



The Boxwood Bulletin

A quarterly devoted to Man's oldest garden ornamental



The front walk at Lisburne, the Peebles home in Gloucester County, Virginia, is bordered by *Buxus sempervirens 'Suffruticosa'* six feet tall. See story on Page 5. (Photo: Scot Butler)

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Technical articles, news, history, lore, notes, and photographs concerning boxwood specimens, gardens or plantings are solicited for possible publication in *The Boxwood Bulletin*. Photographs should be suitable for reproduction and fully captioned. Suggestions regarding format and content are welcome. Material should be submitted to:

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Beauty and Utility Lie in the Wood of Boxwood

Mary A. Gamble

Theophrastus, the Greek scholar whose life bridged the fourth and third centuries B. C., probably was the first to write of boxwood, comparing its wood with that of ebony in the closeness of its grain. Theophrastus was a student of Aristotle and succeeded that philosopher as head of the Peripatetic School, which had no campus, but considered the whole of Athens to be its classroom.

Theophrastus specialized in botany. He maintained a small garden in Athens in which he grew and observed not only plants native to the Hellenic region but also exotics brought from distant lands. His treatises on the "History of Plants" and on "Theoretical Botany" established his authority and earned him enduring respect. Today he is called the "Father of Botany."

When Theophrastus compared the grain of boxwood to that of ebony, he highlighted the characteristic which made boxwood valuable to artists and artisans alike. The wood of box is also heavy. A peeled stick placed in a vessel of water does not float, but sinks to the bottom. Boxwood is the only European wood with this quality. Boxwood is resistant to warping, which made it invaluable to the earliest makers of musical and mathematical instruments, where precision is vital. The color of the wood of box differs from ebony as day differs from night; ebony is the blackest of blacks, but boxwood is an elegant off-white, not unlike the ivory keys of an old piano.

These combined qualities led artists and artisans to carve figurines, art objects and such practical items as daggers' hafts and oarlocks from the wood of box. It was also used as an inlay, and ultimately artist-engravers found in it the perfect medium for wood engravings. Their work had a precision and delicacy not found in the wood cuts which were made of softer wood, such as apple.

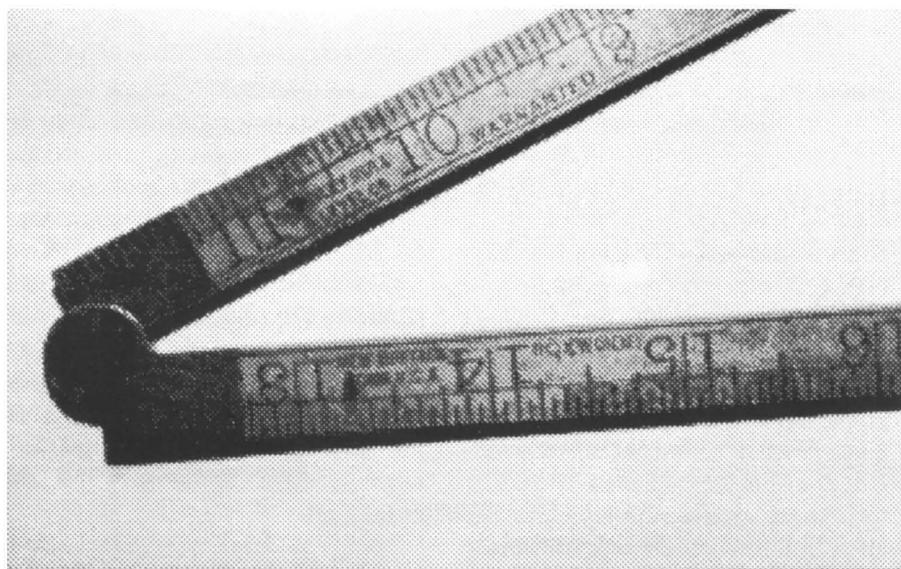
Buxus, the genus of boxwood, comes from the exquisite small boxes in which the ladies of ancient Greece and Rome stored such treasures as cosmetics and jewelry. The boxes were made of boxwood. The Greek word for such a box was *pyxos*; the Latin word was *Buxus*. Boxwood was not uncommon in the Ancient Mediterranean world, but neither was it common. It grew slowly. The supply never exceeded the demand; and the inherent beauty of the evergreen foliage and the dignity of its growth habit made it the aristocrat of the garden space it occupied.

Homer, the Greek poet who lived sometime between 1200 and 850 B.C., sang about it. In his epic poem, The Odyssey he described the garden of the King Alcinous. Ulysses visited it on his leisurely way home from the Trojan war. Homer wrote that in this garden—

large by Greek standards—"ships of myrtle sailed in seas of box."

In the first century A.D., Pliny, the Roman naturalist, described the boxwood in his garden on the slopes of the Apennines near Rome. He describes his banqueting hall as giving "onto a terrace of geometrical figures edged with box. On the slopes below, two rows of box bushes trimmed like animals lead down to a level lawn." Thus boxwood retained its aura of elegance, not only in gardens but also in arts, crafts and commerce.

It was not until the Industrial Revolution began in England with the invention of the steam engine that the larger boxwoods used for arts and crafts were imperiled. Steam changed England's textile production from a cottage industry to industrialized mills. The hard wood of box was ideal for the shuttles of the steam-powered looms. The great



This ruler was found in the tool chest of a German-American civil engineer who practiced his profession in the St. Louis area in the last quarter of the nineteenth and first quarter of the twentieth centuries. It was made by the Stanley Rule & Level Co. of New Britain, Connecticut. If you study the ruler closely (you may need a magnifying glass) you will see the word "BOXWOOD" between the numbers 14 and 15. (Photo: George Penhale)



The horse was carved from boxwood in Hong Kong only a few years ago, but the posture of the horse was determined in the eighteenth century when Chien Lung was emperor, fourth of the Ch'ien dynasty and one of the noblest of the Manchu rulers. When he died, a large group of his soldiers and nine of his favorite horses were entombed with him. The horses are a favorite subject of Chinese sculptors in jade, ivory or other precious material. There are always nine horses, each in a different, traditional position. Beginning sculptors practice on boxwood before venturing to work with the more costly materials. (Photo: Shaw Camera)



The picture is called "Futility." It is a wood engraving in boxwood of a drawing by Ben Shahn. Working with Stefan Martin, Shahn was enabled to release this print through the International Graphic Arts Society. In a release from IGAS we are told that "Wood-engravings are cut with burins on the highly polished end-grain of a very dense and refractory wood—in this case, South American boxwood. Shahn drew the image on the block and Martin engraved it and rubbed each impression by hand. Both artists signed the edition."

plantations of tree boxwoods, such *B. balearica* were prime targets. In a relatively short time, *B. balearica* plantings were gone from the plant's native Balearic Islands and from along the Mediterranean coast to Turkey (where it was called "Turkey box") and on to the Caspian Sea. The English mills were insatiable and boxwood paid the price.

Boxwood is still prized for its qualities, but scarcity and new materials limit its use. The three pictures accompanying this text show how boxwood has kept a tenuous hold in arts and crafts.

Mrs. Gamble began studying boxwood in the 1960s under the direction of the late Dr. Edgar Anderson. She was a founder and the first President of the Boxwood Society of the Midwest.

Mite Damage on Boxwoods

Marcia Stefani, Thomas J. Banko, and Mark A. Coffelt

Mite damage can be rather insidious on boxwoods. It is not always easy to diagnose mite problems, and so improper treatments may be applied for a given problem before one actually realizes just what the trouble is. There are three major species of mites which can affect boxwoods in the eastern United States, and we want to acquaint you with them and with the damage they cause, so you will be able to make informed control decisions. All mites are members of the Class Arachnida, which means that they are not insects but are related to spiders, scorpions and ticks.

The first two species belong to the

family Tetranychidae or the spider mites, so named for the webbing they produce. The last species belongs to the family Eriophyidae or the gall, rust, and blister mites, which are unique among mites because they have only two pairs of legs.

Boxwood spider mites (*Eurytetranychus buxi*) are specific to boxwoods and not known to affect any other hosts. They usually attack common, European and "English boxwood"; Japanese boxwood is less susceptible. All stages of these mites cause feeding damage on both upper and lower leaf surfaces.

Tender, new foliage is particularly sus-

ceptible to attack. These mites apparently inject a toxic saliva into the leaf tissue as they feed, causing small yellow scratch-like marks on the upper leaf surfaces. The adults of these mites are yellowish brown to green in color and have eight legs. Overwintering eggs are a pale yellow color and are slightly flattened. Larvae and nymphs are green. The entire life cycle takes from 18 to 21 days and are at least eight generations produced per year.

Two-spotted spider mites (*Tetranychus urticae*) are not at all fussy about the plants they feed upon and have been reported on close to 200

different host plant species. Not only does their feeding cause tiny chlorotic spots to form, but these mites also spin webbing, much as spiders do, over the plant. With a heavy infestation, the entire boxwood plant may become yellowed or bronzed, or it may be completely killed. These mites are visible to the naked eye, although they may be quite difficult to see without a 10x hand lens. With a lens, you will be able to see the two (occasionally four) characteristic black spots on the back of the nymphs and adults. They range in color from transparent and colorless through amber to yellow or brownish green. These mites may produce numerous generations in any given year. A generation may require as few as five days to mature to the reproductive stage. Hot dry weather favors the most rapid development. Since some stages of the mites' life cycle are more susceptible to pesticides than others, more than one spray application may be necessary to control these pests. In hot weather, the pesticide applications should be spaced at 4- to 5-day intervals, while in cool weather, the interval may be increased to 7 to 10 days.

A third mite which is a pest of boxwood is the eriophyid mite, *Phytoptus canestrinii*. This mite is extremely small (less than 1/100th inch) and is practically impossible to see, even with a 10x hand lens. Under a dissecting microscope, the mites are opaque and colorless; they have a rather slug-like appearance, with only four legs sticking out like little bristles near the head. These mites feed on tender new leaf terminals causing severe leaf distortion and cupping (see photograph). The mites hide within these distorted clusters of leaves, making them particularly difficult to control. The toxins which the mites inject into the leaves as they feed can persist for as long as four to six weeks after the mites have died, prolonging the abnormal appearance of growth produced during this period. For localized plant infestations, pruning and disposing of the infected plant parts may be the least expensive control method. Extension specialists



from Virginia and North Carolina list Sevin as a control material, with thorough wetting of the undersides of the leaves necessary for mite suppression.

Boxwood mites tend to be a problem in cooler weather, necessitating treatment in late April to early May and in September and October. Two-spotted spider mites may be a problem at any time of the year, although they tend to present more of a problem during the hotter months. For either of these pests on boxwood the following pesticides are labelled: Kelthane, Cygon (dimethoate), Ornamite, Avid, Morestan, Pentac, or Vendex. Some of these materials may only be available to certified applicators. In any case, follow label directions carefully, and thoroughly wet all of the foliage (including the undersides of the leaves) and the stems with a full coverage spray.

Baker, J. R., ed. 1980. Insects and related pests of shrubs. NC Agr. Ext. Ser. Publ. AG-189. Raleigh, NC. 199 pp.

Cromroy, H. L. 1986. Florida nurserymen should be wary of eriophyid mites. Am. Nurseryman 164(7):92-95.

Johnson, W. T. and Lyon. 1988. Insects that feed on trees and shrubs, 2nd ed. Cornell Univ. Press, Ithaca, NY

Keifer, H. H., et al. 1982. An illustrated guide to plant abnormalities caused by eriophyid mites in North America. USDA-ARS. Handbook No. 57: 178 pp.

Virginia Cooperative Extension Service. 1990,. 1990-1991 Pest Management Guide for Nursery Ornamentals

Ms. Stefani, a research scientist, received her MS in plant pathology from the University of Georgia, and has been at the Hampton Roads Agricultural Experiment Station (VPI&SU) for 7 years. Dr. Banko, who has been doing research at the Experiment Station for 12 years, received MS and PhD degrees from the University of Idaho. Mr. Coffelt, a research scientist at the Station for 6 years, is currently pursuing his PhD in Entomology at VPI.

Ninth ABS Tour “Fabulous”

Discovers Boxwood in Gloucester County and Williamsburg

Scot Butler

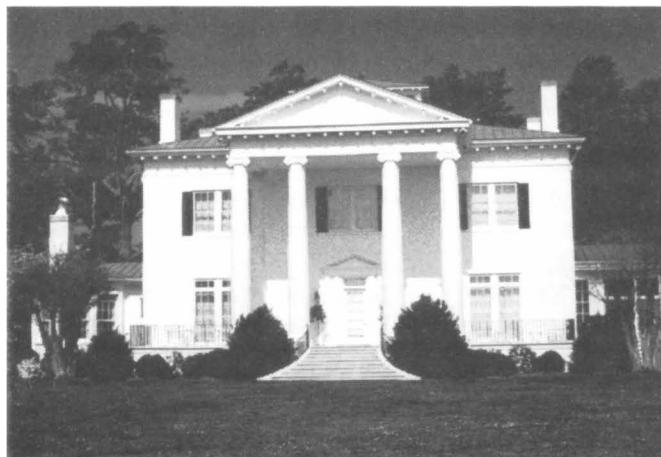
Concentrating on Gloucester County—a stronghold of Bacon’s Rebellion in 1676 and a seat of Toryism one century later during the American Revolution—some 40 members of the American Boxwood Society were treated royally to a glimpse of plantation life in Tidewater Virginia on April 27-28, 1991.

This tour, arranged by Mr. Richard Mahone, former President and a current Director of the ABS, followed in the tradition of excellence that all those fortunate enough to go on an ABS tour have come to expect with regard to

President Decca Frackelton’s room at the Lord Paget Motel in Williamsburg. We were ready for a day of high adventure under sunny skies. Our bus driver, Irving Carter, a native of Gloucester County, knew and drove the narrow country roads and private lanes with ease.

Our first two stops were at locations featured that day on the Historic Garden Week tour, but we were scheduled to visit them before they opened to the public. En route to Elmington we passed Long Bridge Ordinary, an 18th-century building having a lower floor of

one of three vital elements for wildlife habitat, the other two being food and shelter. Bicolor *Lespedeza*, *Sorghum*, *Rape*, and various millets were planted in food plots; shelters and nesting boxes were built for birds and bats. By 1990 Canada geese and many species of duck, quail and turkey as well as local animals began to frequent the habitat. Along our walk through the habitat we followed a map which showed the location of each of the elements of the habitat as well as many kinds of wildflowers, grasses and weeds that aroused our interest.



Elmington, overlooking the North River to the east, surrounded by ancient trees and boxwood



Then ABS President Frackelton admires a formal boxwood garden at Elmington (Photos: Scot Butler, except as noted)

displays of boxwood, early houses of architectural distinction and gardens of horticultural interest. Mr. Mahone’s vast store of knowledge about plant life and the history of the properties visited was channeled into a running commentary that illuminated and unified the many facets of the tour.

Everyone was on the bus promptly at 8:00 A.M. Saturday after having had an opportunity the evening before to meet and greet one another in then ABS

brick and two upper stories of wood.

Our visit to Elmington included three attractions. The first was of special interest to environmentalists. In 1986 the owners of Elmington undertook the creation of a wildlife habitat with the help of Blair Fairinholt of the Virginia Department of Game and Fisheries, the U.S. Fish and Wildlife Service, the Soil Conservation Service and others. In 1988 a fresh-water pond of three-plus acres was built to provide

The walk terminated at a large old barn on the property where refreshments were served and where displays of environmental programs were housed. The next attraction at Elmington was just a short distance down a lane inaccessible by bus, so we walked through the filtered sunlight to a breathtaking setting on a creek of the North River. Here was the so-called “Little House” at Elmington, owned by Mr. and Mrs. Henry Lane Wilson III.

Originally built as a guest cottage in the 1930s, the two-story frame house with peaked roof, quaint gables and many dormers is handsomely finished and furnished inside. A large wooden deck opening off the house skirts the edge of the creek, and through the deck an enormous American holly grows in silent majesty.

Just around a wooded bend from the "Little House" are the gardens of Elmington, a neoclassical mansion built on the North River in 1848. Now owned by Mr. and Mrs. Peter Glasel, it

star magnolia trees. There is also a decorative herb garden, and beyond a rose-covered fence is a large vegetable and flower cutting garden. The house is engulfed by enormous old boxwoods with a border of *Anchusa*. This is a garden not to be missed if it is open again for Historic Garden Week in Virginia.

From Elmington our tour took us "next door" to Exchange, home for over 150 years to the Dabney family, and now owned by Mr. and Mrs. H. Gordon Stewart.

The 3½-story house with brick

through the early house.

Our last call of the morning was to a very private garden, not on the Garden Week tour. Mr. George McLellan's garden was a revelation of what an individual with a steadfast goal in mind can accomplish in a relatively short span of years. The house he has restored and the gardens he has created along the shore line overlooking the wide Mobjack Bay represent a dream come true through skill, perseverance and hard work.

Mr. McLellan led half of our group



The Exchange, now owned by Mr. and Mrs. H. Gordon Stewart, is surrounded by beautiful boxwood.



The George McLellan home on Mobjack Bay, amid holly, boxwood and an herb garden

stands with its wide porticos and tall pillars in a park-like setting surrounded by stately mature trees: towering willow oaks, a specimen osage orange tree, and Southern magnolia, all of which were unbelievably large.

The beautiful formal garden, reflecting the influence of Dutch and French design, blends classic and natural sections with statuary accents. With a sparkling fountain at its center, brick walks bordered with large 'Suffruticosa' boxwood lead to matching Gardens with English limestone statues of two of the four seasons. A pavilion with teak Chippendale benches affords cross vistas of the garden. Pansies, tulips, azaleas, camellias and rhododendron provide color under dogwood, tulip and

gable ends and beaded weatherboard siding front and rear is advantageously located on the North River, where it enjoys the view and breezes. The house has an English basement, which now contains collector items, and the top floors retain original woodwork, hardware and fireplaces.

A dairy and a smoke house are believed to be original to the property. The grounds of this early plantation, which at one time extended from the North River to the outskirts of Gloucester Court House, are marked by ancient shade trees, Southern magnolias and mature 'Suffruticosa' boxwood. The manicured lawns and flower beds add to the sense of serenity. It was a great treat to visit Exchange and go

through one of two very different gardens while Mrs. Barbara Hall conducted the other half through the other. For his natural garden Mr. McLellan created a textured surface from flat land by building berms, moving in rocks, and channeling water. The effect is somewhat like that of a Japanese garden but without being Japanese. We inched along the winding path from one striking scene to another, each turn yielding new vistas of the garden. Plants were arranged so that they had the shade cover, soil properties and moisture required to thrive. And thrive they do—from rare exotic plants to plants native to the area. Naturally, there were several healthy boxwoods tucked in among the mixture of trees,



Leightview has a formal garden with gazebo, fountain, and topiary specimens



At Leightview, a specimen identified as *Buxus sinica var. insularis 'Tide Hill'* was measured as 6 1/2 feet across and 26 inches high (Photo: Mrs. R. L. Frackelton)

shrubs, ferns, and flowers. The names—in most cases both common and botanical—were supplied.

On the opposite side of his attractive gable-roofed house with gambrel-roofed wings, Mr. McLellan has a more conventional garden laid out in formal design. It abounds in spring-blooming shrubs and flowers, some of which were at their height during our visit. Especially impressive was a gigantic Photinia, which was so covered with large white blossoms that the foliage was almost invisible.

Mr. McLellan's property adjoins the Ware River Yacht Club, where we enjoyed a filling box lunch of chicken, ham and cheese sandwich, fruit, cake and soft drink on the outdoor deck and benches of the Club. We had to "anchor" our lunch boxes against the strong, fitful gusts of wind from the Bay, but that only added to the adventure of the occasion.

If the morning tour was impressive it was only a prelude to what Mr. Mahone had arranged for the afternoon through personal contact with the owners of four additional plantations: Leightview, Purton, White Marsh and Lisburne.

On the long, straight entrance lane into Leightview we were treated to the

sight of bison and llamas—along with more conventional farm animals grazing in fields. We also passed a group of dormitory buildings. Mr. Mahone explained that owner Paul Tudor Jones brings groups of underprivileged children from inner cities to his plantation during the summer to give them an exposure to plant and animal life which they would not otherwise have. This program has been in place for several years, with all costs borne by Mr. Jones. The plantation manager, Mr. Blair Fairinholt, explained the way the program is structured and recounted some anecdotes that showed his own enthusiasm for this philanthropic endeavor.

At the same time that Leightview is a working plantation and camp it is also a showplace of gardens, trees and shrubs. The handsome house is ringed by well-tended boxwoods and the driveway to the entrance of the house is lined with them. The formal garden is edged with 'Suffruticosa' boxwood of uniform size, and features a gazebo of 18th-century design, commodious Chippendale benches, topiary and a pool. The house fronts on the water and there are many handsome trees on the grounds.

Crossing the county to the York

River side we came to Purton, owned by Mr. and Mrs. David Stifel. We were greeted upon arrival by not only the Stifel's son, David, but also by the ravenous calls of some 50 majestic peacocks which freely strut over the extensive grounds. We spotted one entirely white peacock in a tree but, apparently not liking strangers, it withdrew entirely from sight just as we were about to photograph it. Also on hand were two pygmy Afghan goats that were black and very friendly.

Despite competition from the peacocks and goats for our attention, David bravely launched into the history of the plantation and the beautiful early brick house which his parents restored and added to. The property dates back at least to the very early 18th century, and maybe the late 17th century. The remains of an early church are located on the grounds. David and others have done some archeological exploring and found some Indian artifacts near the site of what was believed to have been Powhatan's residence. The present house is shaded by venerable trees; enormous boxwoods are in abundance, including a hedge of them around a formal garden located between the house and the river. An old *Halesia* (silver bell tree) attracted attention as



At Purton, there were majestic elms and boxwood which towered over former ABS President Mahone.



Buxus sempervirens 'Suffruticosa' at the entrance of White Marsh dwarf visitors. (Photo: Mrs. Frackelton)



A massive planting of Buxus sempervirens 'Suffruticosa' at White Marsh (Photo: Mrs. Frackelton)



At White Marsh, dozens of enormous Buxus sempervirens 'Suffruticosa' dot the lawn. (Photo: Mrs. Frackelton)

did a boxwood seedling that had taken root and was growing vigorously in the brick steps to the river entrance of the house. We took leave of Purton reluctantly with the cacophonous sounds of the peacocks still in our ears.

Our next stop was White Marsh, the home of Mrs. William Ingles, again a working plantation. We were prepared to view another fine old mansion but not to gaze on boxwood of such size and in such profusion (all, or almost all, 'Suffruticosa'). In every direction masses of billowing green mounds, well over our heads, stretched as far as the eye could see. Off to one side of the house boxwood-lined paths were filled

with that pungent odor that is so loved by most *Buxus* aficionados (but disliked by a few). On beyond the present boxwood garden stretched the remains of an earlier formal garden that is now solid boxwood except for remaining vestiges of crape myrtles that were once presumably planted inside of parterres. This was indeed the fulfillment of a boxwood lover's dream—to stand engulfed by a sea of boxwood, overcome by its heady fragrance and transported for a few moments into that realm of eternity described by Oliver Wendell Holmes.

But then Mr. Mahone came along and we joined him in a walk to the wa-

ter side of the house, where formal gardens once cascaded down the slope. And then we spied an ancient circular ice house of stuccoed-over brick. Opening the door we gazed down, perhaps forty feet, to the bottom of the header-lined brick interior. The experience was a humbling one as we contemplated the effort required to build this large "hole in the ground" and to keep it filled with blocks of ice in days gone by. Mr. Mahone called attention to a *Ginkgo* tree which is purported to be the largest of its kind in Virginia and possibly in the country. With his tape we measured its circumference; it was 15' 3" at D. B. H. White Marsh proved to be indeed a

treasure trove of botanical and historical wonders.

Once on the bus, Mr. Mahone announced that we had time before our last scheduled visit at Lisburne to stop at another attraction on the Virginia Garden Week tour: old Abingdon Church, White Marsh. When we arrived, the doors of the church were already closed but a phone call brought the rector, the Rev. Dennis Schmidt, who opened them for our benefit. Inside the church there were many floral displays representing women of Biblical times. They had been especially arranged for that day of the Garden Week

And, of course, there is much boxwood growing in the churchyard.

For many, Lisburne, the home of Mr. and Mrs. David Peebles, represented the perfect blend of house and garden. (*See cover.*) Greeted by Mr. Peebles as we started up a brick walk to the entrance of the house, we were flanked by 6-foot 'Suffruticosa' boxwoods. Mr. Peebles invited us to roam the house and gardens freely and to stop for refreshments under a majestic old hackberry tree in the lawn. The 18th-century house with added wings reflects the impeccable taste of the owners in restoring and furnishing the

P.M. at Nick's, the famous seafood restaurant in Yorktown. We were escorted past waiting hordes to our reserved tables, where we proceeded to relax and enjoy bountiful servings of seafood, pork, chicken, or chopped steak, depending on our preselected choices. With happy hearts after such a full and fabulous day the uppermost thought in most minds was of bed so that we might be ready Sunday morning for the last part of the tour—in Williamsburg.

Sunday dawned with slightly overcast skies but not enough to cause concern. After a continental breakfast at the



Boxwood of varying sizes surround the open lawn at Lisburne. (Photo: Mrs. Frackelton)



The Armstrong's porch is flanked by a pair of 8-foot Buxus sempervirens.

tour and attracted the attention of many of the ladies in our group with their originality.

Mr. Schmidt held us spellbound with the history of this architectural jewel, with the many famous families and events connected with it. One of eight churches of colonial Virginia built of brick in the form of a Latin cross, it was begun in 1750 and completed in 1755, replacing an earlier brick church said to have been of Gothic design and dating from c. 1655. The thick, original brick walls are in excellent shape, and many of the interior details are original as well, in spite of its occupation by hostile forces during the Civil War.

interior. One of the rooms that was added is panelled from floor to ceiling. Much of the early wood trim survives in the original house. From every window in the house, there are beautiful views of trees, lawns and gardens.

It seemed after a long day of touring that we had finally found our rightful resting place. Every consideration has been given to pleasant and safe living at Lisburne. We felt much refreshed by our sojourn. It was with regret that we took leave of the many garden spots, seemingly created at random, but reflecting a certain unity in their informal placement, as the sun began to sink.

A tired crew arrived at about 6:30

"automat" located behind our motel, we wandered down to inspect the ducks in the pond, one of the attractions at the motel. The ducks seemed to know what they were doing, so we left after a few minutes figuring we could be of no help. The Sunday tour was by private car so everyone checked out of the motel and formed a motorcade to drive to our first stop in Williamsburg, the private garden of Alfred and Martha Armstrong.

It was a pleasure to return to this intimate home garden three years after our visit during the Eighth ABS tour and again enjoy Martha's warm hospitality. We looked with interest at how

some of the more unusual cultivars in her boxwood collection have fared in the intervening period and were pleased to note that her *Buxus harlandii*, *Buxus microphylla* 'Compacta', and *Buxus microphylla* 'Curly Locks' are flourishing in their protected location. There are some unidentified boxwoods in the garden which invited speculation by Messrs. Mahone and Larson, but Mrs. Armstrong said she is satisfied just to have them with or without name.

Although a number of the Armstrong boxwoods were received from Dr. John T. Baldwin, Jr., when he was collecting and developing new

ing a cross vine in full bloom and a specimen *Cryptomeria*.

From the Armstrong garden the tour moved to the campus of the College of William and Mary, where Dr. Baldwin set out many of his experimental boxwoods. Mr. Mahone led one half of the group to view these plants and Cdr. Phillip D. ("Swede") Larson, the other half. Among the locations visited were a small boxwood garden planted in Dr. Baldwin's memory after his death, the large boxwood-bordered Sunken Garden, the small triangular-shaped garden with boxwoods identified by Dr. Baldwin before his death in 1974, and

boxwood garden was featured with a well-proportioned bird bath in its axis. An ornate summer house was well landscaped with boxwood, perennials, vines and hanging baskets filled with colorful annuals. A small pool with an attractive figurine fountain had aquatic plants and a very large koi fish which had survived many raccoon attacks.

The final event of the Ninth ABS Tour was a delicious luncheon served in a private room at the Cascades Restaurant. We were joined at luncheon by those who had hosted us in their gardens that morning. At the end of the meal Mr. John Hart rose and thanked



The Baldwin Memorial Garden at William and Mary College, dedicated to him in 1977, includes six Buxus microphylla 'Compacta'



The Abbits' boxwood garden with an interesting figure at the central axis

varieties at the College of William and Mary, many of these were never named and simply farmed out to his friends in Williamsburg for testing. Such are the two columnar plants on either side of the Armstrong's porch door. Dr. Baldwin shaped them when they were small and they have continued to grow in that shape with only a minimum of pruning, according to Mrs. Armstrong. They are now over 8' tall. As before, Mrs. Armstrong generously offered cuttings from her boxwoods to any who wished them, even supplying plastic bags to put them in. In addition to boxwoods, there were a number of unusual plants in the Armstrong garden, includ-

an open area of the campus dotted with the experimental boxwoods referred to above, now grown to mature size.

Next we strolled through the garden of Mr. and Mrs. Andrew Abbott. Marian Abbott, our guide and the horticulturist of the family, has done an outstanding job of collecting plants of special interest. Being an accomplished and well-known flower arranger, the choice of plants in her garden reflects this talent.

Several viburnums, *Photinia*, *Nandina*, Poets Laurel, Umbrella Pine, *Taxus*, azaleas and boxwoods are planted in an informal manner under a canopy of Loblolly pines and more than 70 dogwoods. A small older formal

Mr. Mahone and Mrs. Frackelton for all they had done to make the Ninth ABS Tour so outstanding. The hearty applause that followed testified that all were in accord.

Mr. Butler, husband of the Secretary of the ABS, is an ardent boxwood enthusiast and former Editor of The Boxwood Bulletin.

NEWS OF THE SOCIETY

Attendees for Ninth ABS Tour April 27-28, 1991

Mrs. Gerald Atterbury
Mrs. Cecil B. Banks
Mr. and Mrs. John W. Boyd
Dr. and Mrs. Mark Braimbridge
Mr. and Mrs. Scot Butler
Mrs. E. Chamberlin
Mrs. E. E. Colbert
Mr. Robert Culver
Mrs. Jules Demyttenaere
Mr. and Mrs. James H. Driver
Mrs. Robert L. Frackelton
Mr. Lawrence M. Furey
Mrs. John C. Harlan
Mr. and Mrs. John Hart
Mr. Davyd Foard Hood
Mrs. Thomas B. Jones
Mr. and Mrs. P. D. Larson
Mr. and Mrs. Anthony Lipnicki
Jane Lowenthal
Mr. Richard D. Mahone
Dorothy Martinson
Frances Neely
Mr. and Mrs. Winfield S. Preston
Mrs. Antone Rodgers
Mrs. Frederic W. Scott
Mr. and Mrs. Howard Smith
Fran Stout
Mrs. James Sykes
Mr. and Mrs. James Ward Walker
Mr. and Mrs. George Warner

ABS Annual Meeting Attendance List May 14-15, 1991

Baden, Jeanne F.
Barton, Mr. Edward I.
Barton, Mrs. Edward I.
Batdorf, Lynn R.
Boyd, Mr. John W., Jr.
Boyd, Mrs. John W., Jr.
Boyd, John W. III
Mrs. Nat Burgyn

Burton, Mrs. George
Butler, Mr. Scot
Butler, Mrs. Scot
Chamberlin, Mrs. Edward
Condon, Mrs. Harriette
deButts, Mrs. Harry A.
Ellmore, Margaret
Fooks, Charles T.
Fooks, Lucille R.
Frackelton, Mrs. R. L.
Gallagher, James
Greene, Mr. Wesley
Hahn, K. Lee
Haldeman, Mrs. Paul
Halpin, Mrs. Gerald T.
Hart, Mr. John
Hart, Mrs. John
Hughey, Mrs. George
Larson, P. D.
Lisenby, Mrs. Mattie
Loving, Lunsford L.
Mahone, Mr. Richard D.
Manners, Mr. Edward
Manners, Mrs. Edward
Miser, Robert
Myers, Mrs. Madeline
Puckett, Mrs. Mary Jane
Rodgers, Mr. Antone
Rodgers, Mrs. Antone
Saunders, Mr. Tom
Saunders, Mrs. Tom
Sexton, Tyra
Sheehan, Mr. William
Showalter, Mr. Joseph
Showalter, Mrs. Joseph
Smith, Mr. Howard W., Jr.
Smith, Mrs. Howard W., Jr.
Solenberger, Mrs. Herbert
Sutermeister, Mrs. Oscar

Taylor, Dale T.
Taylor, Mrs. Jaquelin E.
Ward, Mrs. Katherine D.
Weber, Edward
Westmeyer, Capt. Monty
Westmeyer, Mrs. Monty
Whitaker, Mr. Chance
Whitaker, Mrs. Mary
Wooley, Mr. Rollin
Zapton, Mr. Steve
Zapton, Mrs. Masako

Nominating Committee Report May 15, 1991

President:

Mr. Dale T. Taylor

First Vice-President:

Mrs. Robert L. Frackelton

Second Vice-President:

Mrs. Malcolm Holekamp

Secretary: Mrs. Scot Butler

Executive Treasurer:

Mrs. Katherine D. Ward

Registrar:

Lynn R. Batdorf

Directors (Three-year term,
ending 1994):

Mr. John W. Boyd, Jr.

Cdr. Phillip D. Larson

Mr. Tom Saunders

Richard D. Mahone

Chairman, ABS Nominating
Committee

Spring Board Meeting Minutes - March 1991

The ABS Board of Directors met at the home of the President in Fredericksburg, Virginia, on Friday, March 8, 1991. Present were Mrs. Robert L. Frackelton, President; Katherine D. Ward, Treasurer; Mrs. Scot Butler, Secretary; Directors Lynn R. Batdorf,

John W. Boyd, Jr., Cdr. Phillip D. Larson, and Richard D. Mahone; and Dr. Edward F. Connor, Director of Blandy Experimental Farm of the University of Virginia.

The President called the meeting to order at 10:00 A.M. The death of long-

time ABS member D. Goodrich Gamble was noted with deep sadness. The minutes of the fall Board meeting, September 21, 1990, were approved as published in *The Boxwood Bulletin*, January issue (Vol. 30, No. 3, p. 44).

The Treasurer's report was approved as presented. Balances were: checking account, \$10,810.22; certificates of deposit, \$31,142.22. (The full report is available on request.)

Committee Reports

Annual Meeting: The 30th Annual Meeting will be held on Tuesday and Wednesday, May 14 and 15, at Blandy Experimental Farm. Special recognition will be given to Charter Members. Budget: Requests for 1991-92 funds were to have been submitted to Mr. Dale Taylor by February 15. Last call!

Bulletin Committee: Proofreading help by Mrs. Malcolm Holekamp and Mr. Lynn Batdorf is much appreciated. Miss Carter Frackelton and Mrs. Tyra Sexton assisted in preparing the January *Bulletin* for mailing. Articles from Board members are needed. Professor Niemiera is writing about boxwood in a cemetery near Martinsville, Virginia, brought to his attention by a student.

Buyer's Guide: More than 20 copies of the third edition have been sold since the fall Board meeting. An article in *Southern Living* magazine, "So You Thought You Knew Boxwood?", has prompted recent inquiries. Index, Handbook, Monograph, Registrar: Mr. Batdorf presented a draft of the next 5-year index of *The Boxwood Bulletin*, which will cover July 1986 through April 1991, Volumes 26 through 30. This will be completed after the appearance of the April 1991 issue. Later this year, a separate publication of this 5-year index will be available for \$3.00, including mailing. A bound volume containing the *Bulletins* for these five years and the index will be presented to the library at Blandy Farm, a branch of the Alderman Library of the University of Virginia. Mr. Batdorf reported no further progress on the *Monograph for*

Buxus. Discussion about the *Boxwood Handbook* stressed the hope for a special, unique product containing close-up photographs of many cultivars, in color.

Memorial Garden: Cdr. Larson reported that initial work on setting stakes to mark the location of the Boxwood Garden will soon begin, as well as plowing up soil for beds and amending it to produce good drainage and fertility, in preparation for relocating plants now in the amphitheater area. Some tree removal will also be accomplished. Many cuttings have been rooted for placement in the Garden in future years. Back-up plants must also be propagated; some are ready to be lined out in the nursery. Others need to be potted up and set into the lath house. Dr. Connor noted that plowing and reseeding will be done, and a permanent water line laid. The new entrance road will be built this year and amphitheater construction will take place in 1992. Fall and winter will be the best time to relocate boxwood plants. Grading for the amphitheater and boxwood areas will be planned as one operation. Gravel walkways will be laid. It will take at least five years to produce new plants of a size to be set in the Garden.

Research: Mrs. Butler reported on correspondence with Mr. Richard Hawke about the cultivar evaluation project at the Chicago Botanic Garden. Rooting of the 10 cultivars in the study was quite successful and most small plants are growing well.

Mr. Mahone reported that Mr. Tom Banko's work on tissue culture at the Hampton Roads Agricultural Research Station has met with little success. New growth tissue will be needed in order to continue. The study of growth inhibitors has tested a new product called Sumagic, which is to be released to the public next year. A North Carolina nursery has found that a growth inhibitor has been successful in reducing very early growth of *Buxus sempervirens 'Suffruticosa'*, which normally freezes and browns during late cold spells. \$500 continuing support in 1991 was

approved for each of these two studies.

Garden Tour: Mr. Mahone noted that all plans are complete and registration is almost full. [See article on page 5.]

The Board approved the granting of a complimentary subscription to *The Boxwood Bulletin* for the new Center for Home Gardening at the Missouri Botanic Garden.

Cdr. Larson noted that *Buxus sempervirens 'Elegantissima'* was a thriving giant in Central Florida, observed on his recent trip.

Members who have unwanted sets or several volumes of old *Boxwood Bulletins* may return them to the American Boxwood Society, P.O. Box 85, Boyce, Virginia 22620. The Society will reimburse the sender for postage. The issues will be donated to central libraries, where they will be useful research material available through computer hook-ups.

Dr. Connor announced the Plant Sale and Horticulture Fair to be held at Blandy Farm on May 11 and 12, 1991. Exhibitors and plant nurseries are invited to participate. A workshop on boxwood will be held at Blandy Farm on May 14 from 1-4 P.M., preceding the evening program and reception of the ABS Annual Meeting.

Any members who will donate named boxwood cultivars for sale at the plant auction following the Annual Meeting are asked to send a list of their plants to Mr. Dale T. Taylor, 105 S. Princeton Avenue, Wenonah, NJ 08090.

The meeting adjourned at 12:30 P.M. Board members greatly enjoyed a delicious lunch provided by the President.

*Joan Butler
Secretary*

IN MEMORIAM

Mrs. George Cushing, Life Member
Mrs. Vincent Shea, Life Member

SPECIAL SECTION

In the January 1991 issue of *The Boxwood Bulletin*, the ABS presented Part I of a reproduction of an important addition to the taxonomic literature on *Buxus*, entitled *Flora: Reipublicae Popularis Sinicae*. Part II appeared in the April issue. The following pages present the third and final installment.

The *Buxus* species of East Asia and the neotropical, Central American species have long been in need of review and examination.

The publication documents the work of M. Cheng, who in 1980 published a flora of the East Asian *Buxus* species and varieties.

It contains taxonomic descriptions of many species and varieties of boxwood found in China, and was translated from the Chinese by two British-born women, Isabel Tasker and Robyn Carter. They have constructed an accurate Chinese-to-English translation which has allowed the English-speaking community to review this major Asian *Buxus* flora.

The work has resulted in documenting new varieties and reclassification of other species and varieties.

To laymen, reclassifications result in the most confusion. The binomial change of Korean boxwood from *B. microphylla* var. *insularis* to *B. sinica* var. *insularis* is particularly significant because it is a well-known temperate species.

Lynn R. Batdorf
International Registration Authority for Cultivated *Buxus* L.

12. *Buxus cephalantha*

Levl. et Vant. in Fedde, Rep. sp. nov. 3: 20. 1906;
Hatusima in Journ. Dept. Agr. Kyusyu Univ. 6 (6): 316, f.
21, Pl. 20(5), f. 1. 1942, p.p. excl. Pl. ex Kwangtung, Tai-
young-shan.—*Buxus sempervirens* L. var. *microphylla*
Levl. Fl. Kouy-Tcheou, 160. 1914.—*Buxus harlandii*
Hance var. *linearis* Hand.-Mazz., Symb. Sin. 7: 237.
1931.—*Buxus harlandii* Hance var. *cephalantha* (Levl. et
Vant.) Rehd. in Journ. Arn. Arb. 14: 237. 1933.

12a. var. *cephalantha* Figure 11: 1 - 2

Small SHRUB, height 30 - 60 cm.; extremely ramoso; BRANCHLETS quadrangular, diameter 0.5 - 1 mm., lightly covered in minute short soft hairs, internodal length 3 - 5 mm. Leaves either thinly coriaceous, obovate-spatulate, 8 - 12 mm. long, 3 - 4 mm. wide (as in Jiang Ying 8403,

Longli, Guizhou) or spatulate-linear, 1.5 - 2 cm. long, 2.5 - 4 mm. wide (as in anon. 92839, northern Guangxi), apex always obtuse, either retuse or with a small point protruding, midrib prominent on both sides of the leaf, lateral veins dense and evident on the leaf surface, forming angles of 45° with the midrib, midrib has a slight covering of minute fine hairs; PETIOLES 0 - 1 mm. long. INFLORESCENCE apical and axillary, capitate, rachis 3 - 5 mm. long, producing dense fine hairs; BRACTS 6 - 8 pairs, ovate-triangular, apex acute, 1.5 mm. long, hairs close to the base on the reverse side; MALE FLOWERS: sessile, sepals ovate, 1.3 mm. long, glabrous, rudimentary pistil approx. 0.8 mm. long; FEMALE FLOWER: sepals ovate-elliptical, approx 1.5 mm. long, when receptive to pollen the ovary is longer than the style. FRUIT ovoid, up to 6 mm. long, initially covered in minute hard downy hairs, later becoming nearly glabrous, with minute fine hairs only visible through a magnifying lens, persistent style 1.5 mm. long, stigma obovate, decurrent to the middle of the style. Flowering period March, fruiting period July.

Found in central-southern Guizhou (the region of Pingba, Dulun, and Longli), and northern Guangxi. Type specimen collected in Pingba in Guizhou.

The specimen from Guangxi seen by the author corresponds exactly to the photograph and description of *Buxus harlandii* var. *linearis* Hand.-Mazz. The original description of this species in Léveillé and Vaniot was extremely sketchy, saying only "The difference between this species and *Buxus sempervirens* L. is that the fruit is smooth without reticular markings and is borne at the tips of the branches, and the leaves are spatulate." Rehder's description of *Buxus harlandii* var. *cephalantha* also merely states, "It differs from the original species principally in its smaller size, height of approx. 30 cm., short branchlets, leaves 6 - 11 mm. long, some leaves obovate (8.4 mm.), inflorescence mostly apical." Neither description mentioned the male and female flowers.

12b. var. *shantouensis* M. Cheng. Figure 11: 3 - 4

This var. differs from var. *cephalantha* in that the branchlets are glabrous; leaves comparatively large, mainly narrowly-oblong or narrowly-lanceolate, 1.5 - 2.5 cm. long, 5 - 7 mm. wide; ripe capsule when dried is shiny, glabrous, with reticulate raised markings.

Found in Taiyang Shan at Shantou in Guangdong; grows on rocks, altitude 700 m. Type specimen collected at that site.



FIGURE 7

图版 9

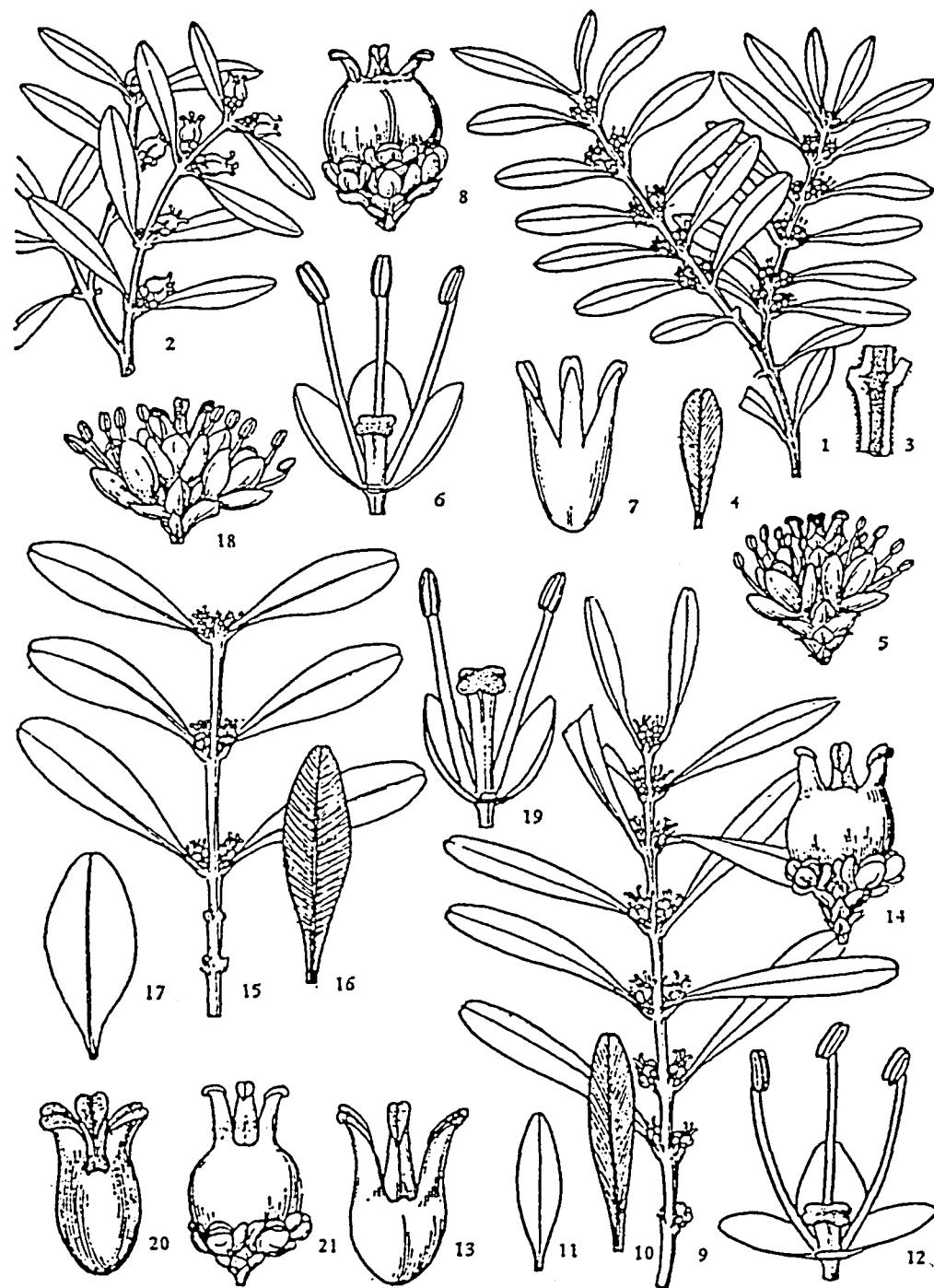


FIGURE 9

13. *Buxus harlandii* Figure 9: 9-14

Hance in Journ. Linn. Soc. Bot. 13: 123, 1873, p. p. maj.; Rehd. et Wils. in Sarg. Pl. Wils. 2: 166. 1914, p. p. excl. pl. ex Hupeh et Fukien; Rehd. Man. Cult. Trees et Shrubs 533. 1927; Merr. et Chun in Sunyats. 5: 103, 1940; Hatusima in Journ. Dept. Agr. Kyusyu Univ. 6 (6): 314, f. 20. Pl. 20(5), f. 2. 1942; Flora Hainanensis 2: 339. 1965.—*Buxus sempervirens* auct. non L.: Benth. Fl. Hongk. 315, 1861; Hemsl. in Journ. Linn. Soc. 26:418, 1894, p. p.; Dunn et Tucher in Kew Bull. Misc. Inform. add. ser. 10: 233 (Fl. Kwangt. and Hongk.) 1912.

SHRUB, small, height 0.5 - 1 m.; BRANCHES almost terete; BRANCHLETS almost quadrangular, extremely slender, diameter approx. 1 mm., lightly puberulous, internodal length 1 - 2 cm. LEAVES thinly coriaceous, spatulate, rarely narrowly oblong, 2 - 3.5 (- 4) cm. long, 5 - 8 (- 9) mm. wide, apex slightly narrow, tip rounded or obtuse, or retuse, base cuneate, upper surface of leaf shiny, midrib prominent on both surfaces of the leaf, lateral veins and veinlets close and marked on the leaf surface, lateral veins form angles of about 30 - 35° with the midrib, on the reverse of the leaf not very distinct, lower half of the midrib on the upper surface commonly covered in minute fine hairs; no obvious petiole. INFLORESCENCE axillary and apillary, capitate, flowers dense, rachis 3 - 4 mm. long; BRACTS ovate, pointed; MALE FLOWERS: approx. 4, pedicels approx. 0.8 mm. long, sepals broadly ovate, approx. 2 mm. long, outer sepals arched, rudimentary pistil has a thin terete stalk, end section enlarged, height approx. 1.4 mm.; FEMALE FLOWER: when receptive to pollen the ovary is of the same length as the style, glabrous, style flat and wide, slightly arched, stigma obcordate, decurrent to the centre of the style. Ripe capsules unseen. Flowering period March.

and marked on the leaf surface, forming an angle of 30 - 35° with the midrib, not very distinct on the reverse; no evident petiole. INFLORESCENCE axillary and apillary, capitate, rachis approx. 4 mm. long, bracts ovate, pointed, many flowerless bracteoles at the base, dense imbricate arrangement; MALE FLOWERS: approx. 4, pedicels approx. 0.8 mm. long, sepals broadly ovate, approx. 2 mm. long, outer sepals arched, rudimentary pistil has a thin terete stalk, end section enlarged, height approx. 1.4 mm.; FEMALE FLOWER: when receptive to pollen the ovary is of the same length as the style, glabrous, style flat and wide, slightly arched, stigma obcordate, decurrent to the centre of the style. Ripe capsules unseen. Flowering period March.

Found in the Shiwan da shan mountains south of Sidong in Guangxi. Type specimen collected from there.

This species is similar to *Buxus harlandii* Hance but the leaves are narrower in this species, forming a linear shape narrowing to a point at both ends, and the two can be distinguished by whether the leaf is spatulate or narrowly-oblong.

15. *Buxus bodinieri* Figure 9: 15-21

Levl. in Fedde, Rep. sp. nov. 11: 549. 1913; Fl. Kouy-Tcheou, 160. 1914; Hatusima in Journ. Dept. Agr. Kyusyu Univ. 6 (6): 311, f. 19, Pl. 19(4), f. 1, 1942; Flora Yunnanensis 1: 147, figure 35: 15-17. 1977.—*Buxus harlandii* Hance in Journ. Linn. Soc. 13: 123. 1873, p. p.—*Buxus microphylla* Sieb. et Zucc. var. *platyphylla* (Schneid.) Hand.-Mazz. Symb. Sin. 7: 237. 1931, excl. syn. et pl. ex Yunnan.—*Buxus microphylla* Sieb. et Zucc. var. *aemulans* Rehd. et Wils. in Sarg. Pl. Wils. 2: 160. 1914, p. p. excl. Henry, No. 7808 et veitch Exped. No. 433.

SHRUB, height 3 - 4 m.; BRANCHES terete; BRANCHLETS quadrangular, pubescent, later becoming glabrous. LEAVES thinly coriaceous, commonly spatulate, also narrowly-ovate or obovate, the majority widest above the middle, 2 - 4 cm. long, 8 - 18 mm. wide, apex rounded or obtuse, commonly retuse or with a small point protruding, base narrow long elliptical, sometimes acute, upper surface of leaf green, shiny, underside grey, midrib prominent on both sides of leaf, lateral veins very many, obvious on both surfaces or just on the upper surface, making angles of 50 - 60° with the midrib, the lower half of the midrib on the upper surface is mostly covered in minute fine hairs; PETIOLE 1 - 2 mm. long. INFLORESCENCE axillary, capitate, 5 - 6 mm. long, flowers dense, rachis approx. 2.5 mm. long; BRACTS ovate, glabrous on the reverse, or pubescent; MALE FLOWERS: approx. 10, petioles only 0.4 mm. long sepals ovate, approx 2.5 mm. long, length of stamen including anther 6 mm., rudimentary pistil has a terete stalk, end section enlarged, approx. 2.5 mm. high, nearly as long as the sepals, or slightly longer; FEMALE FLOWER: outer sepals approx. 2 mm. long, inner sepals approx 2.5 mm. long, when

14. *Buxus linearfolia* M. Cheng. Figure 10.

SHRUB, small, height approx. 1 m.; BRANCHES terete, greyish-white; BRANCHLETS quadrangular, diameter less than 1 mm., lightly puberulous, internodal length 4 - 6 mm. LEAVES thinly coriaceous, dense, linear, rarely linear-lanceolate, 1.5 - 2.5 cm. long, 3 - 5 mm. wide, the two ends are equally acuminate, tip obtuse, commonly retuse, base extremely narrow, midrib prominent on the upper surface of the leaf, somewhat smooth on the reverse, lateral veins close

图版 10

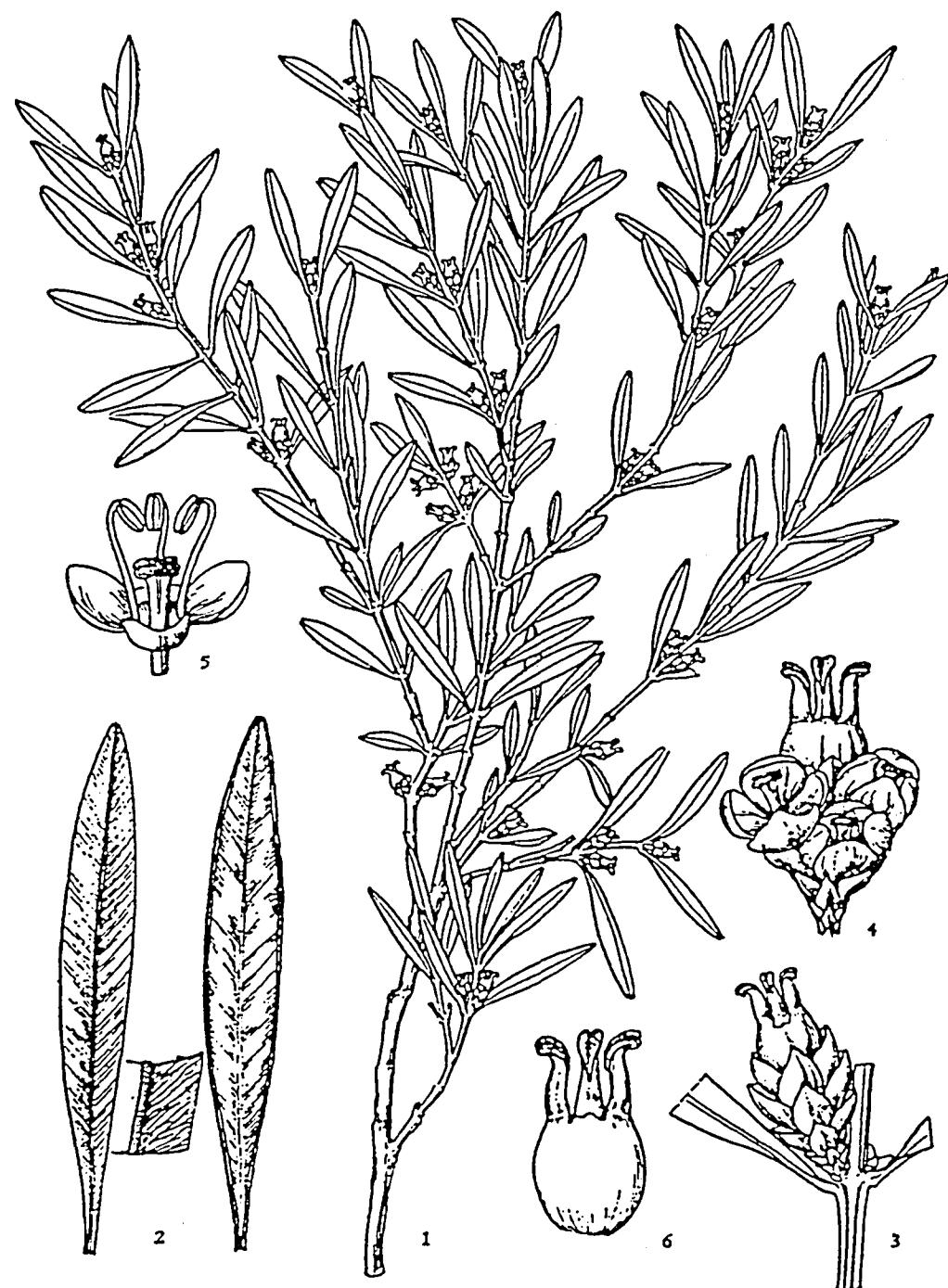


FIGURE 10

receptive to pollen, ovary 2 mm. long, glabrous, style 1.5 mm. long, slightly flat, stigma obcordate, decurrent to $\frac{1}{3}$ to $\frac{1}{2}$ way down the style. Capsule ovoid, 5 mm. long, persistent style erect, 3 - 4 mm. long. Flowering period February, fruiting period May - August.

Found in Yunnan, Sichuan, Guizhou, Guangxi, Guangdong, Jiangxi, Zhejiang, Hubei, Henan, Gansu, and southern Shaanxi; grows on wooded slopes or flat ground, altitude 400 - 2700 m. Type specimen collected in Guiyang, Guizhou.

16. *Buxus ichangensis* Figure 7: 8-11

Hatusima in Journ. Dept. Agr. Kyusyu Univ. 6(6): 309, f. 18, a-i, Pl. 17 (2), f. 2, 1942.—*Buxus harlandii* auct. non Hance: Rehd. et Wils. in Sarg. Pl. Wils. 2: 166. 1914, p. p. excl. pl. ex Hongk.

SHRUB, height 15 - 30 (- 100) cm.; BRANCHES terete; BRANCHLETS dense, quadrangular, extremely slender, diameter approx. 0.5 mm., densely or sparsely pubescent. LEAVES thinly coriaceous, oblanceolate or narrowly obovate, 1 - 1.6 mm. long, 4 - 6 mm. wide, apex rounded, frequently with a small point protruding, base cuneate, both surfaces smooth, without lateral veins, upper surface shiny, midrib prominent, underside dull, midrib may be protruding or flat; PETIOLES approx. 1 mm. long, INFLORESCENCE axillary or apicillary, capitate, rachis hairy, bracts ovate, acute, 1 - 2 mm. long; MALE FLOWERS: 8 - 12, pedicels only 0.4 mm. long, sepals ovate, 1.8 - 2 mm. long, bracts and sepals all show many discontinuous red-brown lines, length of stamen and anther together 4 - 5 mm., rudimentary pistil slender, with terete stalk, end section enlarged, 1.4 - 1.8 mm. high, length almost the same as the sepals; FEMALE FLOWER: sepals ovate-oblong, approx 2.5 mm. long, when receptive to pollen the ovary is slightly longer than the style, glabrous. CAPSULE elliptical or oblong, 5 mm. long, shiny, with longitudinal channels, persistent style 2 mm. long, slender, oblique or erect, stigma decurrent to the middle of the style. Flowering period March, fruiting period July.

Found in western Hubei (the region of Badong, Zigui, and Yichang); grows on river banks or on rocks facing the sun, altitude 30 - 300 m. Type specimen collected in Badong, Hubei.

This species is extremely easy to distinguish from others, due to its relatively small leaves, without any lateral veins on either side, the rudimentary pistil being long and the style strong, and the bracts and sepals showing red-brown lines when dried.

Hatusima's description of this species only mentions the flower; this text adds a description of the fruit.

17. *Buxus sinica*

(Rehd. et Wils.) Cheng, stat. nov.—*Buxus sinica* (Rehd. et Wils.) Cheng, Nanjing Institute of Forestry, Dendrology 1:318. 1962, nom. illeg.—*Buxus microphylla* Sieb. et zucc. var. *sinica* Rehd. et Wils. in Sarg. Pl. Wils. 2: 165. 1914; Chen Rong, Taxonomy of Chinese Trees 637. 1937; Flora Hainanensis 2: 339. 1965; Pictorial Handbook of Higher Plants 2: 628, Fig. 2986. 1972.—*Buxus microphylla* Sieb. et Zucc. ssp. *sinica* (Rehd. et Wils.) Hatusima in Journ. Dept. Agr. Kyusyu Univ. 6 (6); 326, f. 25, a-p, Pl. 22(7), f. 1. 1942; Flora Yunnanensis 1.: 146, Fig 36, 1-3. 1977.—*Buxus sempervirens* auct. non L.: Hemsl. in Journ. Linn. Soc. 26: 418. 1894.

17a. ssp. *sinica*

var. *sinica*

SHRUB, or small tree, height 1 - 6 m.; BRANCHES terete, with longitudinal ridges, pale grey; BRANCHLETS quadrangular, completely pubescent or glabrous on two opposite external sides, internodal length 0.5 - 2 cm. LEAVES leathery, broadly-elliptical, broadly obovate, ovate-elliptical or oblong, most 1.5 - 3.5 cm. long, 0.8 - 2 cm. wide, apex rounded or obtuse, frequently retuse, not acute, base round, acute or cuneate, upper surface of leaf shiny, midrib prominent, lower half frequently covered in minute fine hairs, lateral veins evident, on the reverse side of the leaf the midrib is smooth or slightly prominent, the midrib is often densely covered in short white linear cystoliths, no lateral veins; PETIOLES 1 - 2 mm. long, upper side hairy. INFLORESCENCE axillary, capitate, flowers dense, rachis 3 - 4 mm. long, hairy, bracts broadly ovate, 2 - 2.5 mm. long, somewhat hairy on reverse; MALE FLOWERS: approx 10, sessile, outer sepals ovate-elliptical, inner sepals almost round, 2.5 - 3 mm. long, glabrous, length of stamen including anther 4 mm., rudimentary pistil has a clavate stalk, tip enlarged, about 2 mm. high, (height about 2/3 of the length of the sepals or nearly as long as the sepals); FEMALE FLOWER: sepals 3 mm. long, ovary slightly longer than style, glabrous, style thick and flat, stigma obcordate, decurrent to the middle of the style. CAPSULE almost spherical, 6 - 8 (- 10) mm. long, persistent style 2 - 3 mm. long. Flowering period March, fruiting period May - June.

Found in Shaanxi, Gansu, Hubei, Sichuan, Guizhou, Guangxi, Guangdong, Jiangxi, Zhejiang, Anhui, Jiangsu, and Shandong, some of these occurrences being cultivated; grows mainly in valleys, beside streams and in forests, altitude 1200 - 2600 m. Type specimen collected in Changyang county, Hubei.

图版 11

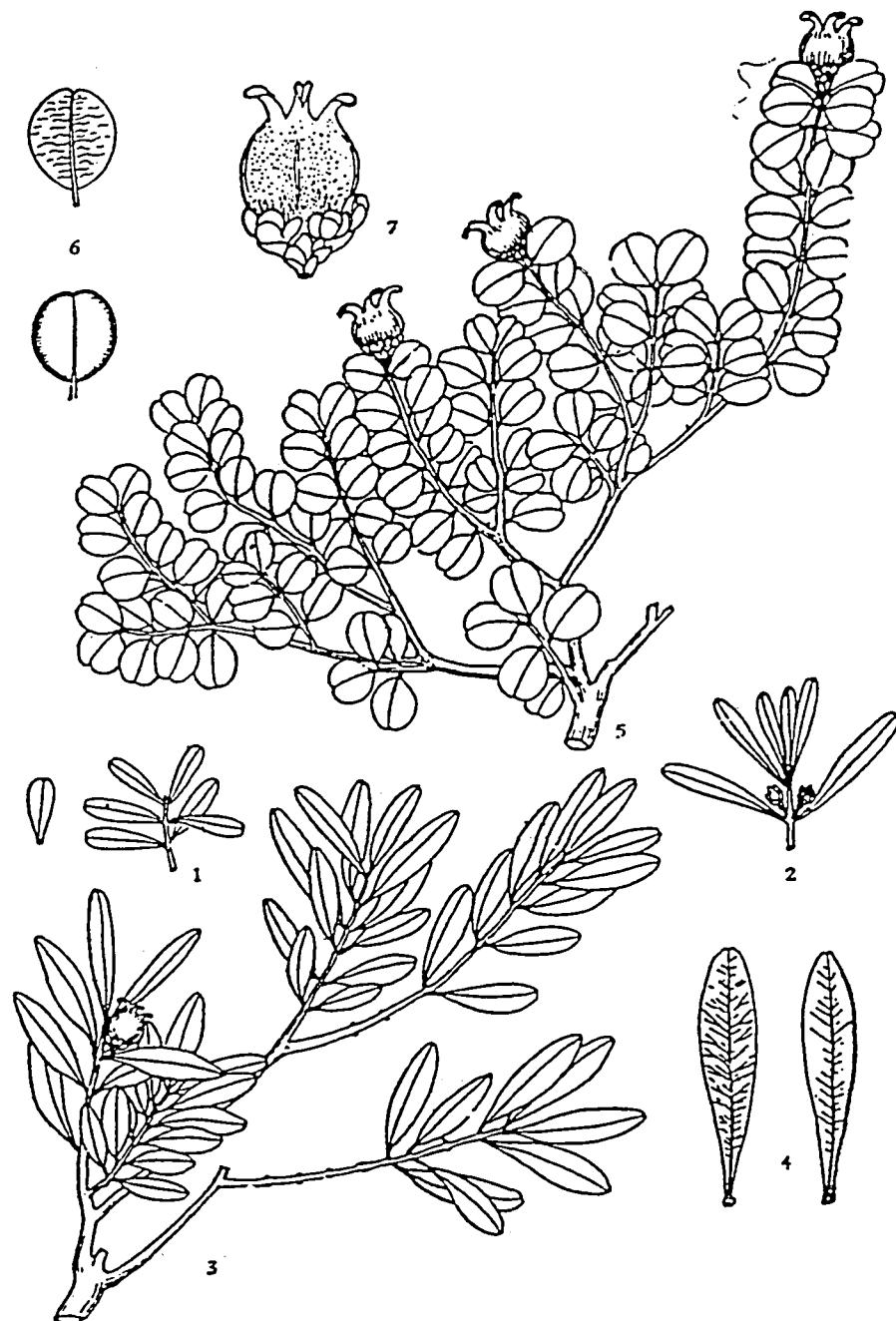


FIGURE 11

var. *vaccinifolia* M. Cheng Figure 11: 5 - 7.

This variety differs from var. *sinica* in the following ways: low-growing, BRANCHES coarctate, internodal length 3 - 6 mm.; LEAVES thickly coriaceous, rounded or broadly elliptical, rarely broadly ovate, 9 - 11 (- 12) mm. long, 8 - 10 mm. wide, apex rounded, frequently retuse, base rounded, rarely acute, margins strongly deflexed, outer cortex of the leaf extremely thick, shiny, no lateral veins (or lateral veins extremely rare), rugose when dried, CAPSULE ovoid-spherical, 7 - 8 mm. long, initially pubescent, later becoming glabrous.

Found in Guangdong (Ruyuan county), Hunan (Yizhang county), and Jiangxi (Wulaofeng peak in Lushan); grows in areas facing the sun, on rocks or in bushwood, altitude 1000 - 1800 m. Type specimen collected in Shijiuling, Ruyuan county, Guangdong.

Specimen Dai Tianlun 100704, from altitude 1700 m. at Shuangping, Yiziliang, Chengkou in Sichuan, has thickly coriaceous leaves, elliptical or obovate, no lateral veins, rugose when dried, and densely pubescent fruit; it is a cultivar of this variety. (Figure 12: 1 - 5)

var. *parvifolia* M. Cheng

This variety differs from var. *vaccinifolia* in the following ways: leaves thinly coriaceous, broadly elliptical or broadly ovate, 7 - 10 mm. long, 5 - 7 mm. wide, surface of leaf shiny or dull, lateral veins distinctly prominent; capsule 6 - 7 mm. long, glabrous. (As found in Xingshan, Hubei, the branchlets are covered in fairly long hairs, leaves commonly rounded or oblong-obovate, upper surface extremely shiny; in all other respects resembles the description above.)

Found in Anhui (Huangshan), Zhejiang (Longtangshan), Jiangxi (Lushan) and Hubei (Shennongjia and Xingshan); grows on rocks, altitude 1000 m. Type specimen collected in Huangshan.

Specimen Dai Tianlun 105667, from altitude 2300 m. at Houping and Ranjiaping, Chengkou, Sichuan, has leaves the same as var. *parvifolia*, but the hairs covering the branchlets are relatively sparse, internodal length is 0.8 - 2 cm., and the fruit is also lightly puberulous. Further research is needed to decide whether or not it is a distinct variety.

ssp. *sinica* var. *insularis*

(Nakai) M. Cheng, comb. nov.—*Buxus microphylla* Sieb. et Zucc. var. *insularis* Nakai in Bot. Mag. Tokyo 36: 63, 1922, which is found in Korea, is completely different from var. *parvifolia*, to judge by the type specimen (collected in Korea) seen by the author: leaves thickly coriaceous, elliptical-oblong or oblong, 10 - 15 mm. long, 6 - 8 mm. wide, lateral veins on the leaf surface indistinct or slightly distinct, not prominent, margin strongly deflexed.

The author has not seen this species at Lushan. It is only cultivated in parks sometimes. (Hatusima's claim that it is found in Lushan is, I am afraid, an error.)

var. *pumila* M. Cheng. Figure 12: 6 - 9.

This variety differs from var. *vaccinifolia* in that the leaves are very small, 5 - 7 (- 9) mm. long, 3.5 - 5 (- 6) mm. wide, fruit glabrous. It differs from var. *parvifolia* in that the outer cortex is extremely thick, commonly no lateral veins, rugose, capsules spherical, 4 mm. long, with a very short style.

Found in Badong and other counties of western Hubei; grows on wooded slopes, altitude 2100 m. Type specimen collected near Niudongwan in Badong.

This variety may also be an alpine variety of var. *parvifolia*.

var. *intermedia*

(Kanehira) M. Cheng, comb. nov.—*Buxus intermedia* Kanehira Form. Trees rev. ed. 359, f. 315. 1936.—*Buxus microphylla* Sieb. et Zucc. var. *intermedia* (Kanehira) H.L.Li, Wood. Fl. Taiw. 442, f. 170. 1963; in Fl. Taiw. 3: 642, 1977.—*Buxus liukiuensis* auct. non Makino: Sasaki in Trans. Nat. Hist. Soc. Form. 18: 179. 1928, p. p.

Differs from var. *sinica* in that the relative length of the rudimentary pistil to the sepal is in the ratio of 3:2 (according to Li Huilin).

Found in Taiwan province.

17b. ssp. *aemulans*

(Rehd. et Wils.) M. Cheng, stat. nov.—*Buxus microphylla* Sieb. et Zucc. var. *aemulans* Rehd. et Wils. in Sarg. Pl. Wils. 2: 169. 1914, p. p. quoad typ. tantum; Pictorial Handbook of Higher Chinese Plants 2: 628. 1972.—*Buxus microphylla* Sieb. et Zucc. ssp. *sinica* var. *aemulans* (Rehd. et Wils.) Hatusima in Journ. Dept. Agr. Kyusyu Univ. 6 (6): 330-331, f. 25, q, Pl. 19(4), f. 2. 1942.—*Buxus microphylla* Sieb. et Zucc. var. *kiangsiensis* Hu et Chen in Journal of Plant Taxonomy (in Chinese) 1 (2): 227. 1951, syn. nov.

This ssp. commonly has leaves elliptical lanceolate or lanceolate, 2 - 3.5 cm. long, 1 - 1.3 cm. wide, both ends acuminate, apex pointed or slightly obtuse, midrib prominent on both surfaces, underside smooth or slightly rugose when dried. Inflorescence and flower same as ssp. *sinica*. Capsule normally 7 mm. long, persistent style 3 mm. long.

Found in Anhui, Zhejiang, Fujian, Jiangxi, Hunan, Hubei, Sichuan, Guangdong and Guangxi; grows beside streams on rocks or in bushwood, altitude 600 - 2000 m. Type specimen collected in western Hubei.

The leaves of this ssp. can vary greatly, from rhomboid-

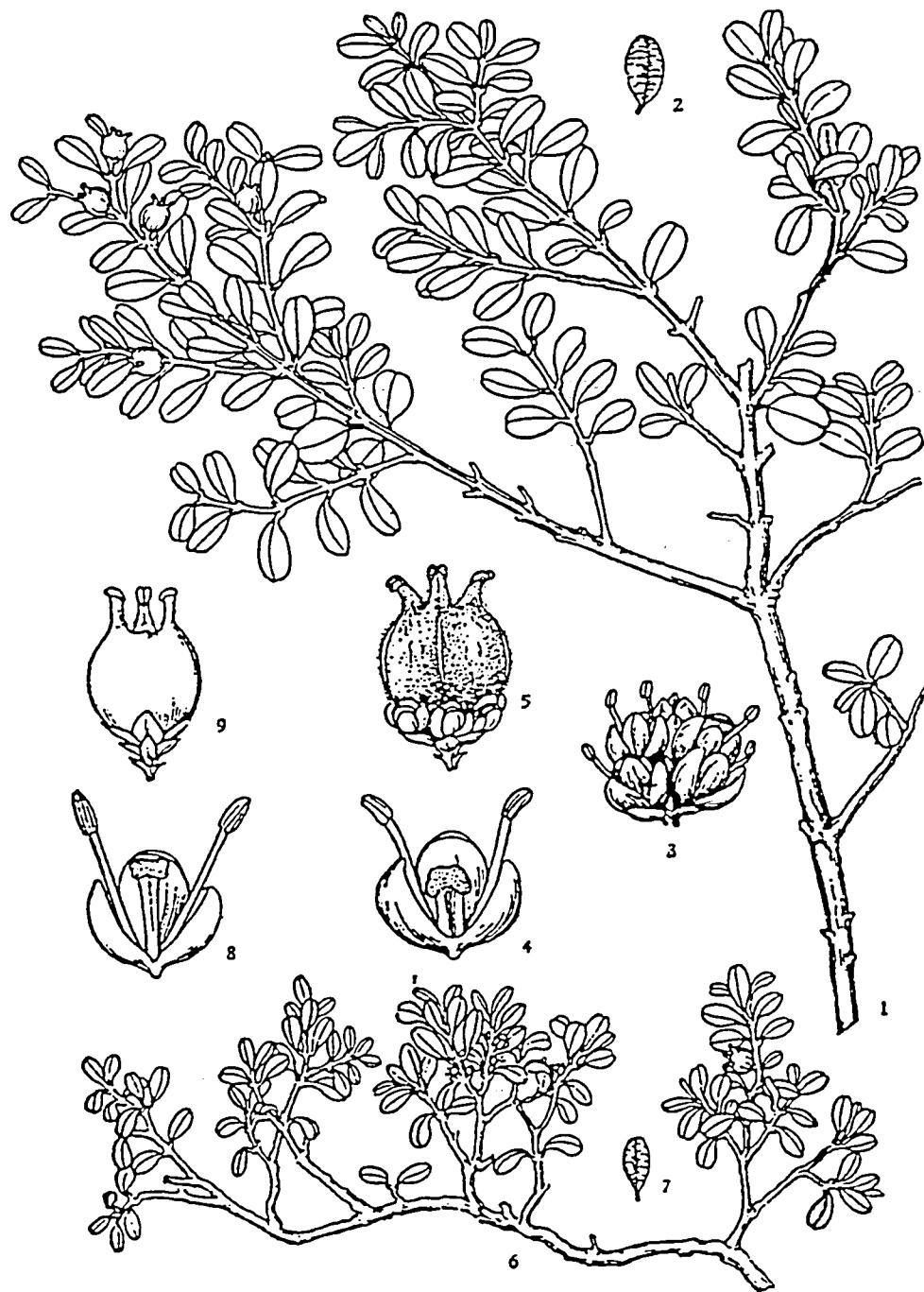


FIGURE 12

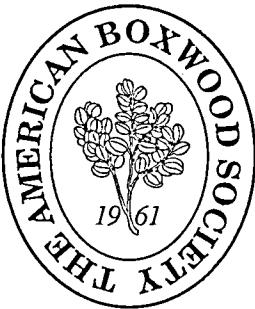
ovate to narrowly lanceolate, and there can also be variations in the length of the rudimentary pistil and whether or not the capsule is hairy. Those found in Nanqiu in Hunan, the Wuyishan region of Fujian, Huangshan in Anhui, and Jinfoshan in Sichuan all show different forms. Some have lorate-lanceolate leaves, 7 - 8 cm. long; some have rhomboid leaves, 4 cm. long; those found in Huangshang have leaves oblong-lanceolate, obtuse, rudimentary pistil slightly longer than sepal; some of the plants found in Jinfoshan initially have finely puberulous capsules. Since ssp. *aemulans* has so many different forms, it cannot be included as a variety, and therefore this text promotes it to a ssp.

Buxus sinica is the representative species of the East Asian genus Buxaceae, and has a wide distribution and many variations, therefore several of the different species derived from it such as *B. hebecarpa* from western China and *B. rugulosa* from south-western China, are closely related to it. Moreover, a species such as *B. japonica* Müll.-Arg.—*B. microphylla* Sieb. et Zucc.* var. *japonica* Rehd. et Wils. (which has glabrous branchlets and leaves)

has only partial differences due simply to the different geographical distribution. The author has discovered some plants in *Buxus sinica* ssp. *sinica* and in ssp. *aemulans*, having branchlets with very few hairs, or even completely glabrous, with only residual pubescence on the petiole, which is sufficient proof that *Buxus sinica* shows a tendency towards gradual change in the direction of *B. japonica*.

Apart from this, *B. sempervirens* L., which is found in southern Europe, northern Africa, and the Caucasus, also has hairy branchlets and petioles, like *Buxus sinica*; but none of the lateral veins are evident on the leaf surface, and the length of the rudimentary pistil is only half that of the sepal. It is cultivated in China.

* NOTE: In Japan there is no naturally growing *B. microphylla*, Sieb. et Zucc. (1845). It is in fact propagated from *B. japonica* Müll.-Arg. (1867). The first name mentioned has been retained because it was assigned earlier, and so according to international plant nomenclature regulations, has precedence.



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