

The

APRIL 1972

Boxwood Bulletin

A QUARTERLY DEVOTED TO MAN'S OLDEST GARDEN ORNAMENTAL



Heronwood's "Secret Garden," hidden behind tall boxwood hedges and high flagstone walls with a recessed 14th century iron door.

Article begins p. 50

Photographer, TAMES, New York Times

Edited Under The Direction Of
THE AMERICAN BOXWOOD SOCIETY

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1st V. P. _____ Dr. J. T. Baldwin, Jr.
2nd V. P. _____ Mr. Alden Eaton
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Dr. Henry T. Skinner
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The Boxwood Bulletin

APRIL 1972

Vol. XI No. 4

EDITOR — MRS. EDGAR M. WHITING

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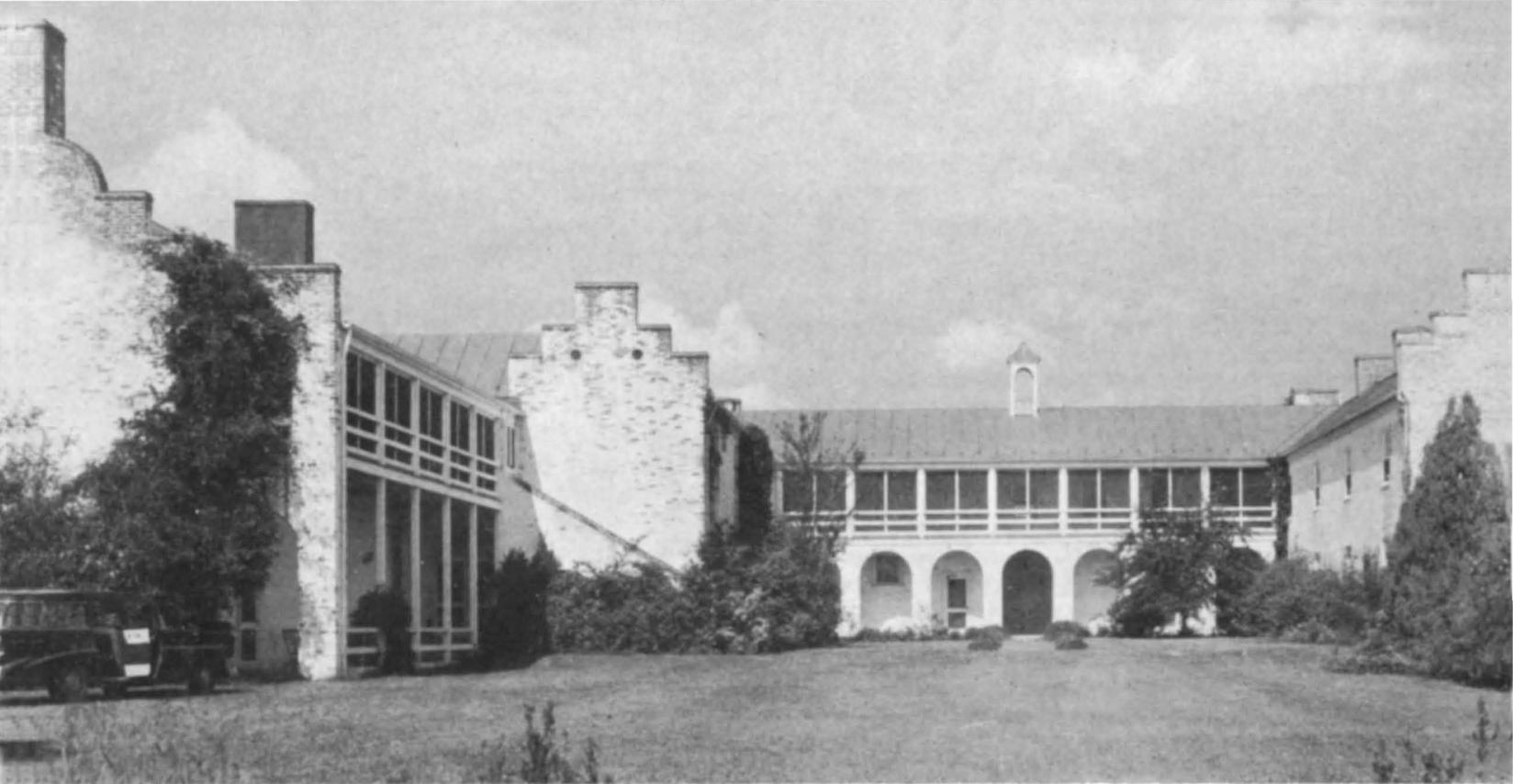
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American Boxwood Society

Twelfth Annual Meeting

Wednesday, May 10, at Blandy Experimental Farm, Boyce, Virginia

ANNUAL MEETING INFORMATION

Date: — Wednesday, May 10, 1972 (Please mark your calendar!)

Place: — The Blandy Experimental Farm (U. Va.) near Boyce, Va. (Sign at US 50 entrance, about 10 miles east of Winchester; 4½ miles west of Shenandoah River bridge on US 50.)

Time — Eastern Daylight Saving Time:

9:30 a.m. — Directors' Preliminary Meeting

9:30 a.m. — Registration

10:30 a.m. — Business Meeting convenes in library

12:30 p.m. — Luncheon Recess (Bring your sandwiches; coffee will be available.)

1:30 p.m. — Meeting reconvenes for unfinished business, followed by SPEAKERS' PROGRAM

3:00 p.m. — Adjournment

Notice: Dues will not be accepted at this meeting. Please mail your remittance to the American Boxwood Society, Box 85, Boyce, Va., 22620.

TULEYRIES GARDENS OPEN

Mrs. Orme Wilson, a Life Member of ABS, has kindly consented to open her extensive and handsome boxwood gardens at The Tuleyries for visits from those who have time after registration or during the lunch hour. Blandy Farm was originally part of the Tuleyries estate, and the gardens are only a short distance from the Farm buildings.

VISIT HERONWOOD AFTER THE MEETING

Admiral Phillips cordially invites members and friends to stop by Heronwood after adjournment of the Annual Meeting, for refreshments, to see the gardens, and to renew boxwood friendships.

To reach Heronwood, go east on US 50 through Upperville and past the Horse Show grounds to county road 623, (the first road to the right after the Show grounds), turn right and go 1.1 miles to Heronwood; on your right, stone gate posts with sign.

Heronwood In The Headlines:

"On An Estate In Virginia Ancient Art Of Topiary Is Renewed Each Spring"

This headline appeared above a long illustrated article in the New York Times on Sunday, May 9, 1971, describing and depicting the gardens and allees of Heronwood, with their rare topiary figures and giant hedges of boxwood, the joy and pride of ABS President Neill Phillips.

Since then LIFE magazine has had a team of photographers and writers at Heronwood, though the results of their visit have not yet appeared in print. And on March 26, 1972, the Sunday Star of Washington, D.C., filled a couple of pages with an article "Topiary, Living Sculpture," and pictures in color that made your editor sigh with envy.

"Heronwood's owner," said the New York Times, "is no Sunday gardener; the 70-year-old, rugged Admiral is in it all year round for love — and for the money he makes from selling plants. He is an expert in topiary — that old-fashioned but flourishing art of pruning and training shrubs and trees into bird and animal shapes or planting them to form intricate geometrical patterns."

The gardens were completely overgrown with poison ivy, blackberries and "native trash growth," the Admiral told the New York Times, when he and Mrs. Phillips bought the estate in 1955. The topiary, a principal feature, had lost its shapes or been vandalized; but luckily the great boxwood hedges had not suffered. The results of the Phillips' loving and skillful restoration and enhancement of the Heronwood gardens are best described in the following article, written by Admiral Phillips for the information of visitors, and presented here for those ABS members who will accept the Admiral's warm invitation to come to Heronwood after adjournment of the Annual Meeting. The gardens are at their best from now until late June, and well worth seeing any time of the year, again and again.

WHY HERONWOOD?"

An early name of the house and its grounds was "Seldom Seen," obviously derived from the thick belts of trees around the place. This was in keeping with a charming early Virginia custom of fanciful estate names; e.g., "Clovercroft", "Yonder Lea", "Over the Grass", "Lucky Hit", "Farmer's Delight", etc. Later, the place was called "Edgewood," and the Phillipses bought it under that name. They felt, however, that Edgewood had become too universal a suburban and cemetery designation, for such a unique place and they hit upon the name Heronwood on the day they drove into the grounds after buying the place, when a green heron and a great blue heron flew up from the marsh behind the house. They were attracted by the old name of Seldom Seen but they realized that they must develop a commercial nursery as part of the estate, and they felt that the name Seldom Seen Nursery would not do.

N. P.

HERONWOOD

September 1971

The central core of the house is 18th Century. Additions were made in the 19th Century and in the early 20th Century. By this time it had become a very big and unwieldy house, with the exterior a mixture of Victorian gingerbread and Long Island fake Georgian.

The gardens were laid out about 1900 by Mrs. Henry Oxnard, the wife of the then owner. She was her own architect; and designed and supervised every detail, with local day labor and no foreman. The stone for the retaining walls and walks was quarried on the place under Mrs. Oxnard's direction. The flagstone walks are ingeniously laid, some of them inset with old millstones. But most notable are the single-slab benches in the Grande Allee, which show a high degree of quarrying skill, and the recessed stone arches over the gateway in the Secret Garden (a very difficult feat of masonry).

Mrs. Oxnard was French, and the design of the gardens reflects the Mediterranean style, with the succession of terraces, the separate enclosed gardens, and the various allees with both straight and curved vistas. Her handling of the location of the gardens in relation to the house is masterly; the main axis of the gardens being at an angle with the facade of the house; so as not to obstruct the view of the Blue Ridge Mountains and yet to allow one to look up at the facade of the house from the gardens, and vice versa.

Rear Admiral and Mrs. Neill Phillips bought Heronwood in 1955. The residence, cottages, and 50 acres of land had been derelict for many years. The house was in ruinous condition. The fields and gardens were overgrown with weeds and scrub. But the splendid boxwood when cleared of overgrowth was found to be generally in good condition. Since 1955 it has received careful attention, pruning, thinning, spraying, feeding and watering as needed; and now it is one of the finest collections of boxwood in America.

The Phillipses drastically reduced the size of the house, and Mrs. Phillips with the brilliant assistance of an architect, the late William Bowman of New York, changed the exterior to give it something of a Mediterranean character to combine with that of the gardens (Virginia with a French accent.) The house was squared off, the living-terraces were added with their obelisks and ball finials, the lead

downspouts and the pineapples on the roof were installed.

In the gardens and grounds considerable alterations were made, with the assistance of the late Gladstone Hodgin of Upperville; but Mrs. Oxnard's basic design, held together by the terraces and retaining walls and the massive plantings of boxwood, was largely retained. The Phillipses also added the statuary to the gardens. The pair of lifesize nymphs fronting the living terrace are Austrian, fruitwood painted to resemble stone, period 1820 and copies of Canova sculptures. The small lead figures of children of the Four Seasons on the balustrade of the main terrace are English 18th Century. By the small round pool down at the foot of the Grande Allée there is a sacred ape holding an eel, carved stone, Japanese 18th Century. The other statuary and wall fountains are modern Italian copies of 18th Century originals. Between the Secret Garden and

the Long Walk there is a wrought iron door (black with gilt decorations) that was produced by Louis XV's ironmonger.

Mrs. Oxnard in addition to laying out the boxwood hedges had created a good deal of boxwood topiary. However during the years that Heronwood lay derelict the topiary was either vandalized or lost its shape. Some of it the Phillipses and their head gardener, Richard Wines, have gradually brought into shape again; notably the pair of giant peacocks near the living-terrace, and the boxwood standards in the Card Garden. A standard is a piece of topiary with a straight trunk and a round head. Creating a first rate standard is a slow process requiring years of attention. The collection of boxwood standards at Heronwood is perhaps the finest in the world both in numbers, quality, and uniformity. It has taken about 70 years to reach its present perfection.



Seen from the upper windows of the house, the four suits delineated in dwarf boxwood are clearly outlined against white stones, a ground cover used at Versailles and other old French gardens. Surrounding it are 23 boxwood standards exceptional in both quality and quantity.

All photographs by TAMES, New York Times

The Phillipses and Richard Wines have made a great deal of additional topiary; not only in boxwood but also in yew, hemlock, arbor vitae, juniper, holly, and euonymus. Production and sale of topiary has been put on a commercial basis as an essential aid in meeting upkeep costs. The topiary under construction is located in two small field nurseries south of the house. When a piece has been finished and its form is set, a process that may take three to fifteen years, if it is of unusual merit or interest it is moved into the gardens proper. A special topiary collection, constantly changed as sales are made, is maintained in the Zoo, which originally was a grass tennis court.

The boxwood used for topiary is American boxwood (*Buxus sempervirens arboreascens*) since it is the most easily shaped into figures. American boxwood, which eventually grows into a small tree,

also forms the magnificent hedges some of them 18 feet tall. English boxwood (*Buxus sempervirens suffruticosa*) is used for the parterres in the Secret Garden and the Card Garden and in other places. American boxwood has a pointed leaf. English boxwood has a more rounded leaf. It also is of a somewhat lighter shade of green than American boxwood. English boxwood and American boxwood are misnomers that somehow have come into general usage. Both types originally came from Mediterranean countries.

Since the death of Mrs. Phillips in 1966, Admiral Phillips has carried on the Heronwood business. He also is President of the American Boxwood Society, and in 1970 he was made a Member-at-Large of the Garden Club of America, an honor held by about 15 nationally known professional and amateur horticulturists.



Above: Admiral Phillips stands among his living sculptures — chessmen, standards, birds, columns, spirals. Many have been made from misshapen boxwoods found on old estates or near abandoned farmhouses.

Opposite page: In the "Zoo", the Admiral shows chicks, swans, peacocks, fantail pigeons, leaping dolphins and six roly-poly penguins. These last, Admiral Phillips told the N.Y. Times, he has managed to keep for himself only by continually raising the price.



Statuary At Heronwood

Front Terrace of the House: Four cast lead statuettes of children as the Four Seasons. English 18th-Century.

Terrace Lawn: Viewed from the house terrace. Two Canova Nymphs, Austrian, about 1825. Fruitwood painted to resemble stone. Originally from the Peabody Estates, Danvers, Mass., the generous gift of Mr. Benjamin W. Thoron, a Peabody descendant.

Outer Terrace: A pair of fauns and goats. Italian carved Istrian Stone. Modern copies of 18th-Century pieces.

Secret Garden: A set of 4 terms (3 Satyrs and a Flora) — French, Second Empire, cast stone. A cast lead turtle fountain — Modern Italian. A wrought iron doorway, leading to the long walk — Louis XIV. Perhaps the most important sculpture piece at Heronwood.

Grande Allée: Ram's head wall fountain and rectangular basin in cast lead — Modern Italian copies of 18th-Century pieces.

Pair of obelisks with elephant bases in carved Istrian stone. Modern Italian copies of 18th-Century pieces.

Ape with Eels by circular pool. Carved stone religious symbolism. Southeast Asian Antique. Date — unknown.

Swimming Pool: At each corner of the pool a Chinoiserie baby in carved Istrian stone. Italian (Vicenza) copies of 18th-Century. Specially commissioned by Mrs. Phillips.

Swimming Pool and Green Room: Perhaps the loveliest of the statues — The Four Seasons. Almost life-size nymphs in carved Istrian stone. Copies of 18th-Century Baroque, executed for Heronwood by a contemporary Italian sculptor in Vicenza. The plinths designed by Mrs. Phillips and executed by Hanback Brothers of Warrenton.

The House: On the terraces, obelisks and ball finials and along the roof balustrade, stylized pineapples. Cast stone — modern. The designs by Jane Wasey, a New York sculptress. Execution by Hanback Brothers.

The American Boxwood Society

Spring Meeting of Officers and Directors

A meeting of the officers and directors of The American Boxwood Society was convened at 11 a.h., Saturday, March 4, 1972 at Heronwood, Uppererville, Virginia.

Present: Rear Admiral Neill Phillips

Mrs. Edgar M. Whiting
Mrs. Andrew C. Kirby
Dr. Henry T. Skinner
Dr. W. Ralph Singleton
Mr. Alden Eaton
Professor A. S. Beecher
Mr. Alan C. Casper

Also attending as participants were: Dr. R. C. Lambe of V.P.I. and Mr. B.F.D. Runk of the University of Virginia. Our guests included Mrs. Singleton, Mrs. Eaton, Mrs. Beecher, Mrs. Skinner and Mrs. Caspar. Mrs. Ruby P. Dove, Recorder, kept the transcript of the meeting and the President presided.

The minutes of the November 4, 1971 autumn meeting of the officers and directors were approved as published in the January 1972 issue of the BULLETIN.

Mrs. Kirby presented the Secretary-Treasurer's report (appended herewith) which was approved with thanks. The President stated the second installment of \$1,500 is due the University of Maryland in April 1972 for support of the graduate student working on the Boxwood Nutrition Project; and Mrs. Kirby was requested to mail the check. Mrs. Kirby announced that the membership of the Society is over 600, with 75 new members being added so far this year.

A discussion regarding the sale of back issues of THE BOXWOOD BULLETIN followed. It was agreed that Mrs. Kirby should continue the sale of complete volumes of the BULLETIN, upon request for same, until she was down to 5 complete sets; these 5 sets to be retained permanently by the Society. A motion was made by Dr. Singleton, seconded by Mr. Beecher and unanimously passed that the Secretary-Treasurer make a charge of \$5.00 for each complete volume she sells.

The President stated the Society is required by law to submit the following tax reports: (1) To the State Corporation Commission of Virginia, due between January 1st and March 1st, a report of its existence; and (2) To Internal Revenue Service Form 990-A, required from organizations exempt from income tax due yearly before September 1st.

The Chairman discussed the recent Executive Order signed by President Nixon February 8th, forbidding the use of dangerous insecticides in Federally-owned lands. It was agreed that Neill Phillips, as President of the American Boxwood Society, write a letter endorsing this action of the President.

Mrs. Whiting, Editor, presented her report stating the BULLETIN as a whole is moving along nicely and reiterated the need for material for publication. She called attention to the fact that Dr. Wageneck needs financial help with expenses in carrying on his registration work of boxwood cultivars. It was agreed, and Mrs. Kirby authorized, to send him \$200 for expenses in carrying on the registration work. Mrs. Whiting's report was accepted with thanks and deep appreciation.

Mr. Runk stated there was nothing new to report on Blandy Experimental Farm. Mr. Caspar said the plants apparently have come through the winter satisfactorily.

The next order of business was plans for the Annual Meeting, to be held Wednesday, May 10th. After a discussion of the possibility of having the meeting in Charlottesville at the University of Virginia this spring, it was decided to consider Charlottesville as the location for the 1973 Annual Meeting. Mr. Runk agreed to take up this matter with the University. A vote on three other locations (Blandy, Oatlands, or the National Arboretum) was taken and it was agreed to hold the meeting at Blandy Experimental Farm, Boyce, Va. The date to be May 10, 1972. (*See additional notice in April BULLETIN.*)

Admiral Phillips stated there would be only one director's term expiring in 1972 — i.e., Dr. W. R. Singleton's. The officers are elected for 1 year and must be reelected each year. Therefore, a Nominating Committee was appointed to present a slate of officers and one director at the May 10 Annual Meeting. The Committee to consist of: Mr. Woodson P. Houghton, Chairman; Mrs. Edgar M. Whiting and Mr. Alden Eaton.

Suggestions for program speakers at the Annual Meeting were presented. Dr. Baldwin was appointed program chairman. Dr. Skinner, Mr. Eaton and Mrs. Whiting were to invite the suggested speakers, and let the President and Dr. Baldwin know the results. Mr. Alan Caspar will make the plans for the use of Blandy Farm to accommodate the meeting.

Adjourned for lunch at 12:15 p.m.

The meeting reconvened at 2:00 p.m.

Dr. Skinner, reporting on the Nutrition Project at the University of Maryland, stated it is progressing satisfactorily, and that a more detailed report would be made by Dr. Starke and Mr. Hefley, to the membership at the Annual Meeting.

Dr. R. C. Lambe of V.P.I. made an excellent presentation of the proposed Research Project to be set up at V.P.I. for a graduate student on the "Cause of Boxwood Decline" with financial assistance from the American Boxwood Society. (*Full report in April Issue of BULLETIN.*)

In this connection there was a discussion re-the recent letter from Mr. A. G. Smith, Jr., Professor Emeritus of Horticulture, V.P.I. in reply to the data presented by Dr. Lambe regarding boxwood diseases that was printed in the January 1972 BULLETIN. It was decided that the letter from Mr. Smith, along with the proposal for the Research Project at V.P.I. presented by Dr. Lambe, be printed in the April issue of the BULLETIN for the complete information of the membership. The Chairman requested Dr. Lambe to have a talk with Mr. Smith at earliest convenience.

The President called for a discussion on the value and technical aspects of the project presented by Dr. Lambe.

Dr. Skinner — Well thought-out approach to a worthwhile project.

Dr. Beecher — Agrees

Dr. Singleton — Does not think ABS should have to do it alone — would hope it could be funded some way, with ABS providing some help.

Dr. Lambe — Will investigate other State money, or outside Federal money.

A motion was made by Mr. Caspar, seconded by Dr. Skinner and unanimously approved, that the Directors recommend the acceptance of this proposed Research Project at V.P.I. to the membership meeting in May 1972, subject to the prospect of raising the money.

The President discussed the feasibility of preparing a brochure containing articles or items (previously published in the Bulletin) relating to boxwood care and cultivation. This brochure to be for sale to members and to the public. Mrs. Whiting and Admiral Phillips to go through Bulletins sometime after the Annual Meeting to determine if this would be practicable.

The President suggested that at some future date it might be advantageous to republish in the Bulletin the Society's Constitution (with amendments); also an up-to-date Index and Membership List.

At the suggestion of Dr. Singleton, the officers and directors will hold a short, informal meeting at 9:00 a.m., May 10th before the Annual Meeting convenes to coordinate their views.

The meeting adjourned at 3:30 p.m.

Respectfully submitted,
(Mrs.) Ruby P. Dove, Recorder

THE AMERICAN BOXWOOD SOCIETY

Officers and Directors' Meeting at Heronwood,
March 4, 1972

Treasurer's Report

Checking Account balance May 1, 1971	\$2,509.84
<i>Receipts:</i>	
Members	3,123.00
Extra Bulletins and Lists	112.33
Interest on CD #1025	50.00
Deposits 5/1/71 to 4/1/72	3,285.33
	5,795.17

Disbursements:

The Boxwood Bulletin Printing (April '71— January 1972)	1,120.00
Copyrights (4)	24.00
Mailing: plates, postage, manila envelopes, etc.	98.18
Mailing: plates, Cuts, photos, etc.	351.75
	1,593.93
Secretarial Services	88.34
Office Expenses	
Stamps, postage, envelopes, directory	56.01
Refund to J. Kemp, overpayment	1.50
1971 Contribution to University of Maryland	700.00

Disbursements May 1, 1971 to March 1, 1972	2,439.78
Checking balance 3/1/72	3,355.39
Saving, C.D. #1025	2,000.00
Saving Account (Interest from 4/1/71 to 3/1/72 is not included in this report*)	907.05

Total Cash Assets, March 1, 1972 \$6,262.44

All accounts are in the Bank of Clarke County,
Berryville, Va.

THE MAIL BOX

Blacksburg, Virginia 24060
February 29, 1972

Dear Mrs. Whiting:

The members of the Boxwood Society are being unnecessarily alarmed by the report of Dr. R. C. Lambe, which was published in the Boxwood Bulletin for January 1972. I feel confident that Dr. Lambe will want to modify the statements in his report after he has had a longer experience with the two fungi in their relations to boxwood.

A careful study of *Verticillium* will show that the fungus can infect the stems of boxwood only after they have been damaged in some way, such as by freezing or by mechanical means. And, furthermore, if the infected stems are left on the plants, the fungus will not spread to any uninjured stems. I do not believe that Dr. Lambe can make this fungus grow on boxwood stems unless they have been injured as stated above.

Verticillium stem "blight" on boxwood is known in some parts of Europe as Blue Stem, because of the blue or purple spot which appears at the point of infection. The terminal leaves then turn to shades of yellow or reddish brown. On dwarf boxwood, such infections usually occur about 4 to 5 inches from the top; while on tree box they may be 5 to 8 inches below the top.

For the sake of appearances, the damaged twigs should be removed. However, if they are left on the plants, no additional harm to the boxwood will occur.

The condition described above can readily be developed by applying manure or nitrogenous fertilizers to boxwood in midsummer. This will cause a late growth of tender twigs, which will either be killed (turn white) by freezing temperatures or be injured sufficiently to provide favorable spots for the growth of *Verticillium*.

Phytophthora is another common fungus, which like *Verticillium*, enters damaged tissues where moisture is present. In 1961, Dr. Frank A. Haasis of the North Carolina State University, reported *Phytophthora parasitica* as a disease of boxwood. He stated, "Boxwood plants infected with *P. parasitica* often develop symptoms that are indistinguishable from symptoms of wilt and canker . . . caused by freezing injury . . .".

Phytophthora will grow on old oak lumber when it is in a damp place, just as it will attack the roots of apple trees and other plants after they have been damaged by mice or by other means.

From about 1920 until 1935, many owners of boxwood thought that much of the valuable box was doomed to destruction by canker. A widely distributed U. S. D. A. bulletin contained this statement: "Fungi known as *Volutella buxi* and *Verticillium buxi*, which may be phases of the same life cycle, are characteristically associated with wilt and canker in boxwood, but their significance as primary parasites is not fully established." It soon became apparent that canker was the result, usually of improper cultural practices, and not the primary cause of the trouble.

Little thought was given to canker after 1940 when the nematode scare gripped the attention of all who were interested in boxwood. For the next 20 years boxwood literature was filled with references to the nematode problem. During these two decades many valuable boxwood plants were killed in Virginia and elsewhere by various nematode "treatments."

Since 1965 less has been written about nematode injury to boxwood. That is because it has been demonstrated that, in various locations, healthy and beautiful boxwood plants are living very comfortably with at least five species of nematodes, without anything being done to kill the nematodes.

Dr. Lambe stated that the fungi, which were mentioned in his report for the Boxwood Bulletin, were found on cuttings that had been rooted under a mist. That is not the best way to propagate boxwood. It cannot stand wet feet at any stage of its life. Good cuttings will root 100 percent in moist sand in a shaded spot. I have rooted numerous lots in the shade of our garage. Among these were several groups, which came to me as "diseased" specimens for examination. Some of the plants from these "diseased" cuttings are growing in our yard where they have been for the past 20 to 30 years.

This year there will be many frozen stems, not only on boxwood but on woody plants in general. The warm spells of weather in fall and winter were followed suddenly by very low temperatures. Much of the late, tender growth has been frozen. *Verticillium* will find many places to grow in 1972.

I know that some people derive the greatest pleasure from their gardens when they feel that they must nurse their plants to protect them from something, whether it be real or imagined. Their interest seems to lag unless they can believe that medicine of some sort is needed to cure something in the garden. If there are any members of the Boxwood Society like those, who really enjoy their miseries, they will no doubt welcome Dr. Lambe's alarming note.

Cordially yours,
A. G. Smith, Jr.

VPI Associate Professor of Horticulture, Emeritus.

A Proposal

to

The American Boxwood Society

For the support of research at the Virginia Polytechnic Institute and State University, Blacksburg, Virginia on the etiology of boxwood root rot and decline.

It is proposed that the American Boxwood Society make a grant in the amount of \$10,000 to Virginia Polytechnic Institute and State University to fund a stipend and support for a graduate student studying for the Ph.D. degree in Plant Pathology for a period of two years in the Department of Plant Pathology and Physiology, VPI and SU, Blacksburg, Virginia as described in the following proposal.

TITLE: Etiology of boxwood root rot and decline.

DATE OF START: July 1, 1972.

DURATION: Two years.

ESTIMATED COST: \$10,000 as follows:

First year: Stipend -----	\$ 4,260
Second year stipend -----	4,440
Total stipend -----	8,700
Travel expenses -----	1,300
Total -----	\$10,000

SOURCES OF ADDITIONAL SUPPORT

Virginia Polytechnic Institute and State University (Salary of faculty advisor, use of laboratory and greenhouse facilities, secretarial help, shared travel costs, overhead costs etc.)
(Annually \$15,000) \$30,000

Based on an estimated cost of \$20,000 per year to educate a graduate student in plant pathology.

PERSONNEL AND FACILITIES:

The personnel and facilities of the Department of Plant Pathology and Physiology, VPI and SU will be available for these investigations. It is proposed that the resident advisor to graduate student will be Dr. W. H. Wills, Professor of Plant Pathology, whose field of interest is ecology of root disease. Dr. R. C. Lambe, Extension Specialist in Plant Pathology works regularly with disease of ornamentals and will act as a consultant and serve on the student's committee. Other scientists in the department in related fields include, Dr. H. B. Couch, Head of Department, Ecology of Root Disease, Dr. G. J. Griffin, Associate Professor of Plant Pathology, Ecology

Editor's note: Professor Smith's letter was received some time after Dr. Lambe's article, but we are printing it first because it is in reference to Dr. Lambe's discussion at the autumn meeting of ABS Directors, of the notable increase in boxwood fungus diseases; the summary of his remarks was printed in the January 1972 Bulletin, p. 36. Professor Smith had not, at his time of writing, seen Dr. Lambe's article "A Proposal," which follows this; nor had Dr. Lambe seen Professor Smith's letter. Neither one is directly in answer to the other.

One of the principal reasons for the existence of the Bulletin is that it serves as a forum for exchanges of experience and expression of personal views, often controversial — possibly the more valuable for that very reason. We urge all ABS members to study both these articles with care, and to come to the Annual Meeting with informed minds.

of Root Disease, Dr. L. D. Moore, Associate Professor of Plant Pathology, Physiology of Disease, Dr. L. I. Miller, Professor of Plant Pathology, Dr. W. W. Osborne, Professor of Plant Pathology and Dr. J. A. Fox, Assistant Professor of Plant Pathology, the latter three nematologists. The department consists of 24 plant pathologists and plant physiologists with a broad range of capabilities in the plant sciences and with an especially strong orientation toward root diseases.

Laboratory, greenhouse, library and field plot facilities are available as needed for all ordinary microbiological and plant pathological studies. Special facilities for plant gnotobiological studies are a feature of the department. Ancillary services in statistics, biochemistry and computing services are available on campus.

JUSTIFICATION:

Lambe (5) has presented a brief assessment of the problem in Virginia, but the available information on boxwood decline is very limited. Andrus (1) reported that *Verticillium buxi* (Link) Sacc. which

he regarded as a growth from of *Volutella buxi* (Corda) Berk. appeared to be the "immediate cause" of wilting and death of some plants and parts of plants in Washington, D. C. He also identified *Phytophthora parasitica* Dastur from the roots of diseased plants and from the root crown of a recently dead boxwood. He considered *P. parasitica* to be an "important primary agent in the decline of box plants." Harrar (4) studied "blue rot" of *Buxus* in Virginia for several years and invariably associated *Verticillium* with this condition. He isolated seven strains of the *Verticillium* and found three to cause infection readily and four unable to attack the host tissues. Weiss and Baumhofer (6) questioned the primary role of *Verticillium* (*Volutella*) in the wilt and canker disease of boxwood and related the symptoms to freezing injury as the predominant factor. More recently Haasis (3) demonstrated the pathogenic role of *P. parasitica* as the primary cause of root rot, canker and blight of boxwood having symptoms similar to those described for "wilt and canker." He inoculated boxwood cuttings with five isolates of *P. parasitica* and inoculated plants with combinations of *P. parasitica* and the root-knot nematode, *Meloidogyne javanica*. He found that colonization of the roots by the fungus inhibited colonization by the nematode and hence the nematode did not increase root-rot severity. Bell and Haasis (2) undertook an extensive investigation of the etiology and epiphytology of the root-rot, stem necrosis and foliage blight of boxwood caused by *P. parasitica* in North Carolina. They concluded that the symptoms on boxwood could be produced by *P. parasitica* and the foliage blighting was induced by dessication in intense sunlight. Although they apparently did not study the role of any other fungi, they reasoned that *Volutella* and *Trichoderma* rather than *Phytophthora* were found in necrotic foliage because *Phytophthora* was a poor competitor with the faster-growing fungi.

At VPI and SU *Phytophthora* has been isolated from diseased boxwood roots and successfully reinoculated in plants in the greenhouse. *Verticillium* has been isolated from discolored vascular tissue of diseased box plants from the base of the stem to the smallest twigs. Treatment of soil around plants with fumigants to control nematodes has had beneficial results in controlling the condition. Considering the results of Harrar (4) in inoculating with *Verticillium* in Virginia and the evident success associated with nematode control, it appears not unreasonable that the present boxwood decline problem may be a root disease complex with several interacting factors in the cause. This is indeed, an expected situation when soil-borne pathogens are involved in root disease.

Before rational, non-empirical control methods can be instituted it is necessary to develop a clearer picture of the etiology of the disease. It seems quite clear that *P. parasitica* is a primary pathogen under some conditions at least. Can *Verticillium* become a pathogen in the absence of *P. parasitica*? This has

not been proven or disproven although Harrar's results (4) are suggestive. Can nematode injury or colonization provide entrance for *Verticillium* while inhibiting *Phytophthora*? This question has not even been asked. Is *Phytophthora* a "normal" inhabitant of small roots, becoming aggressive under unknown circumstances? How long does it take for *Phytophthora* to produce enough damage for symptoms to appear? Is the etiology of boxwood decline different in different areas of Virginia and in different soils? These and other questions need to be answered before success in control can be predicted.

OBJECTIVES:

The study will be aimed at determining the primary and secondary etiologic agents of boxwood root rot and decline so that control measure specific for the problem can be selected.

Specific objectives will be: 1) to determine the extent of the problem in Virginia; 2) to determine what microorganisms are associated with the disease in different geographical areas of the state; 3) to determine the extent of root involvement by *P. parasitica* needed to produce symptoms in nature; and 4) determine the relative roles of *P. parasitica* and *V. buxi* alone and in combination toward disease development in boxwood.

Fulfillment of these objectives would provide information necessary to practical control and provide the techniques needed for making a survey of existing cultivars and varieties for resistance to boxwood decline. Perhaps of equal importance to boxwood growers would be the training of a young pathologist familiar with and sensitive to the needs of boxwood owners.

PROCEDURE:

First year.

A survey of occurrence of boxwood decline in Virginia will be conducted in the several geographic areas of the state. The investigator will accompany Dr. Lambe on his visits to nurseries and plantings during the spring and summer of 1972 and make special trips as required to collect specimens for culturing and identification of pathogens with special attention to *Phytophthora* and *Verticillium*. Data will be collected on soil type, disease incidence, severity etc.

A suitable nursery or planting will be located where the disease is a problem and where plants will be available for sampling as needed. From these plantings roots of diseased and symptomless plants will be sampled and cultured to determine the extent of root degradation necessary for symptom expression in the tops of the plants. (It is hoped to be able to make a follow-up study of this phase over a period of several years to determine rate of coloni-

zation of roots by *P. parasitica*.) These data will be useful in determining the need for preventive treatment as apposed to therapeutic treatment. At this location plots could be established to study the rate of recolonization of treated soil by the pathogen(s) if the study can be continued beyond the two years of the proposal.

During this first year cuttings would be established in Blacksburg or Chatham for inoculation studies the second year.

Second year.

On the basis of the first year's work, established cuttings will be inoculated with root-rot pathogens, presumably *P. parasitica* and *V. buxi*, alone and in combination. Factors to be varied in these inoculation studies would include 1) rooting medium 2) soil pH 3) damaged versus uninjured roots and 4) nutrition or fertilizer application. Other species of *Phytophthora* or other isolates of *P. parasitica* from other hosts should be used in the inoculation studies.

The data from the proposed studies should provide a sound foundation for understanding the whole problem of boxwood decline in Virginia and for further efforts of control. Experiments conducted would need to be repeated for confirmation of results. During all phases of this study, close liaison and cooperation will be maintained with Dr. Lambe's ongoing program and studies in control of diseases of ornamentals.

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The American Boxwood Society

NEW MEMBERS

(Added since January 1972)

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Warrell, J. E., 752 W. South Street, Carlisle, Pa.
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Wolff, Stephen, 3633 Arkansas Avenue, St. Louis, Mo.

The name of Mr. E. Bradford Clements of Ontario, Canada, was inadvertently omitted from the list of Contributing Members that appeared in the January 1972 issue of The Boxwood Bulletin, p. 46. Mr. Clements is a Contributing Member in more senses than one, as he has given us articles on the successful culture of boxwood in temperatures as low as -20° F., which are helpful to many growers in the areas far south of Canada. The Bulletin regrets and apologizes for its error.

How to Grow Boxwood in the Midwest

MARY A. GAMBLE

Boxwood has been growing successfully for many St. Louis gardens, but there are even more local gardens denied the beauty of this historic plant because their owners share the frequently expressed opinion that "you can't grow boxwood here."

This simply isn't so. Boxwood can be grown with relative ease in the St. Louis and adjacent midwestern areas if the grower respects these conditions: chooses his *Buxus* from the hardier varieties, preferably those already tested here to avoid undue disappointment; chooses the proper location on his grounds; prepares the soil and sets the plants properly; gives the plants the minimum care needed to insure survival and growth.

St. Louis is in a climatic zone with the coldest average temperature at which *Buxus sempervirens* generally can be grown successfully. But, interestingly, it is not cold which is boxwood's chief winter enemy; there are numerous instances of its having lived through temperatures of 20 below zero Fahrenheit. It is the winter sun, the extreme fluctuations of temperature experienced often in a matter of hours in our chancy climate, and the winter winds which blow straight across to us from the Great Plains that do the damage. It is therefore doubly important for St. Louisans to pick the right spots in their gardens and grounds for their boxwood plantings. Thus the choice of the right location is the first challenge to growing boxwood in the Midwest.

What is a right location? First, it must have good drainage. Every other requirement can be met, but if a *Buxus* has to stand with its roots in water it will die. So, pick a well-drained spot. If there's a question in the gardener's mind, he should check after a rain to see if water stands in the selected spot for any appreciable time; if so, pick another.

With few exceptions, boxwood's next requirement is partial shade. A good many *Buxus* will grow in full sun but they will not thrive. But neither do they like full shade. A boxwood plant will make a more vigorous growth if it has sunlight for at least a portion of the day. If possible, it should get dappled shade and the morning sun.

Next, avoid full, open exposure. Above all, avoid the unbroken force of the southwest wind which is hot and dry in summer, cold in winter, and bad for boxwood and many other plants at any time of year.

A wall, a woods, a slope, a hedge, a building can serve as protection from prevailing winter winds; but make sure the protective wall or building does not reflect damaging heat or retain excessive moisture. And if the boxwood is to be placed as a foundation planting, make sure it is well out from under the roof overhang where rain water could pour on it and snow or ice fall on it.

Boxwood, with its shallow, matted root system, will not do well too near such shallow-rooted, thirsty trees as soft maples; it can be planted near, or in the shade of oaks and other deep-rooted trees. A boxwood growing in the shelter of a high-pruned oak seems to have found its habitat.

So let the gardener survey his grounds, eyeing them realistically from the boxwood point of view. And remembering that, if exactly the right spot or conditions can't be found, "something usually can be done", to quote one of the late Dr. Edgar Anderson's frequent sayings.

Boxwood in its natural ranges or in a completely hospitable climate, appears not to be fussy about soil or its pH. But here in the Midwest, proper soil preparation is vital to the healthy, vigorous growth which is the plant's best insurance against all natural problems. The story of *Agram* illustrates the point. This *Buxus sempervirens*, which Dr. Anderson considered the most beautiful and distinctive of his Balkan collection, was placed in the Garden's Arboretum at Gray Summit on a downward slope in a relatively open area protected by woods on one side and the rise of the slope on the other. The first *Agram* (named for a town in Yugoslavia) died to the ground in a severe cold spell in 1950. The present *Agram*, a cutting from the first, was planted in almost the same spot. When Dr. Anderson read my account in the original draft of this paper, he noted that the plant's loss occurred" in the absence of proper soil preparation due to lack of funds."

The pH range accepted by a strong, healthy *Buxus* planted in friable soil rich in humus is broad. One authority gives it as 5.5 to 7.4. Dr. Frederick G. Meyer and Mr. Edgar Denison in their 1957 *Missouri Botanical Garden Bulletin, Broad-Leaved Evergreens for the Central Midwest* (Vol. XLV, No. 1) recommend for *Buxus sempervirens* a slightly alkaline soil -pH range 7.0-8.0 — with an occasional sprinkling of agricultural lime to maintain the alkalinity. For *Buxus microphylla* they suggest a soil with 50% organic content and a pH range of 6.0-8.0.

Mr. Louis G. Brenner, formerly of the Missouri Botanical Garden staff and now Superintendent of Parks in Webster Groves, Mo., who has had exten-

sive and extended experience in planting boxwood gives us the following two-part directions for proper soil preparation for *Buxus*: first, for those homeowners who have reasonably good soil with good tilth; and second, for those who live in new bulldozed subdivisions where they must develop the soil from scratch.

After making sure the drainage is good, all the first group has to do is dig a hole the depth of the ball (if a boxwood plant is more than 15 in. high Mr. Brenner advises moving it with a ball) and somewhat wider than the plant so there will be room for new feeder roots to expand easily. The bottom of the ball should rest on excavated soil (never on fertilizer) and the ground level of the ball should be even with the soil around it (lay a yardstick across ball and surrounding area to check). In moving a very large plant it is a safeguard to let the filled soil settle before planting to avoid sinking of the plant below ground level.

Take the soil removed from the hole and work into it generous proportions of compost or peat moss (brown or black), add sand, and use this to fill in around ball, being careful not to mound it. (Do not use any commercial fertilizer in this mixture.) Tamp this soil down lightly around ball until level with it, then add a 1-inch mulch of organic matter such as peat moss, straw, etc. Now water the planting area lavishly, letting the water flow gently from the hose so there is no washing. Be sure the area is soaked

but no water is standing. In the case of a balled, nursery-grown plant, do not cut back at this time. However, in the case of a field-grown plant which has not been root-pruned it is advisable to cut back some top growth to compensate for damage down to the root system in transplanting.

The best time to move a mature, balled plant in our area is late March when the soil can be handled. Fall moves are ticklish here because our chancy climate makes it difficult then to give the plant enough but not too much water. Smaller, potted plants such as those the gardener has raised from cuttings should be set out in mid-April.

New subdivision home owners have a harder job. After checking drainage, dig a hold 18 to 20 in. deep and 2 to 3 times the width of ball. Back fill this hole with a good soil mixture made up of equal parts organic matter such as compost or peat, sand and garden soil (use that you dug out if it's not too heavy) Let it settle so there will be no danger of its sinking with the plant until the surface roots are below ground level and thus in danger of drowning. Set in the plant, fill in around ball, mulch and water as before.

Large types such as *Buxus sempervirens* Ste. Genevieve should be allowed a space 5 ft. in diameter for specimen plantings. If you are planning a hedge of *B. m. koreana* with a permanent height of 1 to 2 ft. in mind place the plants 12 to 18 in. apart.

This stately *Buxus* grows in the northwest corner of the Linnaean Garden. It tops the ten foot stone wall, illustrating why a space of five feet in diameter must be allowed for specimen plantings. This *Buxus sempervirens* is another representative of the late Dr. Edgar Anderson's Balkan strain.

Photographer, Mary A. Gamble



For the first few winters protect these plants by placing evergreen boughs between them; after they meet, each plant protects its neighbors.

Boxwood, for all its elegance, is a low maintenance plant. Its care begins with a prohibition: do not cultivate. Its matted, shallow root system is injured easily by a tool: rather, keep the plant mulched with organic matter to a depth of about 1 in.; renew as needed, and make sure it is in good array for winter.

Do not feed boxwood the first year the plant is set out. Instead, feed it the second year and every few years thereafter, or whenever its appearance suggests the need. We offer three suggestions from three good gardeners. Mr. Brenner suggests cotton seed meal, bone meal and small amounts of chileated iron and ferrous sulphate. Mr. Charles Krehrer, professional gardener at Shaw's Garden, recommends a mixture of 1/3 bone meal and 2/3 cotton seed meal. Mr. Clarence Barbre, local nurseryman and member of the board of the National Arboretum, had this to say: "It might be well to remind Boxwood Study Group members to apply fertilizer 10-6-4 at the rate of 1 to 2 lbs. per 100 sq. ft. just after the first freeze or in early spring." And he added, "Boxwood will grow rapidly if well fertilized."

Fertilizer should not be applied during boxwood's two annual growth periods. These occur in April and early May and again in September and early October. Fertilizer is best applied in very early spring before the rush of new growth begins. Generally speaking, the growth of boxwood is relatively slow; it should be steady and encouraged only in spring, never in fall.

Watering of boxwood should be repeated through the season, washing off foliage as well as soaking the soil. Frequent, light waterings are not good; soaking is. In the fall, don't water enough to stimulate growth; but just before winter sets in and the ground freezes, soak thoroughly. This supplies the moisture lost by transpiration and which cannot be replaced when the ground is frozen. This late watering is the single greatest step in protecting the plant against winter-burn. For a plant's first winter it may also be a good idea to spray the foliage with an anti-dessicant such as foligard or wilt-proof, says Mr. Robert Dingwall, chief horticulturist at Shaw's Garden. Do not prune or clip your new boxwood in fall or winter as this stimulates leaf growth.

Give the newly-transplanted plants protection from the sun during their first winter. Christmas tree boughs can be laid around and over them. Snow should be brushed from mature box if possible, to lessen breakage or injury to branches or twigs.

The pruning of boxwood is both hygienic and artistic; it is as important to the health of the plant as to its appearance. In its simplest form, when the gardener is working to preserve or accentuate the

natural shape of the plant, pruning is a minor garden art; when it takes the form of topiary in which the plant is forced to grow in unnatural shapes, it requires mechanical, artistic and gardening skills of major proportions, plus infinite patience.

"Boxwood should be pruned by eye as well as by hand," says Mr. Dingwall. Pruning, he points out, is selective; shearing is cutting flat, like giving a hair cut. Pruning is done to emphasize and maintain the shape of a plant, to change its shape when desired, to take out dead wood, to open up the plant to air and light, to control disease and sucker growth, to rejuvenate. With selective pruning, says Dingwall, a gardener over a period of three years can change the size and shape of a boxwood plant.

The shaping of a boxwood begins with soft-pinch ing the top and side branches of a young plant to encourage low bushing. The pruner's first objective is to force the plant to bunch at the bottom; after that has been accomplished its height can be allowed to develop. The plant should be flat on the bottom; even when you are shaping a ball or pruning a globular-shaped plant, the bottom should be left flat so sunlight reaches all layers. This is the same principle as pruning a hedge with batter, the term which gardeners have borrowed from bricklayers to describe the slight inward slope towards center top. In bricklaying the batter gives stability; in hedge-shearing it permits light to flow down the outer slope of the plant from top to bottom.

With a large or mature boxwood pruning begins with cutting out all dead wood from the center of the plant, then snipping selectively down the slope of the plant, being careful not to interfere with its natural shape. When necessary the branches can be tied loosely (old nylon stockings are ideal for this purpose) to keep them from flopping and for protection against wind and water damage.

"Boxwood pruning," says Mr. Krehrer, "is best done when the new spring growth is about 2 in. long and is hardening up, usually in late April or early May. For specimen plants shorten for natural shape; prune on present or previous year's growth; and don't give the plant a crew cut!"

The height of a boxwood can be controlled by shortening branches in its upper regions. This also lets in light which helps develop a strong framework against damage from snow, water, wind. Just clipping a boxwood, as one does privet, tends to weaken the plant. Where the center growth of a boxwood is sparse it can be cut back to encourage new growth. A boxwood can be pruned severely and will recuperate as the plant has great regenerative powers. But when drastic pruning has been practiced, the plant should be fed. Normally, pruning is not drastic, nor does it need to be frequent. "About every two years should do the job," says Charles Krehrer.

Mr. Robert Dingwall, Chief Horticulturist at the Garden demonstrates pruning techniques for the Boxwood Study Group of the St. Louis Herb Society. This plant is one of three *Buxus sempervirens* (Balkan strain) transplanted in spring 1970 from the Arboretum to the formal herb garden maintained at the south side of Tower Grove House by the Herb Society.

Photographer, Claude Johnston



Boxwood hedges, on the other hand, should be pruned every year to maintain desired height and width. Neglected too long, the hedge can never be brought back below a certain point because it would be necessary to cut too deep into hard wood. Clip hedges in early spring before new growth begins to flop, lean or tip. "If you wait until it tips," says Mr. Krehrer, who has been pruning boxwood hedges for many years, "you will have a slightly uneven effect because no shears can then catch every tip."

As you prune and sanitize your boxwood make sure no ground cover plants have become entangled with the box; keep them well away from the base of the plant. Each spring remove foreign matter such as dead leaves, etc., from interior of plants and police ground area lightly.

Boxwood bears its insignificant pale greenish flowers in early spring, and fruits in autumn. If you

want to try propagation from seed, gather the seeds the moment the capsules appear ready to open; otherwise you will share Dr. Anderson's Balkan experience of searching for them on hands and knees. Once gathered, sow seeds in a porous soil mixture. In about three years you should reap a harvest of 6 in. plants, no two alike.

By far the more usual method of boxwood propagation is asexual or vegetative, by cuttings through which we get offspring the spittin' image of the parent plant. Box cuttings root readily and when made at an advantageous time, rather quickly. Floriculturist Paul A. Kohl says they are best made in late June or early July when the plants are over their first rush of spring growth and the wood is beginning to harden. Made earlier, the wood is too soft and sappy; later, it is too hard. Mr. Martin R. Bagby, for many years propagator at the Missouri Botanical Garden Arboretum, says he has best re-

sults from cuttings made in August. However, if active growth periods are avoided and semi-hard wood selected, cuttings can be made successfully virtually the year 'round.

Make cuttings of dwarf types about 6 in. long, of shrub and tree types about 8 in. Here's a hint from Mr. Kohl: make them of a branched rather than a single sprig. This gives a head start on a nice, bushy little plant. After making cuttings, strip 1/2 to 1/3 of bottom leaves, dip cut end into hormoden 3 or root-tone 10 and insert into moist rooting medium. Keep moist and wait until a strong root structure has developed; then pot, using a regular potting soil and 2-1/2 to 4 in. pot.

The rooting medium may be straight sand, straight perlite, a half-and-half mixture of sand with perlite, vermiculite, or peat moss; or it may be a composty spot in a shaded, sheltered area, or the north side of a wall where sunlight never strikes. For this latter Mr. Bagby prescribes what he calls an easy outdoor method for fall cuttings. Dig out a strip to a depth of 8 to 10 in. (or sink perforated box into ground to that depth); put layer of gravel in bottom of hole or box, fill with mixture of equal parts of brown peat and sand; tamp and soak; insert cuttings; soak again; protect with a few leaves and forget until spring. Many gardeners report good results with outdoor rooting. Certainly it is more carefree than setting up a home-made lippigator indoors. Needless to say, the best plants result from cuttings from healthy, vigorous, attractive parent stock; like mother, like daughter. If possible, young boxwood plants should spend their first winter indoors. They can be set out in their second spring, either in a nursery bed or where they are to grow.

One authority notes that most boxwood troubles are man made. A healthy boxwood, properly planted in the right setting, almost takes care of itself. Boxwood's chief natural problem in the St. Louis area is the winterkill which occurs in the bright warm sunshine of late winter and early spring. Proper placing, planting and care will keep loss to a minimum.

This writer came late to an appreciation of boxwood. When I said as much to Clarence Barbre he replied, "Waste no time on vain regrets," and handed me a beautiful little *Buxus*, one of Dr. Anderson's notable Balkan strain. When my husband and I took up gardening as a joyous and challenging avocation some 25 years ago, we listened when other gardeners said, "Boxwood is beautiful, but you can't grow it here." But we kept seeing it and finally realized that you can grow it here, if you have the right spot and will take care.

Care is the key. Care in choosing the variety, care in picking the site, care in planting, care in maintenance. There are endless right spots in thousands of handsome St. Louis gardens; and there are many varieties of *Buxus sempervirens* and *Buxus microphylla* that will thrive and lend their beauty, grace and timeless distinction to those gardens whose owners will take the modicum of time to give proper care.

Boxwood belongs historically and esthetically in every beautiful garden where "man's oldest garden ornamental" can be grown. Today, there is yet another reason for its presence; in our increasingly rootless society it is somehow reassuring to have this ever-green symbol of eternity growing in one's garden.

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*Mrs. Gamble is chairman of the Boxwood Study Group of the St. Louis Herb Society. The group presently is testing many varieties of *Buxus* for hardiness in the St. Louis area. Those proved hardy will be included in the Edgar Anderson Boxwood Memorial Garden.*

To remind you just once more:

The American Boxwood Society

Twelfth Annual Meeting, May 10th, 1972

At Blandy Experimental Farm, near Boyce, Virginia

THE AMERICAN BOXWOOD SOCIETY

INFORMATION

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Regular membership dues of The American Boxwood Society are now \$5.00. This includes a subscription to *The Boxwood Bulletin*, to the publication of which the Society allots about 2/3 of the money received from dues.

Non-member subscriptions are for groups and institutions such as botanic gardens, libraries, etc. These are \$5.00 a year, and run by the calendar year.

The Boxwood Society year runs from one Annual Meeting to the next; from May of one year to May of the next year. Those joining the Society at other times are sent all the *Boxwood Bulletin* issues for the current Society year, beginning with the July number. Their dues are then again due and payable in the following May. This was voted by the Society in order to lighten as far as possible the heavy work load of our busy Secretary-Treasurer; who, like all other officers of the Society, is an unpaid volunteer.

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