

# *The* **Boxwood** *Bulletin*

*A quarterly devoted to Man's oldest garden ornamental*



*Ickworth in Suffolk, England, home of the first National Collection of Buxus. See story on page 23. (Photo: E. Braimbridge)*

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

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*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.

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# Growing Boxwoods in England

Elizabeth Braimbridge

The Langley Boxwood Nursery was started ten years ago and the first two years were spent clearing up the debris of a previously abandoned nursery which had been on the site. This year we were awarded the status of a National Collection of *Buxus*. Ickworth in Suffolk, England, was the recipient of the first award of a National Collection of *Buxus* status.

The collection holders are usually dedicated private gardeners, who include His Royal Highness Prince Charles, nurseries with a specialist production in a particular genus, or horticultural colleges. There is therefore a very personal attachment to their collections by the owners, which serves to safeguard them and ensure their continuance in future. The collections are made available for reference and sometimes propagating material and

plant identification. The aim is the conservation of a genus—or a section of it—in a known location. During the last ten years the National Collections scheme has considerably raised public awareness of the need to conserve old cultivars from becoming extinct.

The European concept of boxwood is either as a topiary medium or as sharply sheared hedging. We do not think of it as an ornamental shrub with differing forms and textures according to variety. Our more knowledgeable gardeners here do know, rather hazily, that there might be a few more varieties than dwarf and common box, and cv. 'Elegantissima'; many of them will murmur, "I've always rather liked box...". Few of them, until recently, were planting it. It was the missing plant in our gardens.

The only published study on

boxwoods here was by Roy Lancaster while he was compiling the famous Hillier *Manual of Trees and Shrubs*. Entitled *The Common Box in Britain* (ABS.Vol. 8(4):60), he realized how unaware we all were of the richness of the boxwood family.

Langley Boxwood Nursery is situated on very light sandy soil of low pH, in the county of Hampshire in the South of England. We have a problem with plummeting temperature drops in the evening, from a warm summer afternoon to 3°C [37°F], even in August, which does not help too much. A temperature of -10°C [14°F] in winter with no snow cover is also a feature.

We mulch our fields with spent mushroom compost, perfect for the boxwoods owing to its chalk content and light humus. However, a benefit of



At Langley Boxwood Nursery, customers select their specimens. (Photos: E. Braimbridge, except as noted)

the fast draining soil is that it can be worked and plants lifted or planted even after heavy rainfall. Root diseases do not occur,

We produce the larger architectural sizes, such as six or seven feet high obelisks and one metre globes in the field, along with much of the *B. sempervirens* and *B. sempervirens* 'Suffruticosa' hedging. Container growing for year-round planting is a must these days. Containers are placed on capillary-watered sand beds, with the larger containers being drip-watered individually.

Topiary and hedging are still the main call. We cannot produce enough dwarf box on our premises, so we now take cuttings from our own stock in August, send them to be rooted under

glass at a nearby nursery, and receive them back in 9 cm pots ready to sell the following May. These young plants are by then a bushy 10 cm tall and grow rapidly thereafter.

We are at present in the process of rooting 30,000 *B. sempervirens* 'Suffruticosa' for the restoration of the Privy Garden at Hampton Court Palace. All these have to be of exactly the same clone, of course; otherwise the uniformity would be spoilt. We have several dwarf types from various sources which have distinct differences in leaf shine, bushiness, colour, habit, etc.

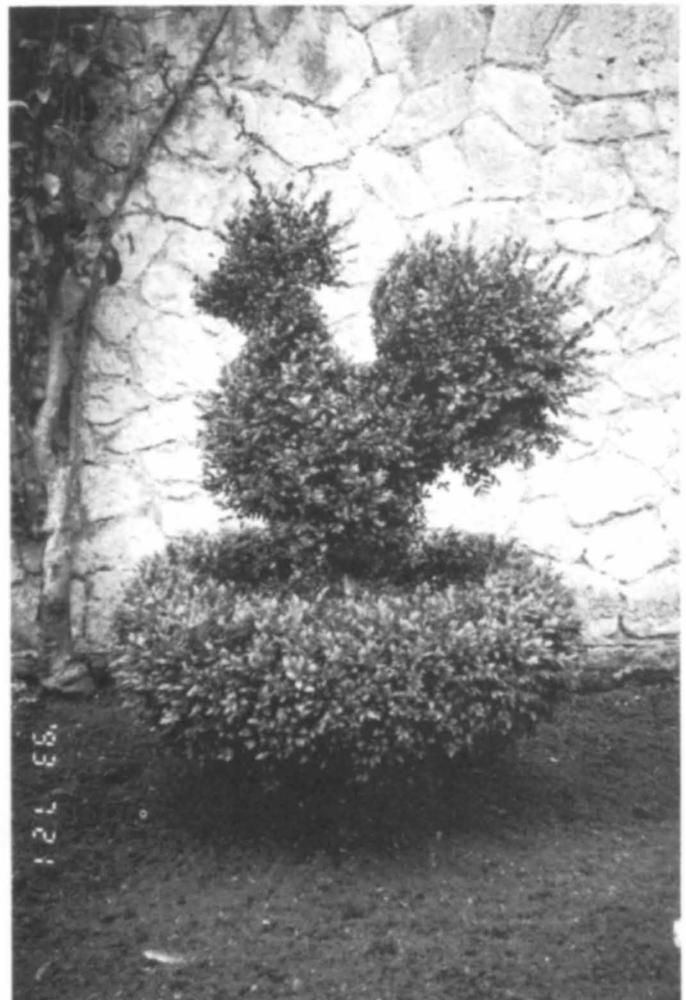
We consider the cultivar *B. sinica* var. *insularis* 'Justin Brouwers' to be a really first class box. *Buxus* cv. 'Faulkner' (Does anyone know its origin?) is a winter sparkler. *B.*

*sempervirens* 'Memorial' quickly forms a perfect oval shape. The new German cultivar *B. sempervirens* 'Blauer Heinz' always stops our visitors in their tracks with its glaucous color and lovely neat dense ball shape. *B. sempervirens* 'Graham Blandy', despite its tendency to spring floppiness, is an excellent accent plant. We try to grow 'Graham Blandy' with fairly low nutrient conditions to keep growth hard.

The British gardening public is very knowledgeable about the wide range of plants which can be grown here, and it gives every plantsman a thrill to see just one "new" item. When they visit us, they can see many varieties unknown to them before. Most of these are the selections and cultivars kindly supplied to us by the ABS and your arboreta.



Some topiary forms at Langley Boxwood Nursery.



A boxwood rooster at Langley Boxwood Nursery.



At the Hampton Court Show, Langley Boxwood's exhibit contained 50 kinds of boxwood. (Photo: The Royal Horticultural Society)

The emphasis on using *Buxus* as a shapely shrub, selected for its natural and particular form, which it holds without shearing, is an idea we hope to encourage here. At a well-attended horticultural show this summer we were asked to exhibit a selection of different boxwoods. In a tiny space we managed to display about 50 kinds. The show lasted six days, and by the end we were exhausted with answering non-stop questions, giving talks and, inevitably, topiary demonstrations. There is a huge interest now in box. The theme of our exhibit was "Box is not just hedging." The visitors were quite amazed at the diversity of natural shapes, all untrimmed.

We learn all the time from our experiences of hands-on growing of boxwoods. We are constantly surprised at its adaptability, its ability to break its own rules for survival. We recently found box growing with its bare roots in fast running icy snowmelt water on the island of Yakushima in Japan. This

was thanks to Dr. John Creech, who directed us to one of the most dramatic mountain treks one could wish to make, ending at the ancient, mysterious Flowering Swamp near the rhododendron covered, snowy summit of this volcanic island in southwest Japan.



Elizabeth Braimbridge, owner of Langley Boxwood.

Wherever possible we study box growing wild in its native country. We have seen tiny seedlings of the South African *Buxus macowani*, with its feathery juvenile foliage, growing on wooded sand dunes of the Eastern Cape. We have seen native box in Korea, looking miserably brown in the winter sun. French and Italian natural stands of box demonstrate the effects of climate and geography.

The contribution by the USA to the boxwood range is an important one, with The American Boxwood Society playing a large part. We have been "boxwood educated" by your *Bulletin*, the boxwood tours and by discussion with the Society's officers and members. We now enjoy sharing the pleasures of boxwood with plant lovers here.

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*Mrs. Braimbridge is a long-time boxwood enthusiast and a member of the American Boxwood Society.*

# Buxus Phylogeny

## Chronological and Geographical Hints from the Literature

Basil Shanahan

The purpose of this effort is to present fragments of published data indicating the relative antiquity of *Buxus*.

The effort does not present any new data or any new interpretation regarding the phylogeny of *Buxus*. The data employed were gathered from the acknowledged sources indicated below and making the data selection did not have the benefit of additional consultation of literature on *Buxus*.

**Chronology:** Cronquist states that it seems fairly well established that angiosperms do not antedate the Early Cretaceous, which starts about 131 million years ago (1).

A more or less continuous record of angiosperm pollen starts with the late Hauterivian stage of the Lower Cretaceous about 84-74 million years ago (2).

Since *Buxaceae* are represented comparatively early in angiosperm history, it seems desirable to look at other opinions of earliest angiosperm history in company with the speculation that *Buxaceae* history may reach back correspondingly.

K. Asama has observed that the ancestral plants of angiosperms would be found in seed-bearing pinnately compound leaves (seed ferns) of the Late Paleozoic but that this type of plant was not found in the Mesozoic to be the ancestors of the Cretaceous angiosperms (3).

To assist with his problem K. Asama offers the theoretical viewpoint that the first angiosperms must be found in upland sediments of the Early-Triassic or the latest Permian. The chronological boundary between the Triassic and the Permian is about 248 million years ago. K. Asama states that the facts he presents indicate that the evolution of land plants always preceded one step before the evolution of land vertebrates. Plants and animals changed their

morphological characters due to similar environmental changes (4).

Again in company with the speculation that *Buxaceae* history may reach back to relatively early angiosperms, other accounts, indicating even earlier history, are noted. William R. Corliss, as compiler, states that scientific creationists have reported that spores and pollen fossils have been found in Cambrian and pre-Cambrian rocks. Because creationists reject the evolutionary timetable, their judgments may be challenged.

However, Corliss notes, most of the discoveries to which scientific creationists refer were made by mainstream scientists with controls against contamination by material from later periods.

In this context reference was made to a discovery of this kind in 1963 near Cerro Vertigo at the westernmost frontier between Venezuela and British Guiana by G. C. K. Dunsterville, and followup investigation of this. The chronological start of the Cambrian is placed at about 590 million years ago (5).

**Phylogeny of *Buxus*:** According to Hutchinson, *Buxus* species are a comparatively decadent group as appears lucid from the geological distribution. The probable pedigree of *Buxus* is: *Magnoliaceae* to *Dilleniaceae*, to *Rosaceae*, to order *Hamamelidales*, which includes the *Buxaceae* (6).

Cronquist offers, as a putative pedigree for *Buxus*: the subclass *Magnoliidae* to subclass *Rosidae*, within which the order *Rosales* is the provenance of the other 17 orders of the sub-class. From the *Rosales* the descent is to order *Calastrales*, and from there to the order *Euphorbiales*, which includes the *Buxaceae* (7).

Cronquist further observes that the *Buxaceae* have been usually associated with the *Euphorbiaceae*, and the

pollen-morphology and floral anatomy have been interpreted to support the association (8).

Cronquist reports on alternative positions and notes that Behnke (1982) regards the *Buxaceae* apart from the families placed in the *Euphorbiales* by Cronquist.

Cronquist also observes that Carlquist (1982) considers that the *Buxaceae* fit better in the *Hamamelidaceae* on anatomical grounds.

Also noted is that serological studies by Scogin (1980) support the relationship of *Simmondsia chinensis*, placed by Hutchinson in the *Buxaceae* family.

**Geologic history and geographical distribution of angiosperms:** Because the speculation of extremely early origins of *Buxaceae* are not supported here by any reference to specific *Buxaceae* evidence, the earliest dates of *Buxaceae* at the Campanian stage of the Upper Cretaceous, about 84 to 74 million years ago, offered by Cronquist are the basis of further discussion here.

**Catastrophic extinction of species:** Corliss, as compiler, observes that with plant fossils the change in flora at the Cretaceous-Tertiary boundary, about 65 million years ago, is sharp and synchronous with it. In the western interior of North America this change occurs at the top of an iridium-rich clay layer. It marks the geologically brief change in ratio of fern spores to angiosperm pollen. Evidence implies continent-wide disruption of the terrestrial ecosystem (9).

This major biological extinction event was observed by many writers to be selective and it was noted that tropical plants came through this catastrophe in best shape although they were least equipped to resist prolonged darkness and resulting cold. Considering the tropical climate preference

requirements of some *Buxaceae* species this survival capacity during that event seems significant (10).

**Continental drift:** Good has observed that after the origin of the angiosperms, possibly between the Cretaceous and the middle or late Tertiary, the continents were more or less joined into a single unit fixed in position. In the latter part of the Tertiary, about 25 million years ago, continental drift occurred together with the uplift of mountain ranges, and a later consequence of this was glaciation in the Pleistocene epoch, which started about 2 million years ago (11).

Good further notes that angiosperm geography is in a state of inherent chaos and expressed the hope that the theory of continental drift will provide an explanation for many problems of angiosperm geography (12).

Good has presented a geographical classification of families and among his families of discontinuous distribution are those that are entirely or predominantly distributed in America and eastern Eurasia.

The *Buxaceae* are not listed among them but the *Magno-liaceae* are. Hutchinson in this context notes that *Pachysandra*, the most advanced genus of the *Buxaceae* family, because it is subherbaceous, is very discontinuous and occurs in the Southeast of the U.S. (one species) and in China and Japan (three species) and this recalls the distribution of the *Magnolia* and *Liriodendron* of the *Magnoliaceae* family (13).

**Theory of tolerance:** Ronald Good published this hypothesis in 1931. The theory's six cardinal principles are (14):

1) A species exists and reproduces successfully only within a definite range of climatic edaphic conditions. This range is the tolerance of the species to external conditions.

2) The tolerance of a species is a character of a species like a morphological character and these characters follow the laws and processes of organic evolution.

3) Change in tolerance character

may not be associated a change of morphological character.

4) Morphologically similar species can have wide differences in tolerance and species of similar tolerance can have little morphological similarity.

5) Relative distribution of species with like ranges of tolerance is determined by competition between them.

6) Tolerance of any larger taxonomic unit is the sum of the tolerance of its constituent species.

Other observations relative to the theory of tolerance are:

1) The tolerance of a species gives it a "potential area" of occupation. Actual occupancy of this area is determined by competition and its dispersal over the area.

2) Some distinct relation between morphology and tolerance may be normally expected because tolerance as a character is amenable to evolution and genetics as are structural characters.

3) The theory of tolerance recognizes three kinds of change based on speed:

a) Evolutionary change, relatively slow.

b) Change of external conditions, relatively fast

c) Change as movement of species by means of dispersal, also relatively fast.

**Buxus Geographical distribution:** Mathou (15) notes that this genera and others of the family are situated in Europe, Africa, Asia, America, and Oceania in subtropical and warm temperate climates.

**Coincidence of anatomical and geographical subdivisions:** Mathou divides the genus *Buxus* into four sections. She has treated individually 66 *Buxus* species.

The first section, *Eubuxus*, has a total of 24 species.

The subsection of this first section, *Sessiliflorae*, has ten species, and its type is *Buxus sempervirens*. This species grows wild only on Box Hill, Surrey and Chiltons, England, but is also found in the Azores and from

Morocco to Turkey. Closely related species are in China and Japan.

Formerly large quantities of *B. sempervirens* wood were exported from around the Black Sea (16). The culture of this species assured its existence in Europe to 67 degrees north latitude, the limit of the warm temperate zone (17).

The other subsection of the first section is *Pedicellatae* with 12 species, and its type is *Buxus balearica*. Species of the *Eubuxus* section are distributed in Europe, Asia, and Oceania.

The second section is *Austrobuxus*, with a single species, *Buxus nitidus*, located in Sumatra.

The third section is *Tricera* and it has 37 species, all of which are American, in the sense of western hemisphere. The first species listed of the group is *Buxus flaviramea*.

The fourth section is *Proboxus*, having a total of 7 species, all in Africa, divided into two subdivisions. One is *Buxanthus*, with three species located in northeast Africa. The other subsection is *Buxella*, with four species situated in central and southern Africa.

**Summation:** The *Buxaceae* family came into existence relatively early in angiosperm history and possibly flourished under climate conditions prevailing until the major rearrangements of the land masses of the earth and associated major changes in climate conditions.

These changes reduced the status of the *Buxaceae* to that of a diaspora of remnants. The *Buxaceae* seem to endure the changes rather than developing them as opportunities.

Application of the theory of tolerance to the geographical distribution of the *Buxaceae* has promise of a better understanding of the tolerance character of *Buxaceae* species together with a better understanding of the correlation of the tolerance character with anatomical characters.

An effort to "improve the breed" may be aided by an attempt to reconstruct the *Buxaceae* toward what they were during their more flourishing periods.

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Citations from sources acknowledged:

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3. Asawa, p. 214
4. Asawa, p. 216
5. Corliss, p. 77
6. Hutchinson, Evolution...,” p. 132
7. Cronquist, p. 360
8. Cronquist, p. 392
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12. Good, p. 414
13. Hutchinson, Evolution...,” p. 138
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15. Mathou, p. 8-9, 445-447
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9. Mathou, Mlle Th. - *Recherches sur la Famille des Buxacees; etude anatomique, microchimique et systematique*, 1939.

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*Mr. Shanahan is a Library Committee member of the Horticultural Alliance of the Hamptons and a member of The American Boxwood Society.*

## Williamsburg Garden Tour

### 1993 Annual Meeting

Mrs. Robert L. Frackelton

On May 22, 1993, in conjunction with the ABS Annual Meeting, many members and guests enjoyed a walking tour of Colonial Williamsburg gardens. The tour began near the Magazine where we were divided into three groups led by Cynthia Long, Patricia Long and Rollin Wooley. We headed in different directions and with 4½ miles of boxwood in the Historic Area, it wasn't difficult to locate boxwood gardens!

Our group entered the rear of the Custis tenement garden where *Buxus sempervirens* 'Suffruticosa' enjoyed the shade of an *Ilex decidua*, and then into the garden designed to represent the British flag.

The Bryan House garden had several topiary forms and a pleasant arbor, planted with native wisteria and coral honeysuckle (*Lonicera*



*Custis tenement garden, where Buxus sempervirens 'Suffruticosa' flourishes in the shade of Ilex decidua (Possum Haw). (Photos: Mrs. Robert L. Frackelton)*



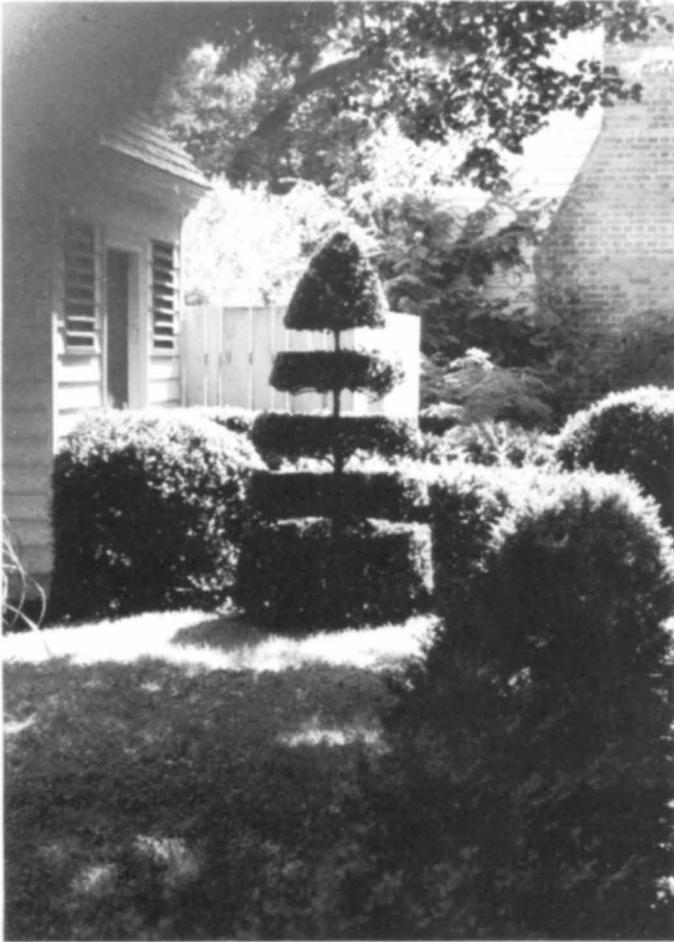
*Arbor in Bryan House garden, planted with Wisteria frutescens and Lonicera sempervirens.*



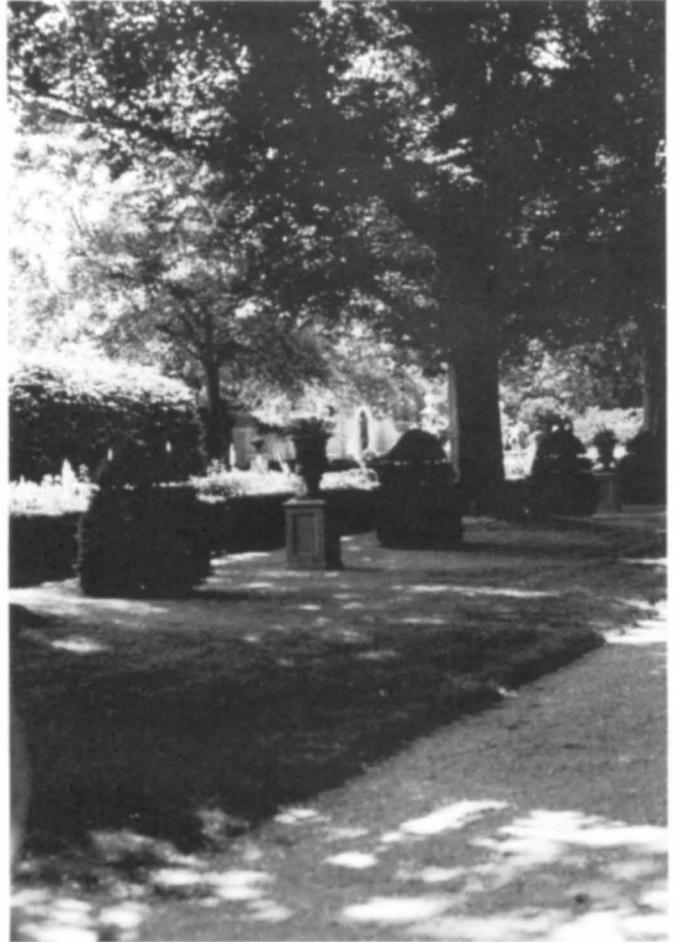
*Topiary forms of Buxus sempervirens and dwarf plum trees in the Bryan House garden.*



*Corkscrew topiary of Buxus sempervirens.  
(Photo: Mrs. Robert Schenk)*



*Interrupted cone topiary of Buxus sempervirens in the E. Deane House garden. (Photo: Mrs. Robert Schenk)*



*Buxus sempervirens shaped in the interrupted cone topiary under an American Beech in the Palace gardens. (Photo: Mrs. Robert Schenk)*



*Wisteria prutescens blooming on the fence in the George Wythe garden with globes of B. sempervirens and a pleached hornbeam arbor in the background.*

*sempervirens*), where we paused.

Other topiary forms seen along the way were a cork-screw in the Roscow Cole House garden and interrupted cone forms in the E. Deane House garden and the Governor's Palace gardens.

The George Wythe House garden represented a formal garden with boxwood shaped into globes and an arbor of pleached hornbeam.

The rear of the Robert Carter House garden had *B. sempervirens* 'Suffruticosa' in its natural billowing form, with no artificial shaping.

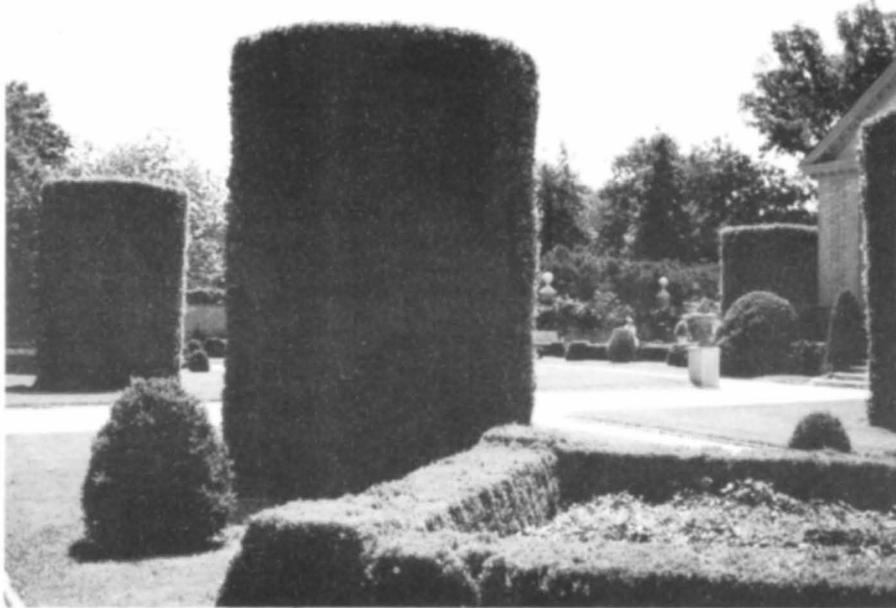
A very formal garden on the Governor's Palace grounds had low parterre hedges and on the outside pyramids as accents. There were also twelve cylinders of yaupon hollies (*Ilex*



*An American Elm tree shades the billowing B. sempervirens 'Suffruticosa' in the Robert Carter garden.*



*A parterre of B. sempervirens on the grounds of the Governor's Palace.*



*Twelve topiary cylinders of Ilex vomitoria (yaupon holly), 12' tall and 8' in diameter, represent the Twelve Apostles in the Governor's Palace garden.*



*Lush boxwood in the Brush-Everard garden.*



*Guide Cynthia Long among 5-8' tall B. sempervirens.*



*The walkway at Nicholson Street.*

*vomitoria*) to represent the twelve apostles.

A view from the Mound behind the Brush-Everard garden was a mass of boxwood. Behind the house where our

guide paused, paths were overgrown with *B. sempervirens* 'Suffruticosa', some reaching shoulder height. A path leading from the Mound to Nicholson Street was "hedged" with *B. semper-*

*virens* 'Suffruticosa', some 8' to 10' tall.

Upon reaching Nicholson Street, one of two that Governor Nicholson named for himself, the other being Francis, we headed for the bus pick-up.

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# Workshop in Williamsburg May 21, 1993

## Propagation

Tom Saunders

I guess the best way for me to get started is to qualify myself as your workshop teacher on boxwood propagation. As the second of seven sons whose father ran a wholesale container nursery, I've been propagating plants ever since I was big enough to break cuttings. During that time and the years since, I don't believe any business has undergone the changes that the container nursery business has.

As an example, plastic cans were not "the thing" at our nursery in the beginning. Initially, 1-gallon metal cans were picked up from the county school kitchen and drainage holes were punched into them to facilitate water movement through the pots. Soil was shoveled into the pots as the media of the day. Into these pots were placed irregular, un-uniform single boxwood cuttings which were fertilized with 10-10-10 during the growing season. The plants were placed under loblolly pine shade, and after about four growing seasons the plants were ready for market. Of course, one had to pick through the plants to select the best ones for sale. Once selected, roots had to be pruned off that had grown through the drainage holes. Weed control was done by hand and very little pruning took place.

Today one must decide whether plastic pots for production are blow-molded or injection-molded. Technically speaking, they are termed "containers" now, and not pots. In addition, pine bark, peat moss, sand, perlite, vermiculite, peanut hulls, and yes, soil, are just some of the choices from which a grower can choose from to comprise their growing media. Of course, we can no longer call it soil; now, it's a plant medium. Also to expedite turnover, we must decide whether we want 1, 2, or 5 cuttings per container. For fertilizers, we can choose

between slow release Osmocote, sulphur-cote, other water insoluble nitrogen compounds, and also liquid fertilizer.

To make matters worse, we also have to choose a source of micronutrients and, if this is not enough, whether we want lime, and if so, how much and in which form—powdered or granulated. For weed control, we can choose between such products as Rout, Snapshot, OH2, Devrinol, Treflan, Southern Weedgrass Control and others. If all these choices make you uncomfortable, they do me, too. Over the years, the only product at our nursery that has been consistent for the duration has been the Rainbird sprinklers.

Let's get back to the matter at hand. As of this spring, I've been nursery manager at our farm nursery for 12 years. Three years ago, the business became incorporated and the name was changed from Saunders Orchard & Nursery to Saunders Bros., Inc. The name was chosen because Saunders Brothers was the name of my grandfather's business when he and his brothers owned it in the early 1900s. Our nursery is located between Lynchburg and Charlottesville, Va., at the foothills of the Blue Ridge Mountains in beautiful Nelson County. For you geographic buffs, Walton's Mountain, Crabtree Falls, and Wintergreen are the county's landmarks. Unfortunately, however, Nelson County is probably best remembered as the final nesting site for Hurricane Camille on August 19, 1969. Fortunately its devastation on our farm converted us from a field nursery to a container nursery.

At present, we produce 1/2 million plants annually on our 35-acre nursery. Most of the plants are grown and overwintered in one of the 150+ over-

wintering structures we have. Our nursery work force will fluctuate from 10 employees in the winter up to 30 during the peak shipping and planting season. In addition to the over-wintering structures, a good deal of the boxwood and some of the hardier conifers are still grown and left outside for the winter months.

Besides growing some of the East Coast's best "English" boxwood, we also produce azaleas, conifers, liriop (which is a great combination plant for boxwood), rhododendron, holly, hemlock, other flowering shrubs, and my personal favorite, pansies. Other boxwood cultivars grown for sale are "American," 'Graham Blandy', *B. sinica* var. *insularis*, *B. sempervirens* 'Green Beauty', 'Jim's Spreader', *B. microphylla* 'Kingsville', *B. microphylla* var. *japonica* 'Morris Dwarf', and *B. sempervirens* 'Fastigiata'.

Initially, our nursery was nestled under a pine overstory and boxwoods were the main plant produced. Through time and expansion of both our numbers and our product line, we were forced into open areas for plant production. A lot of our boxwood are still produced outside under the pine trees. I can sleep better during a cold winter's night if I know my azaleas, "rhodies," holly and boxwood babies are inside out of the severe temperature fluctuations and desiccating winds.

A boxwood propagation house at our nursery will have a gravel floor base to ensure good drainage and aged railroad ties to form the exterior sides of rooting beds. The media used is a mixture of coarse sand and peat moss. The rooting depth is about 6". Shade cloth is left on the house year around and sprinklers are installed to provide sufficient water for the young plants. The beds are narrow enough that a worker can reach half the width of the

bed to either stick the cutting or lift it once rooted. We use pylon labels to mark varieties and provide the workers with 2"x 10" boards to sit upon when sticking if so desired. For winterizing the house, a sheet of milky white plastic is attached to the boards down the side in the fall. This plastic can also act as an umbrella to facilitate fall and winter sticking in inclement weather. Also, it provides heat retention, which is essential in quick rooting. As far as I'm concerned, soil temperature is the number one factor in achieving fast rooting if the cutting is taken at the proper time.

Any homeowner can duplicate this situation in his back yard with 2" lumber if ample shade is present. If shade is not present, make a wooden frame out of 2" x 4" lumber and nail burlap sacks as a shading material. Of course, water must be provided as needed. My biggest complaint with this age-old system was that the plant's growth was checked when it was lifted and became bare-rooted. For this reason and due to a lack of houses, we looked at an alternative environment for rooting.

Rooting in flats in a media of peat moss, pine bark, and perlite has resulted in rooting percentages in excess of 95%. Within each of these flats are 64 2.5" x 2.5" round jiffy peat pots. Each peat pot is 3.5" deep. Around the area we attach shade cloth to cut down on wind desiccation. Having developed a successful system, we decided to try it in a growing structure to eliminate the only drawback to the system; that is, the labor required to move the flats in the fall. Initially we filled the flats and placed them in long beds in a house. Looking at this method closer, we felt that we were not utilizing enough of the total floor space. Henceforth, we set the flats with a few skips in the bed to allow the worker places in which to access the individual flats. I don't know how a greenhouse could be utilized any more efficiently than this. Once in place, we start taking broadleaf cuttings after the 4th of July. Cuttings approxi-

mately 4" in length are removed from the parent plant and the lower leaves are removed. To expedite the hormoning process, cuttings are banded together with a rubber band to prevent reassembling them later. The physical act of stripping the cutting opens sites for rooting to begin. To aid in counting the cuttings, 25 are banded per group. This is not necessary if the cuttings are to be planted in cell flats, only if rooting beds are being used. Without the number, goals cannot be achieved.

Uniformity of finished plants is always the objective of the grower. This can be achieved if one starts out with uniform cuttings. Clipping the terminal achieves two other purposes: one, it prevents the cutting from drying out so quickly by eliminating the succulent growing tip, which is not as important with boxwood as it is with azaleas and other flowering shrubs, and two, it causes the cutting to branch more readily resulting in a fuller plant for the field. Once readied, cuttings are moistened with water to enable the powdered rooting hormone to stick easier. With boxwood, Hormodin #2 powder is used, which is equal to 0.3% IBA (or 3,000 ppm). Cuttings taken in the summer months root readily with this hormone concentration. If cuttings are to be taken later in the year, an increase in the hormone concentration may be needed. As time permits, we stick boxwood cuttings from June through February. Because boxwoods as a whole don't proliferate or grow as quickly as other plants, most of our cuttings come off of landscape plants and not container plants.

In recent years, we have had good success using the liquid hormone IBA-K at a concentration of 5,000 ppm. This hormone is water soluble making it a great product for the propagator. Because it is a liquid, cuttings are not pre-moistened before they are hormoned. We recommend a 3-second basal dip using this product. I always feel better using a liquid hormone because I feel plant uptake of the product is necessary for good results.

With a powdered hormone, do we honestly know how much remains after the physical process of sticking the cutting is over?

Because of the number of varieties we're growing we like to tag most of the flats. We use a flat 18"x18" made by Lerio. In each flat, two plastic inserts are placed, each numbering 32 cells that are 2.25" square and 3.5" deep. Therefore, 64 cells make up a tray. Through a lot of cost analysis, we have determined this to be the most economical route to go. Often cultivars are a different shade of green and this aids in plant identification. In addition, we encourage our workers not to plant boxwoods that have similar appearances side by side. Over the years, we have overwintered azalea liners in these unheated houses, too. Of course, our ultimate goal is to have plants that our customers would keep coming back for, isn't it?

Two of my favorite boxwoods are *B. sempervirens* 'Graham Blandy' and one we call "insularis" (*Buxus sinica* var. *insularis* nana). After all, if we can't be the President of the United States, then let's let our plants beautify the grounds at the White House. (Close to 400 plants of *B. microphylla* 'Green Pillow' were planted in the rose garden at the White House.)

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*Mr. Saunders is the manager of the boxwood division of Saunders Brothers, Inc., and a Director of the ABS.*

### In Memoriam

Mrs. Athalie Clarke  
*Life Member*

Mr. Alden E. Flory  
*Member since 1986*

Dr. L. Henning Mayfield  
*Member since 1988*

Mrs. Paul Stone  
*Member since 1988*

## Minutes of Summer Board Meeting - July 9, 1993

A special summer meeting of the ABS Board of Directors was held on Friday, July 9, 1993, at the Sheraton Inn in Staunton, Virginia. Those attending were President Dale T. Taylor, Vice President Mrs. Robert L. Frackelton, Secretary Mrs. Scot Butler, Treasurer Mrs. Katherine D. Ward, Directors Lynn R. Batdorf, Mrs. Sigrid Harriman, Malcolm Jamieson, Tom Saunders and Stephen D. Southall, Director of the State Arboretum, Dr. Edward Connor, and landscape architect, Nancy Takahashi.

The meeting was called to order by President Taylor at 1:00 p.m. The Treasurer reported a balance of \$32,966 in the checking account and the amounts allotted to special funds.

Dr. Connor reported on the approaching completion of the new amphitheater and the advisability of rescheduling the sequence of developing sections of the ABS Memorial Boxwood Garden. It was agreed to shift concentration to the east end of the garden, the area where existing specimen plants will be displayed, so that soil preparation, drainage and water line installation may begin this fall.

Mrs. Nancy Takahashi explained the revised master plan of the Memorial Garden. The north and south sections present a more logical plan for the boxwood plantings. Cultivar specimens will be arranged by species, with the *Buxus sempervirens* on the two outer edges and color drifting from dark foliage to light foliage. Discussion centered on the need for decisions about specific cultivar locations. There still remains a problem with doubtful names. Mrs. Takahashi noted that it will not be a static garden; plants can come out and others can be moved in. It was noted that spacing must be far enough apart to allow room for digging. Questions were raised about named cultivars which have not been registered; perhaps emphasis could be given to registered plants, a prominent location might be given to plants which

the Society wishes to promote.

The garden is to be an educational display of plants. The need for a wind break was mentioned, perhaps existing *B. sempervirens* (Common Box) at Blandy Farm could form a hedge along the north side of the garden. The water line will be installed 36 inches deep for freeze protection. For co-planting materials, a specific list of plants might be published, with sizes desired, as a request for donations. Mr. Jamieson, Mr. Saunders and Dr. Southall will work for plant donations when they receive the list of needed plants.

Mrs. Butler moved that the Board authorize the expenditure of up to \$8,500 in accordance with the cost estimate provided by Dr. Connor for preparing the east end of the Memorial Garden for planting this fall, including water line installation, preparation of beds, planting and mulching. Dr. Southall seconded the motion, which was passed unanimously. This expenditure replaces the Society's commitment of \$6,000 previously authorized at the spring Board Meeting on March 19, 1993. Dr. Connor said that new uniform signs are being placed throughout the State Arboretum.

Mrs. Frackelton reported that the July *Boxwood Bulletin* is being printed. Membership is now 750.

Mr. Batdorf had no Registrar's report. He circulated a group of excellent photographs of boxwood diseases and insect damage to be used in the new *Handbook*. As for the *Monograph*, he has decided to include only the temperate zone boxwood species. The next five-year Index of *The Boxwood Bulletin* will be needed in 1995.

Mr. Jamieson suggested that a packet of information about the ABS and favorite boxwood cultivars be prepared and sent to magazines and newspapers. He feels there is little general or widespread knowledge about boxwood.

There followed a discussion of possible locations for the 1994 Annual Meeting and a future tour.

The Board of Directors will meet on Friday, September 10 at 12 noon in Charlottesville for the fall meeting.

*Mrs. Scot Butler, Secretary*

Following the July meeting, on August 6, 1993, there was a gathering at Blandy Experimental Farm to discuss the relocation of the ABS Memorial Garden boxwood collection and companion plants according to the Master Plan. Dr. Connor and Nancy Takahashi had marked the outline of the area and Dr. Connor led the group around the site in a pouring rain. Present were Mr. Batdorf, Mrs. Butler, Mrs. Frackelton, Mrs. Harriman and Mrs. Sexton. When Mrs. Takahashi joined us, there was a review of the plants with suggestions as to space required and choice of companion plants. This was to be incorporated and presented at the fall board meeting.

## CORRESPONDENCE

Dear Mrs. Frackelton:

The booklet editors are very pleased and proud to receive two awards from the Federation of Garden Clubs. One is the Massachusetts Certificate for Special Achievement. The other is the Tommy Donnan #13 National Award Certificate of Merit under Publications.

The Book of Evidence was mailed to the Federation's Medal Awards Chairman on June 9, 1993. Your letter was printed in it. It was (and is) a fine letter and we thank you very much for it. It was mind-boggling but very important that we had a copy of Lynn Batdorf's latest listing. I am sure we would have flunked without that.

Thank you again for your cooperation and help.

*Edie Knowles (Mrs. George B., Jr.)*  
Garden Club of Buzzard's Bay, S.  
Dartmouth, Mass.

## Members Share...



*Testimony to the endurance of boxwood, these Buxus sempervirens 'Suffruticosa' were laid flat by a March snow blizzard, but in May they were upright with a flush of new growth (below). If snow is caught in the powdery state, brushing it off is helpful, but when icicles have formed, leave it alone. Some broken branches will be quickly filled in. (Photos: John E. Hart.)*





*In the Armstrong garden in Williamsburg, some vigorous sports of Buxus microphylla 'Compacta' have taken over the parent plant (above). Below, Buxus harlandii continues its vigorous growth, and is now shoulder high. (Photos: Mrs. Robert L. Frackelton)*





At Elmwood in Essex County, Va., *Buxus sempervirens* 'Suffruticosa' plants line the garden path with clumps of *Crape Myrtle* adding relief to the straight line. Growth along the inner branches indicates that the plants have received good care (left). At right, the limbed up trees give the effect of an English manor park as seen beyond a cluster of shoulder-high *Buxus sempervirens*. Mature trees include *Magnolia grandiflora*. (Photos: Mrs. Robert L. Frackelton)



## The Seasonal Gardener

Practical tips for boxwood enthusiasts from Society members

### Boxwood: the Key to Christmas Decorations

#### Wreaths

The ideal time to shape your boxwood is late fall using your clippings to make holiday arrangements, wreaths, and roping.

To make a basic boxwood wreath you will need a spool of wax-coated string or a spool of #22 gauge wire, a flat 2-wire wreath frame 18" in diameter, approximately 1½ bushel of 5-inch sprigs of boxwood. (Supplies may be purchased from Wal-Mart or a craft store).

Wrap the end of the wire on the spool around the

outer wire on the wreath frame at a cross piece, so the wire or string will not slide. *Do not* cut the wire or string from the spool. Assemble a cluster of six sprigs of boxwood and lay on the wreath frame. Wrap the attached spool wire very tightly around the cut ends of the boxwood several times, then wrap the wire very tightly around the wreath frame several times. *Do not* cut wire or string from spool.

Keep the clusters of boxwood uniform in size. To complete the wreath, continue wiring clusters of boxwood onto the frame, working in one direction. Attach the last cluster of boxwood by lifting the first cluster up and wiring the last cluster under it. Wrap the attached spool wire tightly around the ends of the

last cluster and then around the wreath frame. Leave 1 inch of wire to wrap around the frame. Cut the wire from the spool with the wire cutters and wrap the 1-inch end around the outer wire on the wreath frame several times to secure it. Clip off any protruding pieces of foliage. Any type of boxwood is suitable for any of these projects.

Boxwood wreaths can also be made using a straw base. (These are not suitable for between storm doors, as the door will not close). For this wreath you will need an 18" straw wreath wrapped in green plastic and floral pins. Assemble a cluster of three to four sprigs of boxwood and lay it on top of the straw base. Stick a floral pin over the stems of the boxwood and push it in. Assemble another cluster of three to four sprigs of boxwood the same size as the first. Lay it on the first cluster 1 to 2 inches down from the top of the foliage so that it overlaps the first cluster and covers the pinned ends. Secure it with a floral pin. Continue pinning clusters onto the straw base, working in one direction. Attach the last cluster of boxwood by lifting the first cluster up and pinning the last cluster under it. Repeat the same steps for the outer and inner edges of the wreath. Extra clusters of boxwood may be required to cover any plastic that remains exposed. Clip off any protruding pieces of foliage.

NOTE: The floral pins will hold best if the stems of the boxwood are kept short and as non-woody as possible. This wreath may be double faced.

#### **Roping**

Materials needed: Boxwood clipping 8-9" sprigs, cord or twine, one spool of #20 gauge floral wire and wire cutters. Stretch your cord keeping it secure (on a door knob or attached to nails). Hold a bunch of 3-4 sprigs of boxwood and the cord in the left hand and the spool of wire in the right. Wrap the wire around the stems of the boxwood and around the cord 4 times. *Do not* cut the wire from the spool. Assemble another bunch of 3-4 sprigs of boxwood and lay it in the same direction on the first bunch on the cord several inches from the end so that it overlaps the first bunch and covers the stems. Twist the attached spool wire tightly around the two bunches two or three times. Be careful to wrap the stems only; if the leaves are wrapped, it will spoil the fullness of the roping. Keep working in the same direction. Attach the last bunch of boxwood in the opposite direction. Twist the attached spool wire tightly around the last two bunches. Cut the wire from the spool.

NOTE: Other natural materials for roping such as holly, white pine, and cedar can be combined in random bunches.

#### **Kissing Ball**

Many different materials may be used for the ball; potatoes, apples, a 3" or larger Styrofoam ball, or a ball may be made from chicken wire and floral foam. To start, insert one 10" piece of #18 gauge floral wire down through the center of the ball. Bend the bottom of the wire into a fishhook shape.

Make sure that the hook is firmly attached to the ball. Bend the top of the wire into a loop. Attach the other 10" piece of #18 gauge floral wire to the loop. Bend the top of the second wire to suspend the kissing ball at a convenient working height. Insert 3-4" sprigs of boxwood into the ball until the ball is entirely covered. Turn the ball frequently while working on it to be sure that its shape is uniform. The finished ball should be 8-10 inches in diameter. Red ribbon, berries, herbs or other material made be used to decorate the ball. These can be wrapped onto a wooden pick and inserted. After the holiday season the entire ball is discarded.

#### **Table Arrangements**

Boxwood makes an excellent filler at any time of the year. Longer pieces of boxwood are needed for arrangements and their length depends on the flowers and the size of the arrangements. After plucking the stems should be cut on a diagonal and inserted first into the arrangement. After the greens are placed the flowers, cones or balls made be added.

Boxwood is an excellent green to work with as there is no sap, no needles to hurt or drop off and even when it becomes dry, it stays intact. The greens can be washed off in a weak dishwashing solution to remove any dust or insects. This will also give a shine to the leaves. If the season has been very dry, leaving them in the water for a couple of hours will keep them fresher much longer. If a wreath is placed a door behind a glass storm door, it will turn brown with sunburn.

It should take a less than an hour to make a wreath or a kissing ball. They make ideal gifts and something you can use more than one of.

*Katherine Ward, Treasurer of the ABS*

*Mrs. Ward operates a tree farm, and during November and December, a holiday gift shop.*

