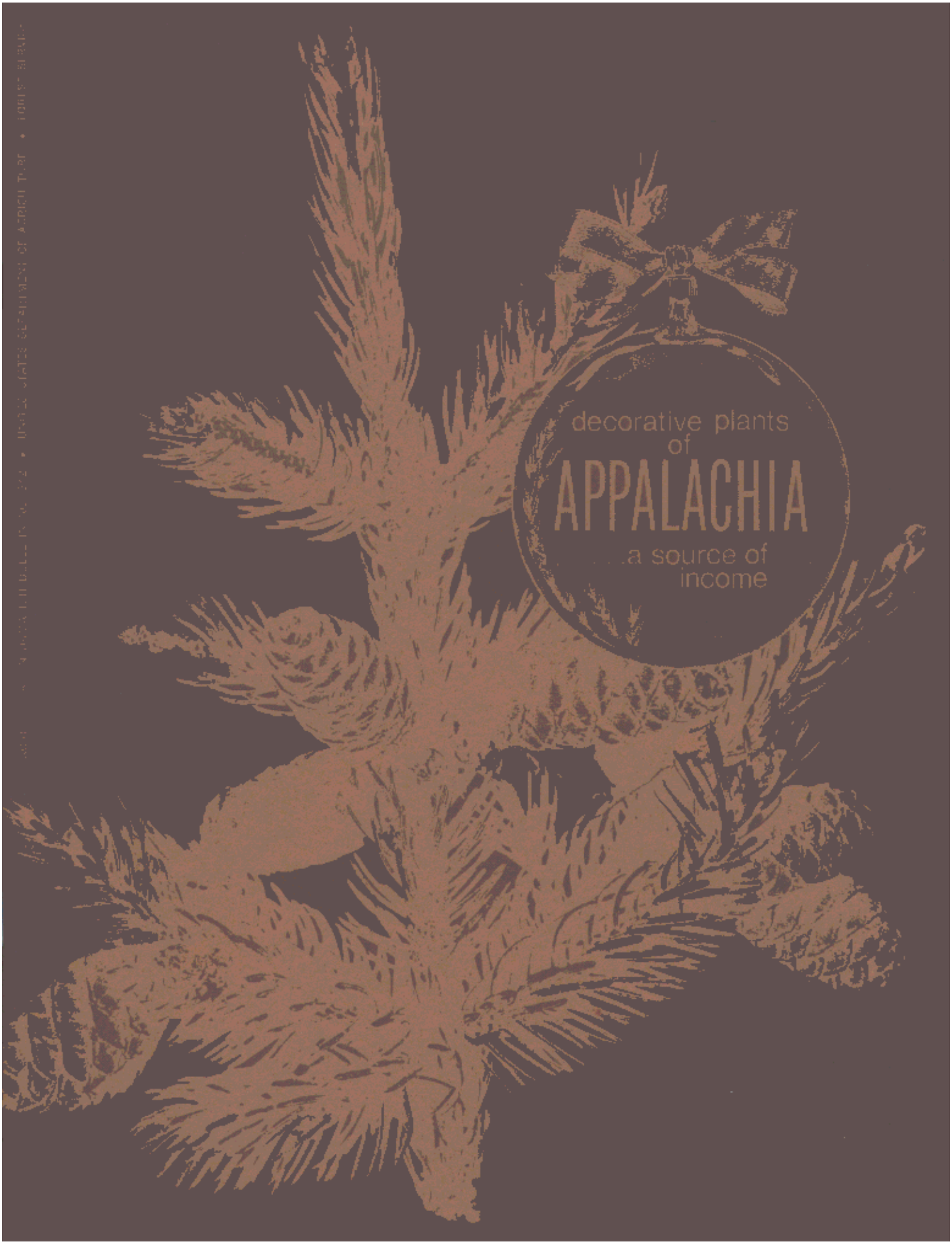
decorative plants
of
APPALACHIA
...a source of
income

AGRICULTURE
INFORMATION
BULLETIN NO. 342
UNITED STATES DEPARTMENT OF
AGRICULTURE
FOREST SERVICE

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November 1970

DECORATIVE PLANTS of APPALACHIA . . . a source of income

by Thomas C. Nelson and Malcome J. Williamson[1]

The forests of Appalachia contain a riot of color, especially in the spring and in the fall. Many of the trees and shrubs that lend color and beauty to the Appalachian forests are highly prized by homeowners and landscapers for domestic use. Thus there is a considerable market for this type of material in the urban areas of the East. Some landowners and others have capitalized on the opportunity to collect and sell decorative plants and plant materials. In many areas, however, the potential for this type of enterprise has not been realized.

This bulletin summarizes the present information on Appalachian forest plants commonly sold for decoration. It tells how to recognize the plants and how they are used in the decorative trade.

Numerous income-producing opportunities are available to the collector of forest products, but these products must be harvested or developed, and marketed. These forest materials can provide the woodland owner with an interim return while he is waiting for his timber to mature. Special Forest Products for Profit (USDA Forest Service Agr. Inform. Bull. 278, 1963) describes how decorative plant materials can bring added income to a rural area. The bulletin contains case histories of people with interesting hobbies and how they have developed them into successful businesses. Many people harvest the materials with which they work, and some market their products in highway workshops, retail stores, or craft shops. These people benefit both themselves and their community.

[1] Director, Southern Forest Experiment Station, USDA Forest Service, New Orleans, La., and Silviculturist, Northeastern Forest Experiment Station, USDA Forest Service, Berea, Ky., field office, maintained in cooperation with Berea College.

APPALACHIA

This bulletin on the Appalachian area contains more specific information on decorative plants and plant materials than AIB-278, and it is limited to one geographic area. It is concerned with the mountain areas of Alabama, Georgia, Kentucky, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia (fig. 1).

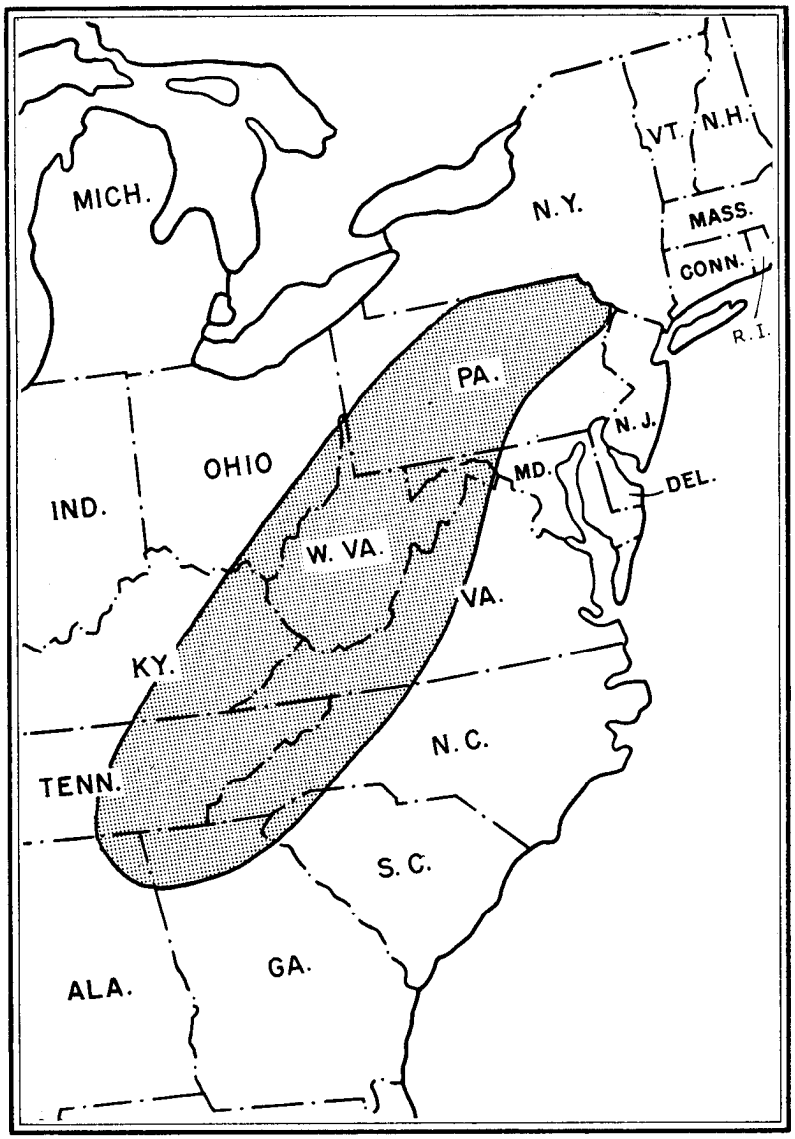

Figure 1.—The Appalachian area referred to in this bulletin.

Legal Restrictions

Many States and many local governments have passed laws concerning the collecting and transporting of plant materials. In most States certain specified plants are protected by law and cannot be gathered legally. Some laws prohibit transportation across State lines of certain plant materials. Of course, general trespass laws restrict the entrance for any purpose on lands owned by another. Information concerning these laws is available at the local courthouse and from the Attorney General of the State.

In addition to State and local laws, Federal regulations apply to Federally owned lands (table 1). For example, permits are required for gathering plant materials in National Forests and collecting is prohibited in National Parks. Before collecting any plant material, commercially or for pleasure, a collector should consult his County Extension Agent or State conservation agency to determine what laws are in effect in the area.

Courtesy, as well as legal restriction, requires the collector to obtain permission to collect on land other than his own. The collecting should be done so that a future crop is insured. No collecting should be done along roadsides or similar areas where the plant materials have a definite esthetic value.

Local Help

Before the collection of plant materials begins, the collector should be sure that a market is available for his product. He should also make sure that his product meets the buyer's specifications. Anyone needing assistance in planning for the production of the special forest products discussed in this bulletin should contact his local service forester, county extension agent, or other U.S. Department of Agriculture representative in the area.

Harvesting and marketing requirements for each of these many decorative plants differ according to location, season, and planned use. Therefore, every collector must plan his efforts to meet the local market demands. Specific recommendations cannot be made that will apply throughout the region; they are determined by the particular sale outlet. Local sources can best supply this information.

Table 1. — *Some examples of legal restrictions on the collection and transportation of decorative plant materials in Appalachia*

State	Legal restrictions
Alabama.....	General trespass laws. Special laws for shipping plant materials from quarantined areas.
Georgia.....	General trespass laws. License required for dealers and collectors of native plants. Plant pest regulations.
Kentucky.....	Trespass law. Plant pest regulations. Certificate from State Entomologist required for shipping plants or plant parts.
Maryland.....	Trespass law. Plant pest regulations. Certificate from State Entomologist required for interstate transportation. Specific regulations for transporting Christmas trees and boughs.
North Carolina.	Specific trespass laws requiring written permit or bill of sale to collect and transport decorative plants or plant mate-.
Ohio.....	Trespass law. Plant pest regulations. Inspection by Division of Plant Industry, OHIO Department of Agriculture. Special laws for shipping plant materials from quarantined areas. License required to sell.
Pennsylvania...	Specific trespass laws. Permission must be obtained from the landowner to collect plants or plant parts for decorative purposes. Plant pest regulations.
South Carolina.	Trespass law. Subject to Nursery Regulations. Special laws for shipping plant materials from quarantined areas. Plant pest regulations.
Tennessee.....	General trespass law. Plant pest regulations.
Virginia.....	Specific trespass laws requiring written permit or under personal direction of the owner to collect plants or plant materials. Plant pest regulations.
West Virginia...	Trespass liability law. Requires permission from owner to collect plants or plant parts. Plant pest regulations.

MAJOR DECORATIVE PLANTS

For convenience, the major decorative plants of Appalachia have been divided into four groups: Coniferous trees, hardwood trees, shrubs and vines, and lesser plants.

Coniferous Trees

Fir

Two species of eastern fir are widely used for decoration-Fraser fir *(Abies fraseri* (Pursh) Poir.) and balsam fir *(A. balsamea* (L.) Mill.) (figs. 2, 3, and 4). Their uses are nearly identical. Fraser fir is also called southern balsam, eastern fir, Fraser balsam fir, she-balsam, and southern fir. Balsam fir is most often called simply balsam.

Fir can be identified by its narrow, linear, flattened needles, blunt or notched at the tips. The needles are dark green above with two prominent whitish lines underneath. On young trees, the needles grow in two rows on the twig.

Fraser fir is found naturally and abundantly in western North Carolina, eastern Tennessee, and southwestern Virginia, usually between 4,000 and 6,000 feet.

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Figure 2.—Fraser fir, cones and foliage.

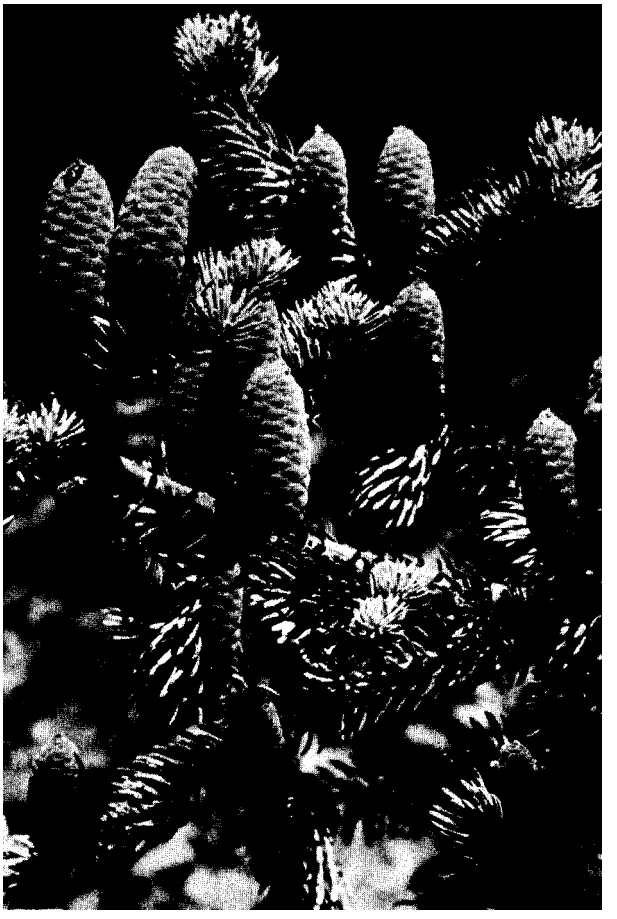

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Figure 3.—Balsam fir, cones and foliage.

Balsam fir is a cold-climate tree, found locally at high elevations in. Pennsylvania, West Virginia, and Virginia.

In recent years, increasing amounts of Fraser fir have been planted for Christmas trees and boughs, Most successful plantings in the southern highlands have been at elevations of 2,000 to 3,000 feet in cool, moist locations on acid soils (Williams 1958). [2] Some balsam fir is also being planted for Christmas use now that planting stock is available.

[2] Publications given by author and date in text are listed in References, pages 30-31.

F-472136

Figure 4.—Balsam fir, Christmas tree.

Both firs are widely used for Christmas trees. In addition, boughs of both are used for roping, wreaths, and garlands, principally at Christmas time, throughout the Eastern United States. The more than 4 million balsam fir trees produced in 1964 accounted for 12 percent of the U.S. Christmas tree market (Sowder 1966). Most of these trees were cut outside of Appalachia.

Fir retains its needles unusually well when the weather is warm, so it can be harvested earlier than most Christmas greens. Rules for efficient tip gathering can be found in the Christmas Wreath Maker's Manual (Rogers et al. 1963).

In stands that are being thinned, trees should be marked for cutting. The better shaped trees can be sold for Christmas trees, the poorer shaped for boughs and greens.

Fir can be propagated by stump culture. When a tree is cut, the bottom whorl of limbs is left below the stump cut. These limbs will turn upward, and by cutting all but the most vigorous limb another tree grows from the stump.

F-518162

Figure 5.—Eastern redcedar, juvenile needles (enlarged).

F-490542

Figure 7.—Eastern redcedar, adult needles.

Figure 6.—Eastern redcedar, young tree.

F-482022

Eastern Redcedar

Eastern redcedar *(Juniperus virginiana* L.) is not a cedar, but a juniper (figs. 5, 6, and 7). The young tree can be distinguished by its sharp-pointed, needlelike leaves. As the tree ages, scalelike leaves develop and only a few sharp-pointed leaves remain. The cone closely resembles a berry, dark blue with a whitish bloom.

Eastern redcedar is the most widely distributed conifer in the Eastern United States (Williamson 1957). It grows throughout Appalachia on many sites but more frequently on dry sites, especially those with limestone outcroppings. Pure stands are found on abandoned farmlands and dry uplands.

The eastern redcedar Christmas-tree market is predominantly in southern metropolitan areas. However, greens are sold throughout Appalachia. In 1964 over 2¼ million eastern redcedar trees were marketed, 7 percent of the national total. The boughs are also sold throughout Appalachia, but are not as popular as balsam, pine, hemlock, and laurel. The wood with bark intact is sometimes used for pe. manent fireplace logs.

Hemlock

Two species of hemlock trees are native to Appalachia: Carolina hemlock *(T. caroliniana* Engelm.) and eastern hemlock *(Tsuga canadensis* (L.) Carr.) (figs. 8 and 9).

Hemlock can be identified by its small solitary, flat blunt needles with two white lines beneath. The dull-green foilage is dense. Small delicate cones form on the ends of the twigs. The rough, dark grayish-brown bark is broken into irregularly rounded ridges by deep fissures. The tree usually reaches a height of 50 to 80 feet, although it can become much taller in the mountains of Kentucky, North Carolina, Tennessee, and West Virginia.

Eastern hemlock is more common than Carolina hemlock. It has shorter needles and cones, and its needles are arranged in two rows along a twig. The two species are probably not differentiated in the decorative trade.

Eastern hemlock is found over most of the Appalachian region, except the Piedmont of Georgia and Alabama. Carolina hemlock is confined to mountains from southwestern Virginia to northern Georgia.

In the Appalachian Mountains, hemlock is found on a variety of sites, but it grows best on deep fertile soils. In southern Appalachia hemlock occurs between 2,000 and 5,000 feet above sea level. Northward on the dissected Allegheny Plateau, the species is found between 1,000 and 3,000 feet. At lower elevations and in the southern extension of its range, the tree is generally restricted to moist cool valleys, north and east slopes, coves, benches, and sides of ravines or hollows under cliffs.

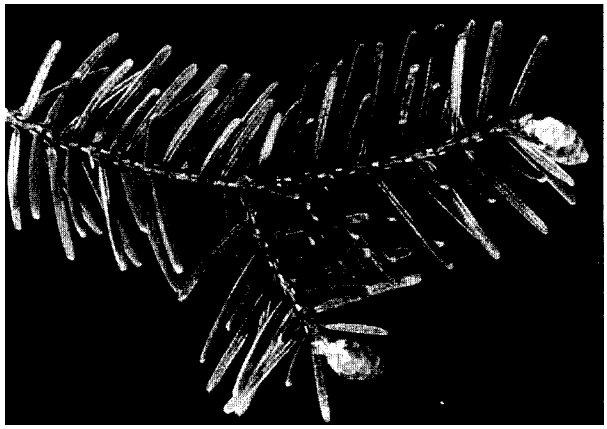

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Figure 9.—Eastern hemlock, juvenile: cones and foliage.

Although some hemlock Christmas trees are sold, the demand is mainly for boughs and cones. They are used in wreaths, sprays, garlands, ropes, and table decorations. Cones are also used in corsages and other small decorations. Most hemlock decorations are sold in the East during the Christmas season.

Hemlock is not ideal for indoor decorations because it loses its needles more rapidly than some other conifers.

In most areas the supply of hemlock is sufficient for collecting. Boughs can be picked up during logging. If it is necessary to fell trees for boughs, only poorly formed trees should be cut.

Figure 8.—Carolina hemlock, cones and foliage.

F-518163

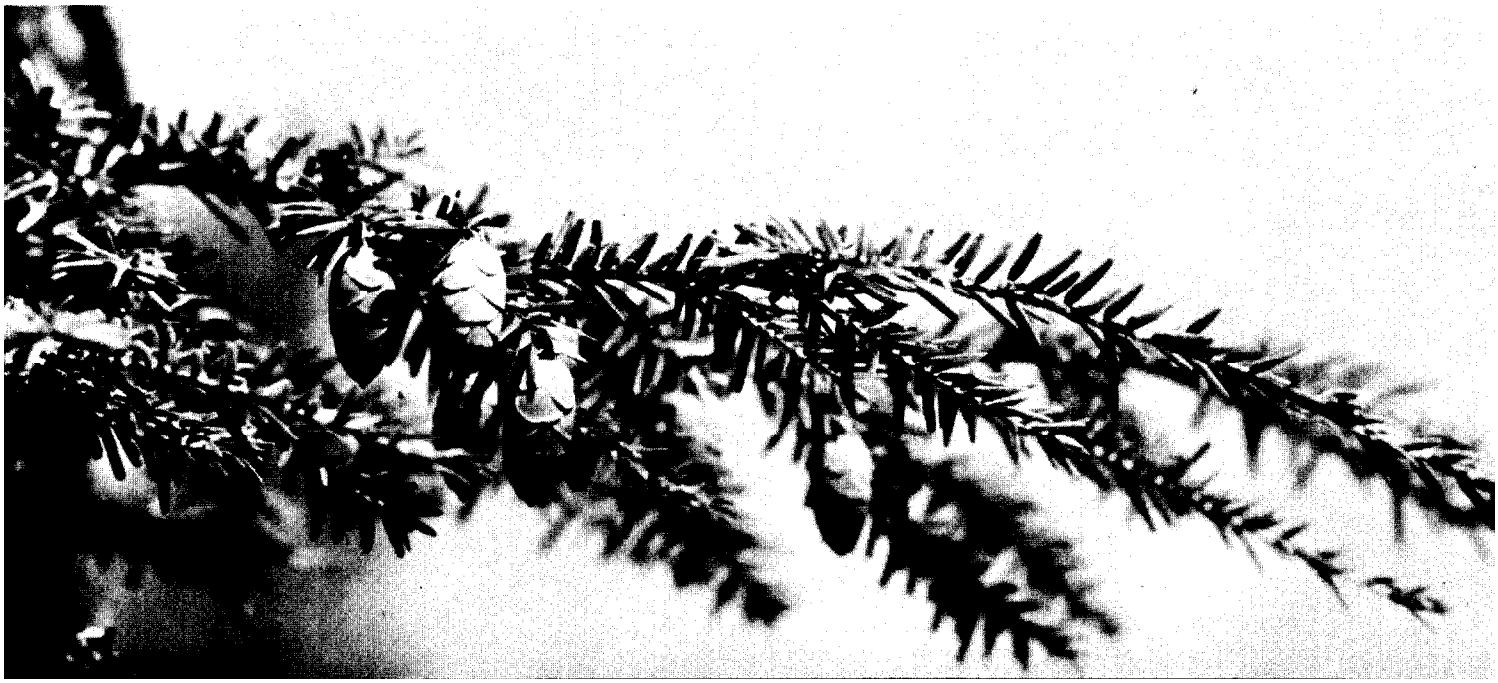

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Figure 10.—Spruce: red; cones and foliage.

Spruce

Two native spruces: Red *(Picea rubens* Sarg.) (fig. 10), and black *(P. mariana* (Mill.) B.S.P.) (figs. 11 and 14); and three non-native spruces: Norway *(P. abies* (L.) Karst.) (figs. 12 and 13) blue *(P. pungens* Engelm.), and Black Hills *(P. glauca* var. *densata* Bailey) are grown in Appalachia for Christmas trees.

Spruces can be identified by their four-sided needles, arranged singly on branches and attached to a short, woody stalk that remains on the twig after leaf fall. The cones hang and have thin cone scales.

In Appalachia, red spruce grows naturally in high mountains from Pennsylvania south to western North Carolina and eastern Tennessee. It grows best in the southern Appalachians where it is confined to slopes and mountaintops. Red spruce has sharp-pointed leaves while those on black spruce are blunt. Cone scales of red spruce are nearly smooth while those of black spruce are jagged edged. Both species have cones 1 to 2 inches long.

Black spruce, a northern tree, is found southward to the Pennsylvania part of Appalachia, where it occurs largely in swamps and bogs (Grimm 1950).

Norway spruce, a native of central and northern Europe, has been planted in many sections of the United States. It grows well on a wide variety of sites in Appalachia from northern Pennsylvania to northern Georgia and Alabama.

All five spruces are used for Christmas trees, and they accounted for almost 10 percent of all Christmas trees produced in the United States in 1964 (Sowder 1966). Black spruce accounted for 7 percent, Norway spruce less than 2 percent, and the other three less than 1 percent each.

Spruce boughs are used in wreaths, sprays, garlands, and ropes, as well as table decorations. This species is not desirable for indoor use, because it does not retain its needles in a warm house but is used for outdoor decorations.

Norway spruce cones are sold commercially for decorative purposes. Closed cones are preferred to open ones.

Usually enough red and black spruce is available in natural stands. A sizable “processed tree” industry using black spruce operates most of the year where cold storage facilities are available. Small trees are cut and spray-painted for table decorations.

In cutting forest trees, good forestry practices should be followed. Trees that do not have the form or fullness for Christmas trees can be cut for greens.

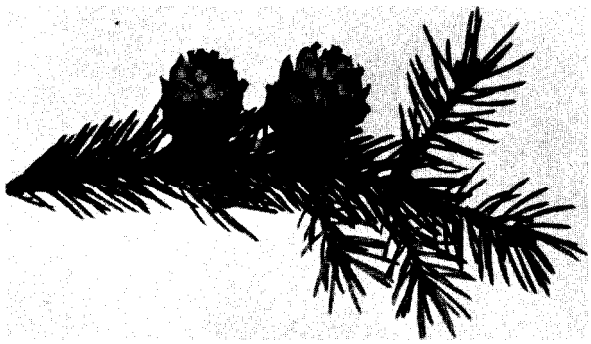

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Figure 11.—Spruce: black; cones and foliage.

F-490796

Figure 12.—Spruce: Norway, branch and cone.

F-472135

Figure 13.—Spruce: Norway.

F-482021

Figure 14.—Spruce: black.

F-490444

Figure 15.—Eastern white pine, foliage.

F-482016

Figure 16.—Eastern white pine, young sheared tree.

Eastern white pine

Eastern white pine *(Pinus strobus* L.) is easily distinguished from the other pines of eastern North America by its soft, flexible, bluish-green needles, regularly arranged in bundles of five (figs. 15 and 16). The bark on young trees is smooth and greenish brown. On old trees it is dark gray and shallowly fissured. Mature trees commonly attain heights of about 80 feet and trunk diameters of 2 to 3 feet.

The cones require 2 years to mature. They are narrowly cylindrical, from 4 to 8 Inches long, and usually slightly curved. Frequently there are droplets of fragrant gummy resin or pitch on the cones.

White pine is found throughout the Northeast and southward in the Appalachians to northern Georgia and Alabama. It grows on practically all the soils within its range, but it is found most often on well-drained sandy soils. In Appalachia white pine is most commonly found on northern aspects, in coves, and on stream bottoms.

White pine boughs and roping are sold extensively at Christmas throughout the East and Midwest. They are commonly advertised in the florist trade journals. In addition, an increasing number of white pine trees are being used for Christmas trees because they hold their needles well. The cones are often used in wreaths, garlands, sprays, and table arrangements. Forest tree nurseries and tree seed dealers also buy large quantities of cones. In recent years, decorations consisting entirely of cones, or cones combined with nuts, acorns, seeds, and seed pods, have become popular. Many decorative uses for cones extend through the winter season.

The supply of eastern white pine is not limited. Boughs can be harvested after logging operations or they can be sold as a by-product of timber stand improvement. After pruning, white pine plantations are a good source of boughs.

Scotch pine

Scotch pine *(Pinus sylvestris* L.), a European tree, has been widely planted throughout the East (figs. 17 and 18). Its needles, arranged in bundles of two, are from 1½ to 3 inches long, bluish green, stout, stiff, and more or less twisted. The most striking feature of Scotch pine is the bright orange-red flaky bark of its upper trunk and branches. On the lower trunk the bark is grayish brown and rough.

Scotch pine is more adaptable than any other commonly grown Christmas tree species. It can be grown from Canada to Georgia (Nelson 1963). This pine grows well over a wide range of sites, but does best on old fields with sandy loam soil of no more than moderate fertility. Altitudes of more than 3,000 to 4,000 feet, poorly drained wet soils, and extremely dry ridges or upper slopes, should be avoided.

Scotch pine has recently become the most widely used Christmas tree in the United States. In 1964 it accounted for 27 percent of the production. Its boughs are also sold at Christmas, but not as extensively as other species.

Numerous publications are available on planting and managing Scotch pine for Christmas tree production (Chapman and Wray 1957).

The top-quality trees in a plantation should be marked, cut, and graded for Christmas trees. Misshapen or partially damaged trees can be cut up and sold for greens. Buyers usually require that boughs be tied in bundles of 5 to 50 pounds. Branches should be cut into 2-foot lengths and tied with strong cord.

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Figure 18.—Scotch pine, young tree.

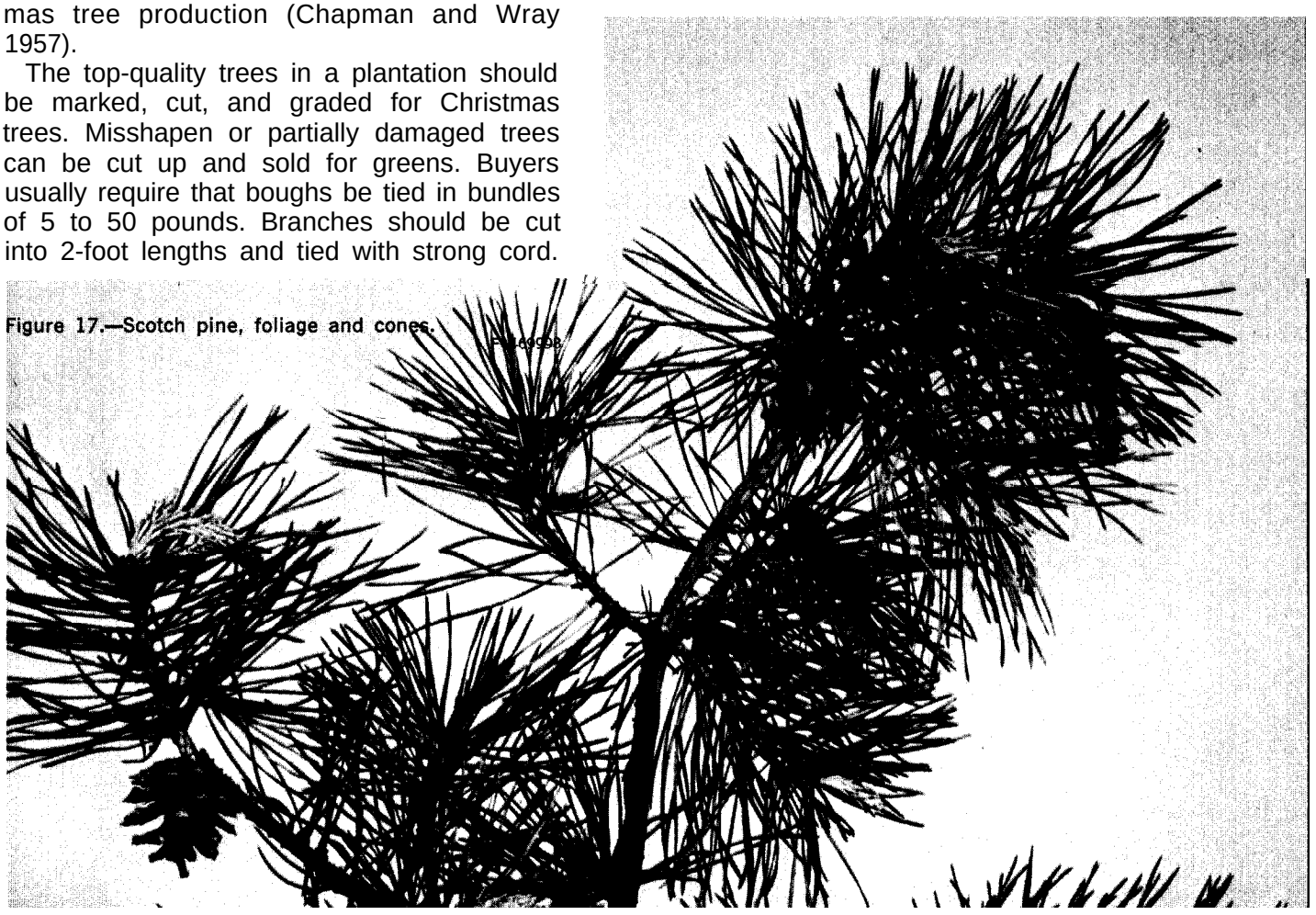

Figure 17.—Scotch pine, foliage and cones.

Figure 19.—Virginia pine, cone and foliage.

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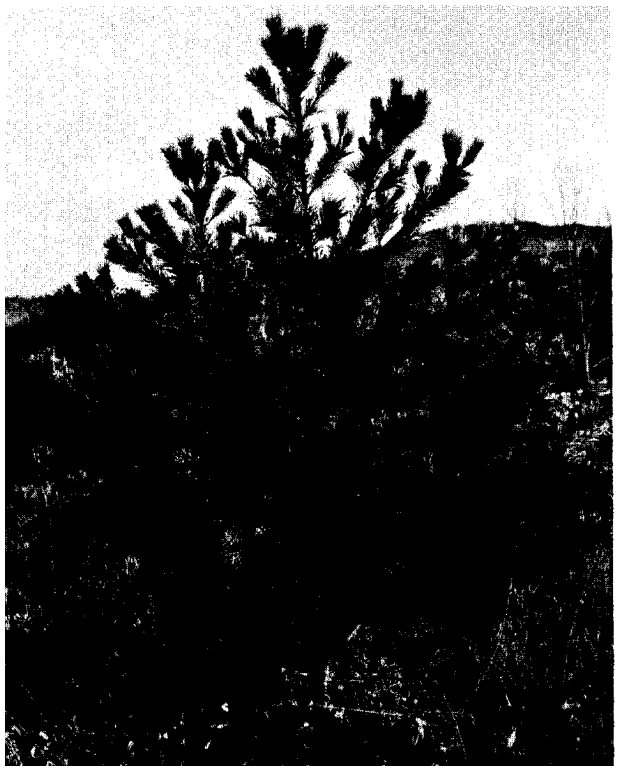

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Figure 20.—Virginia pine in an old field.

Virginia pine

Virginia pine *(Pinus virginiana* Mill.) is also known locally as scrub pine, poverty pine, Jersey pine, North Carolina pine, or spruce pine (figs. 19 and 20). It looks much like Scotch pine, which no doubt confuses some unknowing Christmas tree buyers, The grayish-green needles are arranged in bundles of two; they are stiff, sharp pointed, and closely distributed along smooth, tough branchlets. The purplish waxy bloom on slender young shoots is a good identifying feature.

Virginia pine is common all over Appalachia except in northern Pennsylvania.

Pure stands of Virginia pine frequently occur on abandoned agricultural land, but they persist only on sterile sand and clay soils.

Virginia pine Christmas trees (almost 370,000 trees in 1964) and boughs are used extensively. The cones are also sold, mainly for seeds. Cones of this species are one of the most difficult to collect, and their collection for decoration is usually not profitable.

Unless Virginia pine Christmas trees have been sheared, they are usually too poor to compete with plantation-grown Scotch pine. However, some well-shaped Christmas trees for local use can usually be harvested when old-field Virginia pine is thinned. Greens and boughs can be cut from poor, misshapen trees.

Red pine

Red pine *(Pinus resinosa* Ait.) also called Norway pine, can hardly be confused with any of the other native pines in the Eastern United States. This species has needles 4 to 6 inches long that are slender, straight, sharply pointed, and flexible. They occur in clusters of two. The cones are about 2 inches long and egg-shaped when closed, but nearly spherical when open. They grow at right angles to the branches (figs. 21 and 22).

In Appalachia, red pine occurs naturally only in northern Pennsylvania and on a few peaks in northeastern West Virginia but it is planted in its natural range and south of it in the Middle Atlantic States. It survives and develops satisfactorily on moderately dry sites and does best on well-drained sand and clay loams with good moisture and average fertility. Extremely dry ridges or swampy, poorly drained soils should be avoided as planting sites.

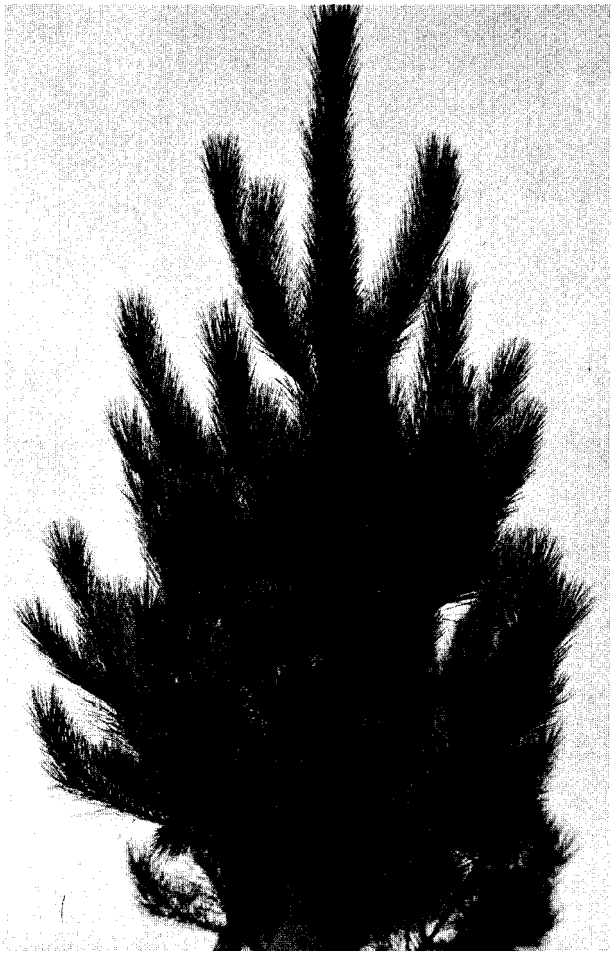

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Figure 21.—Red pine, young tree.

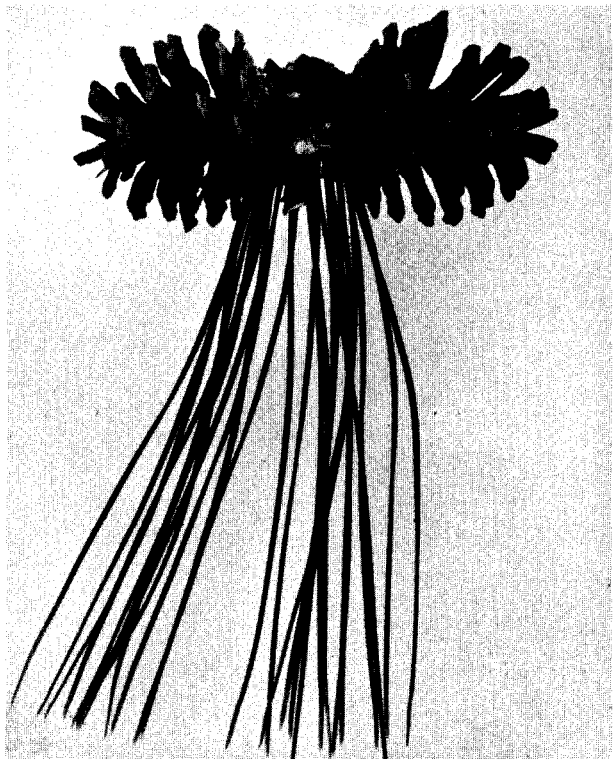

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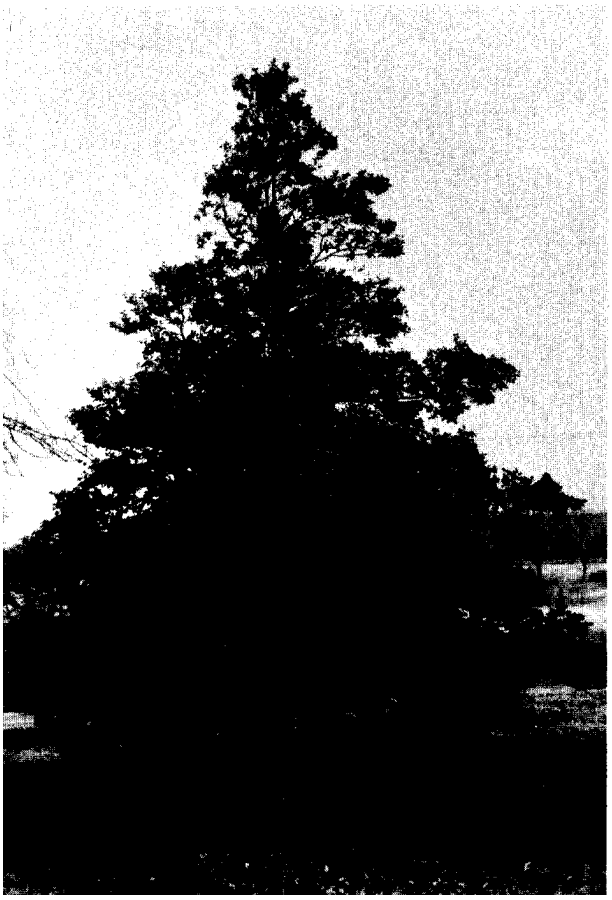
Figure 22.—Red pine, cones and needles.

Red pine boughs and roping are sold for Christmas decorations but not as commonly as white pine. The cones are used in wreaths and other decorations and sold to seed dealers.

Red pine is a favorite Christmas tree in the North and Midwest. United States production of red pine Christmas trees in 1964 was about 2 million—6 percent of total production.

Red pine boughs and branches can be harvested after logging operations. If trees must be felled to obtain greens, either in natural stands or plantations, only poorly shaped trees should be harvested.

Pruning in plantations before the Christmas holidays can also be profitable. Lorenz and Fox (1950) in southern Illinois have demonstrated that the entire cost of pruning an 8-year-old red pine plantation can be paid from the sale of Christmas greens. Pruning approximately 3 feet of live crown per tree obtained yields of nearly 12 pounds of greens per tree and over 7 tons per acre.



F-518165

Figure 23.—American holly, tree about 25 feet tall in full fruit.

Holly

American holly *(Ilex opaca* Ait.) is a familiar sight during the holiday season in wreaths, sprigs, and sprays (figs. 23 and 24). It is usually a small- or medium-sized tree from 15 to 40 feet tall. The leaves are evergreen, sharply toothed, stiff, and leathery in texture. They are smooth, glossy, dark green above, and yellowish green beneath. The fruits of female trees are berrylike and bright red, they usually contain four nutlets.

Individual trees occur throughout Appalachia, and natural stands of holly are found in southern Pennsylvania and from western North Carolina southward and eastward. The tree develops its most lush foliage outside of Appalachia in the Delmarva Peninsula on the eastern shore of Chesapeake Bay. Although capable of growing on poor soil, the best growth is achieved on deep, fertile, moist soil, and the largest trees are found near streams.

Holly can best be harvested by careful pruning with sharp tools. Branches should not be cut all the way back to the main trunk of the tree. The cone-shaped form of the crown should be maintained. Unusually long or scraggly side shoots that detract from the symmetry of the tree should be pruned. The leader can also be pruned back to shape the tree. By pruning out shoots, the growth of twigs on the lower branches can be increased, thus increasing the future yield of the tree. Female hollies 15 years old should be nearly 12 feet tall and produce about 20 pounds of berried holly sprays each year.

An increasing number of orchards of American, English, and Chinese holly are being planted. Both male and female trees are necessary to produce berries.

Growing holly requires considerable knowledge. [3] An acre of well-tended holly on a good site will produce as much as a ton of berried sprays and sprigs each year.

Much of the eastern crop of natural holly is now cut from natural stands on the Atlantic Coastal Plain from Maryland to Texas. In addition, large volumes are cut from the inland valleys of Tennessee, Kentucky, and West Virginia. Holly markets are prevalent throughout the entire East.

[3] The Holly Society of America, Inc., Bergner Mansion, Baltimore, Md. 21216, provides information to its members on the growing of holly and on identification of the various species.

Figure 24.—American holly, leaves and fruit.

F-518164

Figure 25.—Sweetgum, leaves and seed ball.

F-516177

Sweetgum

Sweetgum *(Liquidambar styraciflua* L.), also known as redgum, sapgum, sycamore gum, gumwood, and gum, can be readily identified by its glossy, aromatic, star-shaped, five-to-seven-pointed alternate leaves (fig. 25). The corky wings or ridges that develop on its branches are also distinctive as are its brown seed balls or burs, 1 to 1½ inches in diameter, which remain on the tree throughout the winter.

Sweetgum is found in Appalachia principally to the south and west of the high mountains. It is very tolerant of different soils and sites, if not of high elevations.

Sweetgum seed balls or burs are used in wreaths and table arrangements. They can be easily collected during logging operations. Fair seed crops are produced each year and bumper crops every 2 or 3 years.

The seed balls are generally sold to commercial florists, but local markets could be developed. Where seed balls are for sale, people buy them readily.

Oak

Over a dozen of the oak species *(Quercus* spp.), occurring in Appalachia supply decorative materials (figs. 26, 27, and 28). The leaves and acorns from both the red and white oak groups are used. In the fall, leaves are often collected for colorful foliage displays. Oak leaves are also collected during the growing season; they are bleached and dyed or sprayed with variegated metallic paint. Both large and small acorns are frequently used in wreaths and table decorations. A current trend in manufactured decorative wreaths combines cones with acorns, nuts, seeds, and pods (Dengler 1963). Many of these decorations are suitable for occasions other than Christmas.

Open-grown oaks with large crowns generally have an abundant acorn crop. When acorns are collected, the acorn cup should not be separated from the acorn because both are used in decorations. Also, the acorns should be adequately dried to preserve their pleasing appearance.

Abnormally large leaves, for bleaching and dying, can usually be collected from vigorous young oak sprouts.

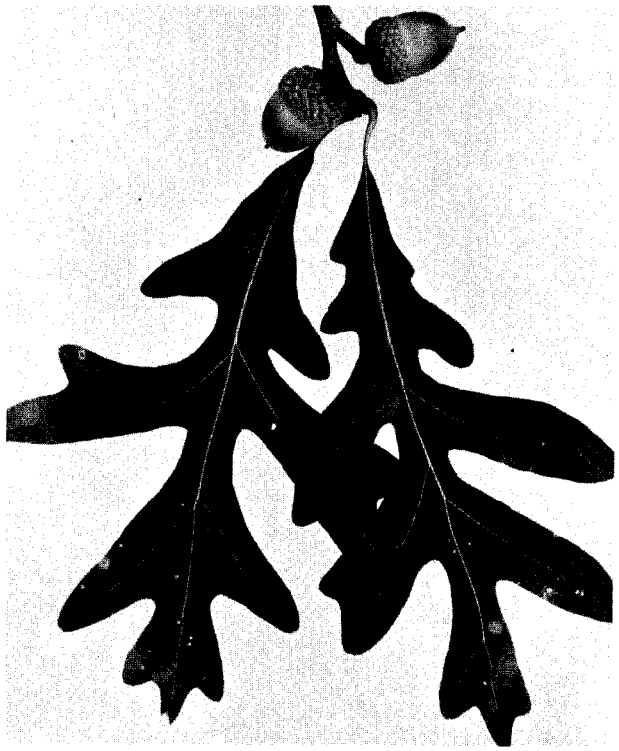


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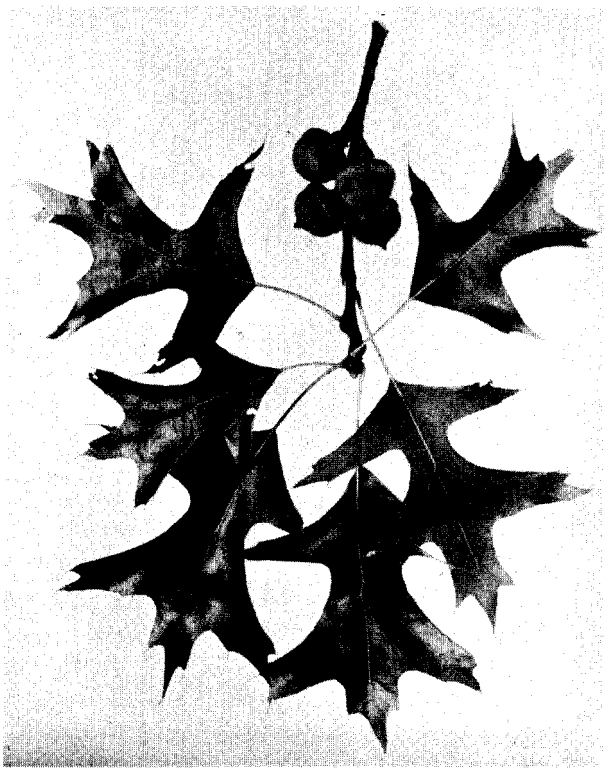
Figure 27.—White oak, leaves and acorns.

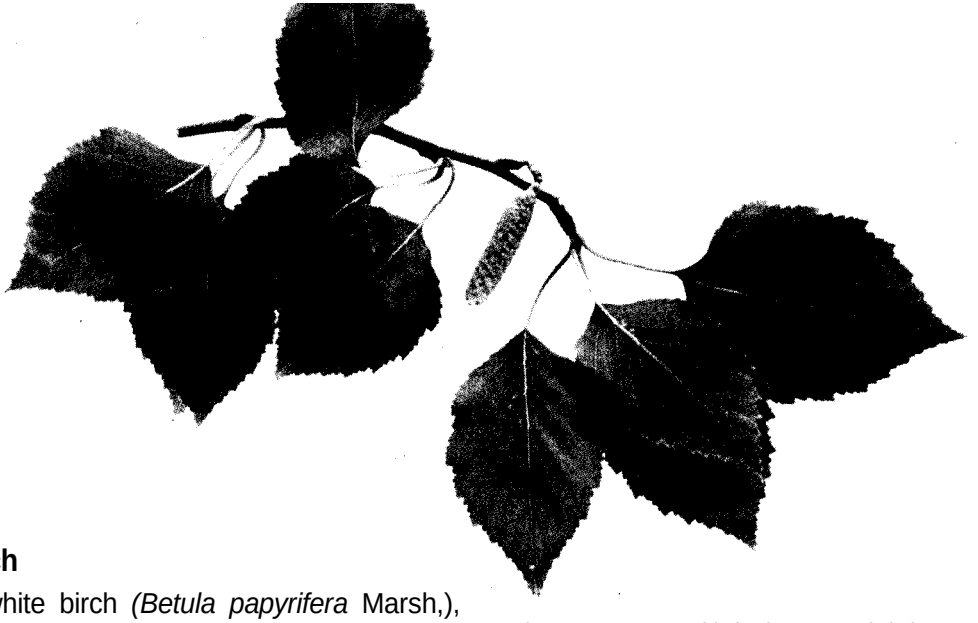


F-490741

Figure 26.—Black oak, leaves and acorns.

F-490710

Figure 28.—Chestnut oak, acorns.



F-490651

Figure 29.—Paper birch, leaves and fruit.

Paper birch

Paper or white birch *(Betula papyrifera* Marsh,), is the only birch used extensively for decoration. It is also known as canoe birch or silver birch (figs. 29 and 30).

The unique character of the bark identifies this species. This tree can be distinguished from other white-barked trees by its lustrous surface and its chalky whiteness that rubs off. The bark separates easily into papery thin layers, and its smooth whiteness is marked by elongated horizontal lenticels.

Paper birch occurs across the entire northern part of North America. In Appalachia it is limited to Pennsylvania and a few high mountains in West Virginia and North Carolina, principally in northern Pennsylvania along the banks of streams or the shores of lakes (Grimm 1950).

Full, round paper birch logs are used for fireplace decorations. In addition, smaller and shorter round lengths of wood are used for table decorations, candlestick holders, yule logs, and the like. Considerable paper birch wood, in the round and with bark intact, is used in the novelties industry. Although the market persists year around, table decorations using paper birch are most common during the holiday season.

Although much of the paper birch used for decoration is cut in States north of Appalachia, the small trees found here can be made into decorations. The wood should be bucked to standard lengths and put in standard-sized bundles. Fireplace wood, for example, is commonly banded into 1/60th cord bundles. Paper birch used as permanent fireplace logs can be sold in northern cities for as much as $150 per cord retail.

Figure 30.—Stems of paper birch.

F-211977

Shrubs and Vines

Bittersweet

Climbing bittersweet *(Celastrus scandens* L.) also known locally as staff tree, shrubby bittersweet, waxwort, false bittersweet, and American bittersweet, is one of the region's most valuable decorative vines (figs. 31 and 32). It can be recognized quite readily in the fall by its orange-colored pods that open slightly and display scarlet covered seeds. This twining vine is sometimes as long as 35 feet.

Climbing bittersweet is found throughout Appalachia but is much more common in the northern part of the region. It is not common in the mountains proper. Most often it is found in moist thickets and along fence rows.

Bittersweet can be propagated and provides a sound economic use for the farm fence row. Van Dersal (1939) states that it can be grown from untreated seeds sown in the fall or stratified seeds sown in the spring. It can also be propagated by layers and root cuttings.

Bittersweet has a market from the time its pods open in the fall through Christmas. It is used extensively in fall decorations and winter bouquets and is normally sold in bunches. Local markets exist throughout the region, especially in cities. Frequently, bunches are sold at roadside stands, together with other farm products.

F-518167

Figure 32.—Bittersweet, fence row planting.

F-518166

Figure 31.—Bittersweet, fruit.

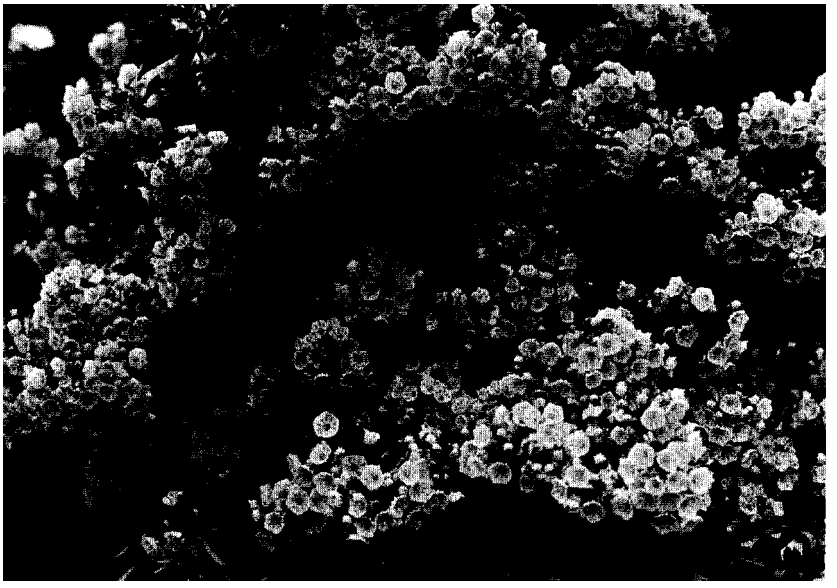


Figure 33.—Laurel, bush in flower.

F–176397

Mountain-laurel

This plant *(Kalmia latifolia* L.) is commonly called mountain-laurel in the North and ivy in the South (figs. 33 and 34). It is also known as calico-bush and spoon-wood. It can be readily identified by its evergreen, elliptical, leathery leaves. This laurel commonly grows in thickets, reaching heights of more than 20 feet in the South and 10 feet in the North. Clusters of white to pinkish flowers bloom in April or May.

Mountain-laurel occurs from Canada to Florida. It is most common in the southern Appalachians where it forms such dense thickets that it is hard for young growth of desirable trees to get started.

The branches and boughs of mountain-laurel are commonly used, especially for wreaths and roping. Laurel roping is advertised in most of the eastern cities during the Christmas holiday season.

Mountain-laurel is plentiful, but because of its esthetic value along roads, it should not be harvested in such places.

Stems cut near the ground readily sprout, and new material can be harvested from the same stem for several years. Cutting the foliage does not harm the plant provided the roots are not injured; in fact, an occasional severe pruning results in bushier, better plants.

Figure 34.—Laurel, foliage.

F–518168

Figure 35.—Rhododendron, bush in flower.

F-443190

Rhododendron

The most common rhododendron and perhaps the most useful for decoration is rosebay rhododendron *(Rhododendron maximum* L.) (figs. 35 and 36). It is also known as great laurel, great rhododendron, white rhododendron, and rosebay. This rhododendron is a shrub or small tree that grows up to 30 feet tall. The leaves are evergreen and thick, dark green above, and lighter and sometimes hairy underneath. The leaves may be as long as 10 inches. The flowers are white or pinkish and occur in large clusters at their peak in June or July.

Two others, Catawba rhododendron *(Rhododendron catawbiense* Michx.) and Carolina rhododendron *(R. carolinianum* Rehd.) are also important species. Their leaves are smaller than those of rosebay rhododendron and therefore used less for decoration. They are now found mainly in isolated areas because so many have been transplanted as ornamentals.

Rhododendron is very common in the southern mountains, many times forming dense thickets under a forest overstory. It grows best on acid soil.

Figure 36.—Rhododendron, flowering branch.

F-99597

Winterberry

Winterberry *(Ilex verticillata* (L.) A. Gray) also known as common winterberry, black-alder, fever-bush, and red-berried alder, is a large deciduous shrub with red berries (fig. 38). It grows to about 25 feet in height. Its leaves which turn black in autumn, together with its bright carmine-red berries, make it the prettiest of the deciduous hollies. The leaves are thick, oval to elliptical pointed at both ends and toothed (fig. 38). They often have a downy appearance underneath.

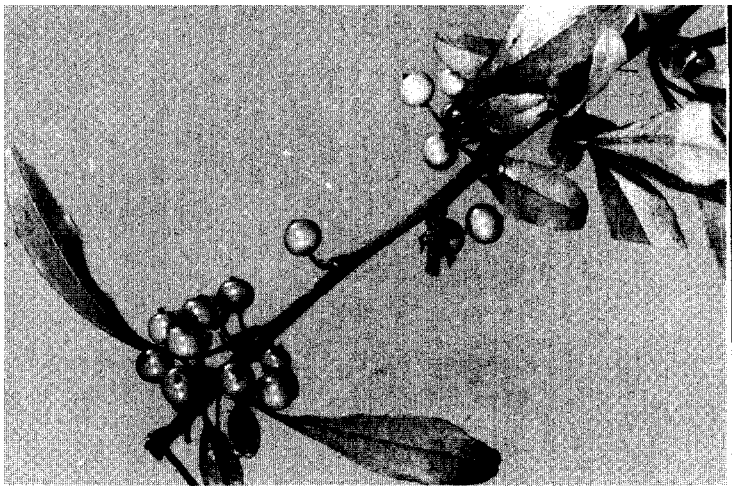
Winterberry is found in all the States of Appalachia but is uncommon in the South. Abundant from North Carolina northward, it usually grows at elevations below 3,000 feet. Winterberry is locally abundant in swamps, moist thickets, riverbanks, and alluvial bottoms.

Although winterberry branches and boughs are attractive, the berries are the most highly prized part of the plant. They are used for decoration primarily during Thanksgiving and Christmas in northern cities. The berries ripen in September or October and persist after the leaves have fallen. Branches with clustered berries are gathered and tied in bunches. Collectors usually sell winterberry to flower shops in big cities.

The harvesting of the berried tops does no harm to the bush; in fact, pruning is apt to induce greater growth the following year (Coon 1960).

Figure 38.—Winterberry, leaves and fruit.
(Courtesy Soil Conservation Service.)

SCS-NY 20318



F-518171

Figure 39.—Possumhaw.

Boughs and branches of rhododendron are used for decoration throughout the year, but especially during the Christmas and Easter seasons. They are commonly used in floral arrangements, leaf sprays, and roping.

Plenty of rhododendron is available, but because of its esthetic value, rhododendron should not be harvested along roadsides. Where it is harvested, the stems should be cut near the ground. The plant will then sprout, and new material can be harvested from the same stem in a few years.

Possum haw

Possumhaw *(Ilex decidua* Walt.) also known as swamp holly, deciduous holly, bearberry, and winterberry, is a shrub or small tree that grows up to 30 feet tall (fig. 39). Its stem is usually crooked. The leaves are deciduous, round toothed, and slightly notched at the end. They are thick and firm, smooth above, and quite hairy on the ribs underneath. The berries are usually clustered and turn orange and scarlet in the early fall.

This species, common from southern Virginia to northern Florida, is especially abundant in central North Carolina. It is found in low woods, on hillsides, and in flat upland woods. It prefers calcareous soils and the borders of sloughs and bogs.

Possumhaw berries are used for decoration. Like winterberries, they ripen in September and persist until May. Branches with the clustered berries are gathered, tied in bunches, and sold to flower shops in large cities.

Boxwood

Boxwood or box *(Buxus sempervirens* L.) is not native to the United States, but it grows very well in parts of Appalachia (fig. 41). Rural boxwood nurseries are common, and the evergreen clippings from boxwood are being included in increasing numbers in festive holiday displays.

Boxwood nurseries are sizable industries in the mountains of northern Georgia, western North Carolina, and western Virginia. For example, in the mountains of North Carolina, there are approximately 300 growers.

Prior to the holiday season, the trees are pruned and the clippings sold through floral and nursery trade journals by the pound, f.o.b. shipping point. Boxwood clippings are used in some of the best and most expensive wreaths.

Leucothoë

Leucothoë sprays are collected in large number in the southern Appalachians (fig. 40). Leucothoë *(Leucothoë editorurn* Fern. & Schub.) is also known as dog-hobble, ivy, switch-ivy, and drooping leucothoë. In the mountains it is sometimes called poison-hemlock because in early spring cattle eat the green leaves, get very sick, or die.

Leucothoë is an evergreen shrub about 3 to 6 feet high with slightly curved branches. Its leaves are lustrous bright green above and somewhat lighter green underneath. They are lance shaped, spiny toothed, 3 to 6 inches long, and have conspicuous petioles about half an inch long. The flower spikes have an attractive creamy or pinkish color but a rather unpleasant odor.

Leucothoë ranges from Virginia to Georgia in the mountains and on the Piedmont Plateau. It is most commonly found in beds along small streams or in damp areas.

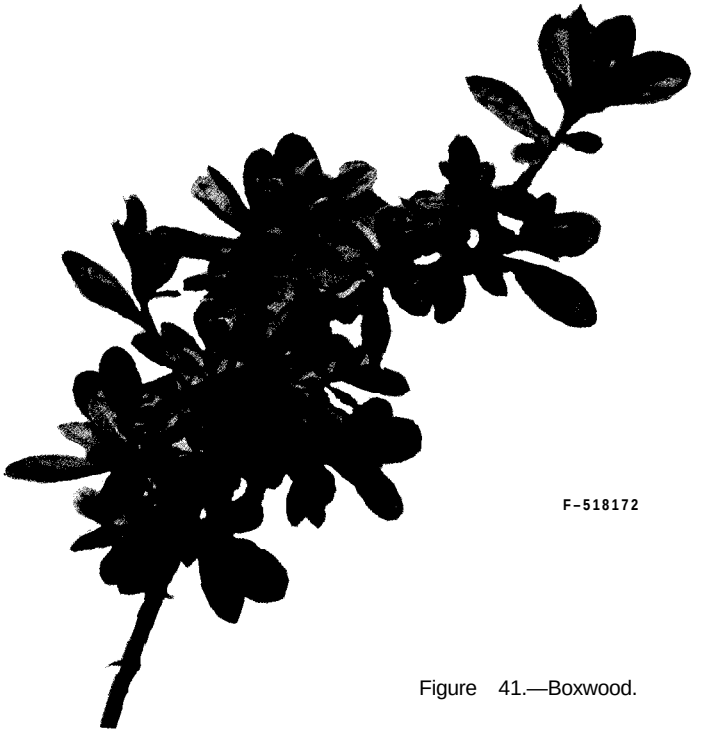
Leucothoë sprays are shipped throughout the country for floral arrangements. The sprays or stalks are usually gathered in late summer and early autumn. Collectors cut the sprays into lengths of 10 to 20 inches and carry them in burlap sacks. At home the stalks are graded according to size, shape, and color. They are then tied in bunches of 25, boxed, and sold to a local dealer who stores them until a large shipment is accumulated.

One adult can usually gather 3,000 to 4,000 stalks in a day. However, a word of caution: some people are allergic to leucothoë in the same manner as to poison ivy, and at times pickers complain of headaches.

Excessive deer browsing during the winter months reduces the harvest of leucothoë. In many places browsing is so heavy that plants produce no salable sprays.

F-502161

Figure 40.—Leucothoë: close view of branches.



F-518172

Figure 41.—Boxwood.

F-502162

Figure 42.—Sorting galax by size and color.

Lesser Plants

Galax

Galax *(Galax aphylla* L.) is one of the most sought-after decorative plants in the southern Appalachians (fig. 42). This evergreen herb without erect stems can readily be identified by its lustrous dark green leaves. They are heart shaped, leathery, toothed, and have long slender petioles. The leaves turn maroon in late fall. The creamy white flowers grow in long dense spikes.

Galax ranges from the southern boundary of Pennsylvania to Alabama and Georgia. It grows on both the Piedmont and Appalachian Plateaus. The commercial range is more limited. In the southern part of its range, galax frequently occurs on moist woodland sites, but in the North, it occupies drier sites.

In central North Carolina, Virginia, Georgia, and Tennessee, it. is commonly found in open woods, along streams, and in damp woods. Patches of galax are-commonly found along the edges and in small openings of dense mountain-laurel and rhododendron.

Galax leaves are widely used as base or background material for floral arrangements and wreaths. The leaves are also used in Christmas decorations.

The leaves can be harvested from August or September through April depending on snow conditions. Harvesting should not take place during the growing season because the petiole does not easily separate from the root, and very often the root and reproductive flower are pulled up together and the plant is destroyed. Entire beds can be depleted in this manner. Steffek (1954) however, states that millions of leaves are picked annually for the florist trade, and that this harvesting has not been nearly as destructive to plant populations as some roadbuilding projects.

Collectors usually carry a large burlap bag tied around the shoulder so that the bag will drag behind the person collecting. The leaves are pulled from the roots with the petiole attached and stuffed into the bag. The collected leaves are then sorted by size and color and tied into bunches of 25. These graded bunches are packed in cardboard boxes and sold to dealers.

There are many dealers in western North Carolina and southwestern Virginia, the center of the market area. A large local industry has developed near Burnsville and Marion, NC. Other local markets could probably be easily developed, for galax is widely sought by decorators.

Figure 43.—
Mistletoe, closeup.

F-489081

Mistletoe

The eastern species of American mistletoe *(Phoradendron flavescens* (Pursh) Nutt.) seen in Christmas decorations is a semiparasite that grows on the branches of hardwoods (figs. 43 and 44). American mistletoe is easily identified by its thick, yellow-green, smooth leaves. It has pulpy white berries that ripen in September or October and hang on tenaciously for months. Mistletoe with its evergreen leaves and stems is very conspicuous on hardwood trees that have shed their leaves.

Mistletoe occurs from southern New Jersey and southern Pennsylvania through Appalachia to the Gulf States and west to Kansas and Texas. Generally, it is found at low elevations in the mountains.

It is most frequently found in trees that are open grown or border the edge of a dense forest (Gill and Hawksworth 1961). There are indications that the parasite is best adapted to host trees growing on calcareous soil (Reed and Reed 1951). Continuous cold weather where temperature remains at or below zero for a number of days kills the aerial parts of the plant. Mistletoe infects most broadleaf tree species, especially oak, maple, honey locust, sycamore, elm, and hackberry (Monsch 1938).

Mistletoe was employed by the ancient Druids in their religious rites, and it was an object of superstition to the early Germanic tribes. No doubt the fact that mistletoe was one of the few evergreens in many European forests influenced its holiday use.

Harvesting begins about Thanksgiving and continues to Christmas. Occasionally mistletoe grows on a branch near the ground, making collecting easy, but unfortunately it usually grows in the tops of trees. To get it collectors either climb a tree or shoot down the clumps with a rifle or shotgun. Climbing is favored because shooting often damages the plant.

Only fresh, undamaged mistletoe is salable. Leaves and berries must not be broken or bruised. Extra care must be taken in cold weather because the plant is very fragile when frozen. To keep the plants fresh, they should be stored at about 40° F. Because most collectors do not have cooled storage areas, the freshly collected mistletoe is graded, packed in cartons, and shipped as quickly as possible. In some mistletoe-collecting centers, the pack-

F-262952

Figure 44.—Mistletoe in tree.

aged crop is flown to northern and eastern cities (Griffis 1956).

Pruning or cutting mistletoe for harvest will not eliminate the plant from the host tree. In fact, it causes the development of new shoots over a wider area and after several years the plant should produce crops of increased size.

Propagation is difficult and uncertain. Collecting seeds from mistletoe and using them to infect younger twigs of the same species from which the seeds were secured has been successful. Seeds, collected in late winter or early spring, removed by crushing the ripe berries, can be planted in the axil of a bud, in a small cut made through the bark on the underside of a branch, or on a twig from which the outer layer of bark has been scraped away. A gelatinlike substance around the seed will cause it to adhere to the twig.

All large cities have markets for mistletoe. Its price is regularly quoted in trade journals at Christmas time. Most mistletoe is distributed by wholesale florists who buy from many collectors. Although there are centers of production in the Midsouth, Gulf Coastal Plain, and parts of Texas, mistletoe also provides local income throughout its range.

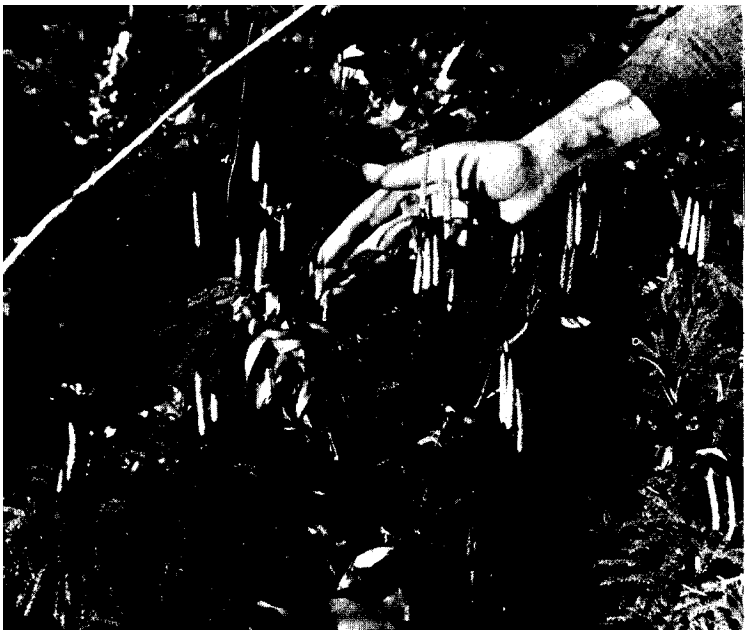
Princess-pine

Material marketed as princess-pine or lycopodium *(Lycopodium* spp.) can be any one of a number of species of the genus *Lycopodium* (fig. 45). It is also known locally as groundpine, clubmoss, or less commonly, crowsfoot. *Lycodium complanatum* L. is used most extensively because it is so common and widespread.

Princess-pine, of course, is a fern, not a pine. It gets its name from the striking resemblance of its foliage and form to a miniature pine tree. It is perennial and evergreen.

Although princess-pine and other species of *Lycopodium* are common in all parts of Appalachia, the area from the mountains of North Carolina northward probably is best for collecting them.

Princess-pine or lycopodium is used for decorations the year around. Dyed stems are fastened to short picks or inserts to provide the green fill in many funeral displays. It is also used in Christmas wreaths and sprays.



F-518173

Figure 45.—Princess-pine, stand of *Lycopodium* in Allegany County, Md., growing beneath mixed oak-pine stand.

Partridgeberry

Although this species *(Mitchella repens* L.) has a number of common names other than partridgeberry-twinberry, two-eyed-berry, deerberry, and squawberry—it is universally known among decorators as partridgeberry (fig. 46). It is sometimes described as a trailing, small evergreen shrub and sometimes as a handsome woody vine with creeping stems. Its leaves are evergreen, leathery, paired, and shiny, and from one third to 1¼ inches long. The fruit is a red, round berry, always double with two "eyes."

Partridgeberry is found throughout the East and South, and is common in all parts of Appalachia. It grows in shady woods (especially under pines or hemlock) and swamplands (especially along shady streams), often in acid soil. Bowls of partridgeberry are sold primarily during the Christmas season.

F-518174

Figure 46.—Partridgeberry, foliage and berries.

Rattlebox

Pods of several species *(Crotalaria* spp.) used for decoration are found in Appalachia. They are often called rattlebox or rattleweed because loose seeds rattle within the pod.

Crotalaria are herbaceous annuals and perennials of the legume family, and it would be difficult to confuse them with other plants. They are found most commonly on dry open places on sandy soils.

Dried Crotalaria pods are one of the few pods sold by commercial florists in the Eastern United States. But dried pods of other plants found in Appalachia are sold locally at fall fairs and markets throughout the region. Homemakers readily buy them because they fit well in dried floral arrangements. The market for dried pods shows promise of increasing.

Sheet moss

A group of mosses are sold in the commercial market as sheet moss or log moss. Two species commonly found in association and probably the major species entering the trade are *Hypnum imponens* Hedw. and *Thuidium delicatulum* (Hedw.) B.S.G. (fig. 47). *Hypnum cupressiforme* Hedw. is also found in this association and enters the market as part of the sheet moss blanket.

Only certain species of moss are salable, and distinguishing between species is a job for an expert. The best advice to collectors of sheet moss is to obtain samples of the species and consult the buyer as to which species he wants.

Both commonly used species grow in loose mats that are yellow green to bright green. The mats grow on the ground or on rocks in moist woods but are found most often on fallen trees or decayed logs. They grow throughout the wooded areas in Appalachia. The most common areas for commercial collection are the mountains of North Carolina and Virginia.

Sheet moss is used for decorations the year round. The sheets or blankets are dyed green and used in many different kinds of floral displays.

Figure 47.—Sheet moss.

F-518175

Figure 48.—Fronds of fancy fern.

F–381583

Ferns

Several species of ferns are marketed in the Eastern United States. The most widely used species is fancy-fern *(Dryopteris intermedia* (Muhl.) A. Gray), a kind of wood fern or shield-fern (fig. 48). Millions of its fronds are used annually in floral displays. The Christmas fern or eastern dagger fern *(Polystichum acrostichoides* (Michx.) Schott) has been used extensively but is being replaced in some localities by the western daggerfern or swordfern *(P. munitum* (Kaulf.) Presl) (Benedict 1957). Two other woodferns, very similar to fancy fern, may be found mixed with it; marginal woodfern *(D. marginalis* (L.) A. Gray) and toothed woodfern *(D. spinulosa* (O. F. Muell.) Watt).

Fancy fern, sometimes called evergreen woodfern or intermediate woodfern, has evergreen leaves 14 to 30 inches long. As with the other ferns, accurate identification can best be made from the fruiting bodies. These appear in late spring or early summer on the back of the leaf or frond. The fruiting body is round, and the immature fruit dots have a thin, scalelike covering with a groove on one side.

The Christmas fern is also evergreen, and its fronds grow up to 3 feet tall. It ranges from Nova Scotia to Florida. It grows in the shade on rocky north slopes, as well as on riverbanks and flood plains.

Florists use fern fronds extensively all year long. Picking is usually done in late summer and fall. The fronds should be removed without injuring the roots. Generally they are bound in bundles of 25 to 50 and packed loosely in crates, slotted to permit air circulation.

Local collection stations are found from North Carolina northward, principally in the mountains. The novice collector should contact a buying station before he starts collecting to make sure he knows the correct species and quality specifications.

MINOR DECORATIVE PLANTS

Many plants growing in Appalachia are used in decorations but are not commonly sold commercially. Some species, highly prized by arrangers, are used only sporadically. A steady market could develop for some of these items if a supply were assured.

The possibilities are not restricted to the examples mentioned in this section. An enterprising decorative-plant collector will notice and use other unique plants if he has imagination and artistic talent. Two books (Hill 1952 and Gannon 1949) provide ideas on the types of natural plant materials that arrangers favor.

F-253980

Figure 49.—Wild huckleberries in fruit.

Boughs, Branches, and Foliage

Yellow or hard pines, other than those discussed in detail, are also used for boughs and roping. An example that commonly occurs through Appalachia south to northeastern Georgia is pitch pine *(Pinus rigida* Mill.).

Northern white-cedar or arborvitae *(Thuja occidentalis* L.) is a prized decorative evergreen. It is used in wreaths, roping, boughs, and table decorations. Unfortunately, it is not abundant in natural stands in Appalachia, but by using the trees now growing and by planting more their use might be profitable.

Common juniper *(Juniperus communis* L.) and Canada yew, or ground-hemlock *(Taxus canadensis* Marsh.) are shrubs that have pleasing foliage for decorations. Common juniper or its prostrate form are abundant in the Northeast as far south as the mountains of Georgia and North Carolina. American yew is most common in northern Pennsylvania but grows as far south as the mountains of Virginia.

Branches of hawthorn *(Crataegus* spp.) are used to make small decorative trees at Christmas time. Ornaments or candies are hung from them or pressed onto the thorns. Metallic paints are sprayed on the branches to give a sophisticated touch.

Species of spikenard *(Aralia racemosa* L.), saxifrage *(Saxifraga* spp.), and spiderwort *(Tradescantia* spp.) are used in corsages and other decorations. Hen-and-chickens *(Sempervivum tectorum* L.) escapes from cultivation and is persistent; its smooth leaf rosettes are unique. Blueberry *(Vaccinium* spp.) and huckleberry *(Gaylussacia* spp.) (fig. 49) provide green fill for floral displays.

Flowers, Berries, Seed Pods, and Nuts

The flowers of pussy willow *(Salix discolor* Muhl.) are in demand in the spring.

The brilliant orange-red clustersof mountain-ash berries *(Sorbus americana* Marsh.) and the clustered white berries of the dogwoods *(Cornus racemosa* Lam. and *C. stolonifera* Michx.) are favorite decorative materials common to much of the Appalachians. Rose hips *(Rosa* spp.) and yellow-poplar *(Liriodendron tulipifera* L.) fruit clusters are also used. The red berries of sumac *(Rhus* spp.) are highly prized by arrangers for fall and winter bouquets.

Several ornamental plants that have escaped from cultivation, including privet *(Ligustrum vulgare* L.), pyracantha or firethorn *(Pyracantha coccinea* Roem.), and snowberry *(Symphoricarpos albus* (L.) Blake, also native) provide decorative berries or berry clusters.

Seed balls and pods from a number of forest trees are used for decoration. Sycamore balls *(Platanus occidentalis* L.), honeylocust pods *(Gleditsia triacanthos* L.), and royal paulownia fruit capsules *(Paulownia tomentosa* (Thunb.) Sieb. & Zucc.) are examples. Milkweed pods *(Asclepias* spp.) often found in abandoned fields adjacent to a forest, bladdernut pods *(Sfaphylea trifolia* L.), and the long cigar-shaped pods of trumpet creeper *(Campsis radicans* (L.) Seem.) are also used.

Cattails, both the broadleaf *(Typha latifolia* L.) and the narrowleaf species *(T. angustifolia* L.) have a pleasing spike and are used in dry arrangements throughout the year. Cattail foliage also provides greenery that can be sold commercially if a sufficient supply is available.

The use of acorns in wreaths has already been discussed. Other nuts are used in the same manner. Some of the nuts are filberts or hazelnuts (Corylus spp.), black walnuts *(Juglans nigra* L.) (fig. 50) and beechnut husks *(Fagus grandifolia* Ehrh.).

F-502443

Figure 50.—Hybrid black walnuts produced for superior nut trees.

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