and his home in Chatham, Va., the county seat. He also owned a farm in Java, Va., located quite a few miles out in the county. The shop prospered, and Mr. Gregory was considered to be quite wealthy.

A friend, needing some money, had Mr. Gregory sign a note for him, and the friend, failing to return the money, caused Mr. Gregory to lose his shop and home. He and his wife were forced to move out to their farm in Java.

While loading the wagons with their possessions, they realized they needed packing material for the china and glassware.

Mary Gregory, a resourceful person, went into the yard and broke pieces of boxwood to use in the barrels with the china and glassware.

It worked well. In spite of a rough wagon trail, not a piece was broken.

After a day's journey to the farm, and another day or two to unpack, Mary took the boxwood cuttings and planted them along the dirt path to the house. Spring rains must have come quickly, since most of the twigs rooted and grew.

The farm, named "Boxwood," is still in the family. The present owners are Mr. and Mrs. James Gregory. James is the great-grandson of Lewis and Mary.

So there you have it—another use of boxwood—packing material.

John W. Boyd, Jr., ABS Director



"Boxwood." Buxus sempervirens 'Suffruticosa' along the walk are from cuttings planted in the early 1800s.



Another stone planter basket. Plantings of Buxus sempervirens are off to the right.



Buxus sempervirens that has been trimmed. Picnic table with a stone slab.



Large Buxus sempervirens at "Boxwood"

Research Report

[It has been noted that the Research Committee Report was inadvertently omitted from the minutes of the spring board meeting as reported in the July 1990 issue of The Boxwood Bulletin. It is herewith submitted with apology to Chairman Gray.]

1. The boxwood field study at Hampton Roads AES (Dr. Tom Banko, 804-363-3900) continues, with investigations of growth regulators, soil fertility, propagation techniques, capillary irrigation, and cultivar evaluation. A new experiment, using a growth regulator to delay new spring growth, shows promise as a means for avoiding late frost damage in some nurseries.

The original test plots are now becoming crowded; transplanting will be done as needed. Serious summer damage to some plants resulted from the wet 1989 season: in the beginning, one group of plants were set out in an area of heavy silt soil with poor

drainage, to encourage root rot for Dr. Lamb's studies at VPI. No root rot ever developed, but many plants suffered water damage in 1989. Replacements will be made. Fortunately, little or no winter damage from the December cold spell has been noted.

We can expect several *Bulletin* articles in 1990. It is recommended that the Society continue its support with a \$500 contribution in 1990. (Passed by the ABS Board.)

2. The boxwood tissue culture proposal from Tom Banko, as submitted at our September 25, 1989, Board meeting, is re-submitted for consideration, as agreed at the Sept. meeting. Dr. Einset, of Harvard, has not responded to Dr. Connor's query.

It is recommended that the Society support this project with a \$500 contribution for 1990, and accept Dr. Banko's proposal as is. It is suggested that we select *B. sempervirens* "Blauer Heinz" for future propagation if feasible. (Passed)

3. For our boxwood cultivar evaluation project, the Chicago Botanic Garden on Nov. 16, 1989, advised that they would propagate the plants in house, if we supplied verified cuttings. On December 11, they advised that their program was reduced to six plants of each cultivar.

After further discussions between Lynn Batdorf and Richard Hawke, Lynn shipped cuttings of nine cultivars on January 31, 1990. With these changes, no Society funding was needed.

It is recommended that:

a. We write Chicago in late May, 1990, inquiring about their propagation success and offering more cuttings in mid-summer, if needed.

b. The Research Committee put this project on hold until we learn from this joint effort with the Chicago Botanic Garden, and consider other potential cooperators at a later date.

William A. Gray, Research Chairman

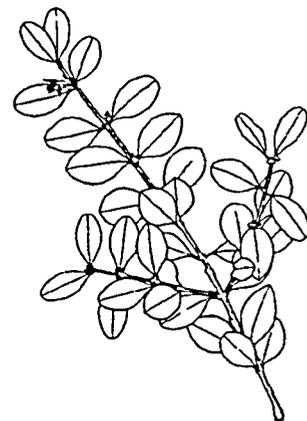
Thanks...

Two ABS Directors retired in May after a long and devoted service to The American Boxwood Society. The Board wishes to extend thanks to James A. Faiszt and William A. Gray.

James A. Faiszt, now a retired VPI&SU professor, served as Chairman of Workshops, arranging programs and speakers in many areas of Virginia and one in Winston-Salem, N.C. He assisted with numerous other workshops.

William A. Gray of Brecknock Nursery, served as Chairman of the Research Committee for nearly ten years and kept on top of the areas of research and looked for new avenues to explore. Under his chairmanship studies were begun on the relation of mycorrhizal fungi to boxwood by

Professor James W. Hendrix of the University of Kentucky, boxwood field studies by Dr. Thomas J. Banko of the Hampton Roads AES continue and have been reported on in various *Bulletins*. As he retired, projects are (1) continuation of field studies [see page 28 for Capillary Irrigation Report], (2) study of tissue culture on boxwood and (3) cultivar evaluation with cuttings supplied to the Chicago Botanical Garden.



IN MEMORIAM

James H. McGhee

ABS Board Meets in Staunton, Virginia, Woodrow Wilson Birthplace



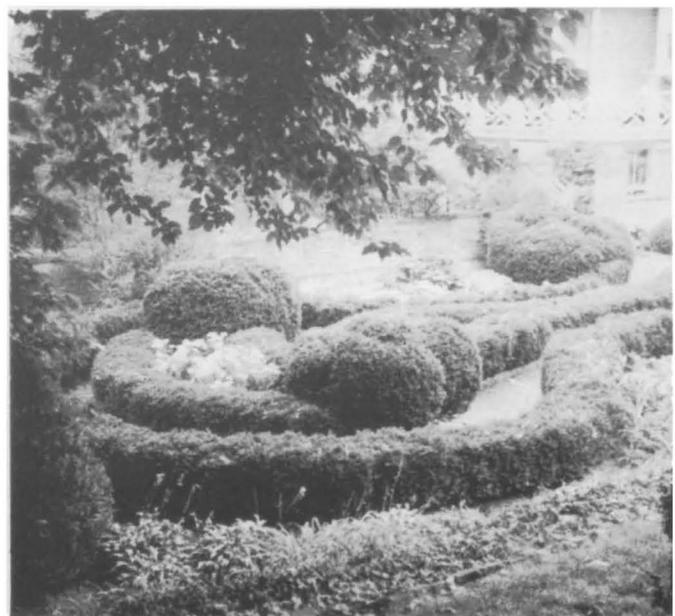
At the Board meeting, Dr. Edward Connor introduces Elizabeth Sargent to present her design plan for the proposed new American Boxwood Society Memorial Garden.



Mrs. Katherine D. Ward, ABS Treasurer, John W. Boyd, Jr., ABS Director, and Dr. Katherine Brown, Executive Director of the Woodrow Wilson Birthplace Foundation, as Mr. Boyd makes suggestions for the care of boxwoods.



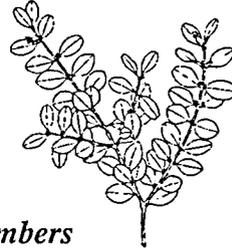
ABS Board members and guests who toured the gardens at the Woodrow Wilson Birthplace. Left to right, Mr. and Mrs. John W. Boyd, Jr., Mr. Lynn R. Batdorf, Mrs. Robert L. Frackelton, Mrs. Tyra Sexton, Mrs. Scot Butler, Mrs. Katherine D. Ward, and Cdr. P. D. Larson.



*A section of the formal garden, edged with *Buxus sempervirens* 'Suffruticosa' at the Woodrow Wilson Birthplace. The Board expressed deep thanks to Mrs. Katherine D. Ward, who arranged the outing to the Birthplace.*

The Seasonal Gardener

Practical tips for boxwood enthusiasts from Society members



Fall and Winter:

Now that fall foliage has returned, boxwoods neglected during the summer will need some attention.

Recovery from Drought. In many areas there has been an extensive summer drought. If the boxwoods were not watered during the summer and if fall rains are inadequate, the foliage may turn a reddish brown, yellowish or grayish color. Or there may be a complete loss of color. On severely suffering plants entire branches may die.

One important way to conserve soil moisture is to use a mulch. If you have not been using a mulch, apply one this fall after you have corrected any deficiency of soil moisture. In addition, mulches control weeds and they help to prevent the soil from becoming hard and compact. Certain mulches provide an attractive ground cover as well. Materials commonly used are wood chips, pinebark, pine needles, straw, leaves and compost.

Apply the mulch to a depth of one inch. First make sure that there is a good supply of moisture in the soil and that the soil is not compacted. Keep in mind that some mulches will tend to cake and shed water. When this occurs, loosen the mulch to allow better water penetration. From time to time mulching material decomposes and it is necessary to add additional material. Do not mound mulch up around the stems or trunks as this will cause aerial rooting.

Fall Planting. Boxwoods planted in the fall need to be well watered. Keep watch to see that the soil

moisture is at the proper level. Plants that are placed in an exposed situation are subject to winter injury. To prevent this kind of damage provide some wind protection by using snow fences, lattice frames covered with burlap, or pine boughs stuck in the ground.

When planting or transplanting boxwood, it is good to do some pruning or thinning in the upper portion of the plant to compensate for the loss of roots that occurs during the digging operation.

Preparing for Winter. If any of your large boxwoods appear to have weak stems that could be severely damaged during heavy snowfalls, wrap the outer branches with a strong nylon cord to protect them. Tie the cord to a low branch, pressing the boughs upward and inward as you wrap the cord in an upward spiral at intervals of 8 to 10 inches. Have the cord tight enough to prevent breakage from excess weight of snow or ice but not so tight as to exclude air circulation.

If you have plants with weak stems or that appear to be overgrown it is a good indication that you need to adopt a pruning program. Pruning and thinning helps to develop stronger and more vigorous plants.

Albert S. Beecher, former Director of the ABS

[Adapted from *The Boxwood Bulletin*, October 1983, Vol. 23, No. 2, p. 45]

