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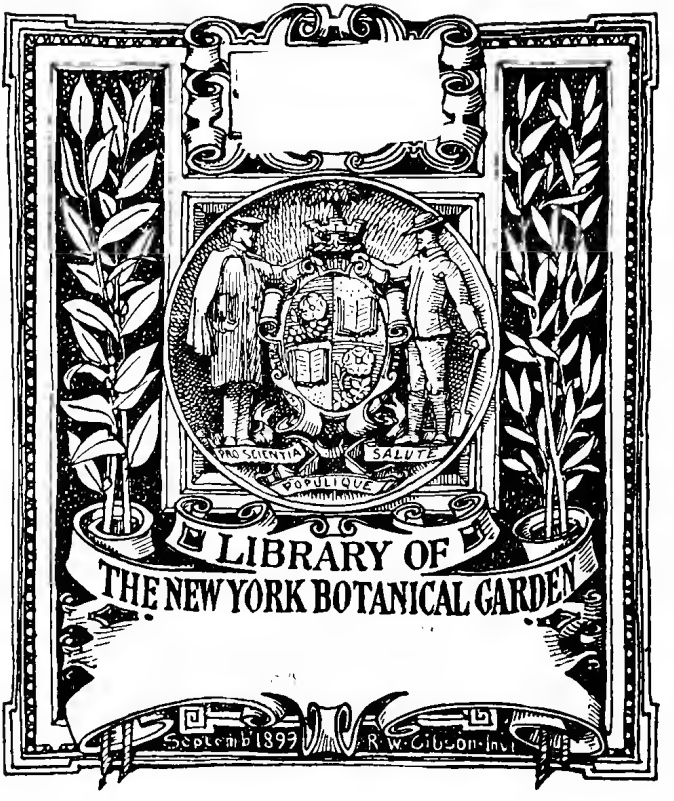
Native trees
of
Rhode Island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THE NATIVE TREES

OF

RHODE ISLAND.

BY

LEVI W. RUSSELL,

PROVIDENCE.

[FROM THE ANNUAL REPORT, 1899, OF THE RHODE ISLAND STATE BOARD OF AGRICULTURE.]

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THE NATIVE TREES OF RHODE ISLAND.

By Levi W. Russell,

Of Providence.

Rhode Island is a natural forest region. Its conditions of climate and soil are highly favorable to a varied arboreal growth. Few continuous tracts of no greater extent in this country produce so many species of native trees as are found within the limits of Rhode Island. The effect of the south shore currents and the Narragansett Bay is to moderate the climate for quite a distance inland. This condition gives certain trees, whose range is generally farther south, a congenial habitat here. Thus we have, in the southern line of towns, the "pin" oak, rarely, if ever, found elsewhere so far north. There is one locality of the "post" oak, near the north shore of Wickford harbor, the farthest point north for which the tree has been reported. So, that fine ornamental tree, the "tulip," thrives vigorously here, not only as planted from nursery stock, but is growing as a stately, native tree in a few localities. Its general range is from Pennsylvania south to the Gulf States.

Of the trees which reach their full development farther north, in a colder climate than ours, there are very few which are not native here, and probably none not easily naturalized. Thus we have noted as "local," that is, found in a few places, the "canoe," or "paper," birch, that tree so useful to the aborigines of the north for boats and shelter. The "rock," or "sugar," maple, while not found in great numbers here, as in the "orchards" of Vermont and cool regions elsewhere, grows native, sparingly, in various

places in this State, and is perfectly at home as a planted tree. Of the evergreens, mention may be made of the hemlock spruce, one of the most useful trees of the northern woods. It grows here in a few cool, moist locations, showing all the grace and beauty for which the tree is noted.

It is here, then, in territory not far from Narragansett Bay, that conditions seem to meet and mingle, which favor and ensure, the growth of trees covering, in their native habitats, a wide range of latitude and corresponding difference in climate.

The variety of soils in the State is an effective element in producing variety in tree growth. In some regions of our country one might travel many miles and find but a single kind of tree, in forest masses, others, if they grew at all, being dwarfed and useless. In Rhode Island the limits of a single farm sometimes show vigorous specimens of most of the nearly fifty native species found in the State. Much of the picturesqueness of the country scenery in Rhode Island comes from constantly changing variety in the arboreal growth, noticeable as one travels the highways leading from town to town. This fact is not appreciated as it well might be. There is no element of natural beauty so freely exposed to our view as that seen in our native trees and shrubs; and there is none so easily and so cheaply manageable about home grounds and dressed highways as that derived from the same source.

The economic value of the woodlands of this State is greater than what might be inferred from its limited area. Although no mountains appear, much of the ground in the northern and western sections is exceedingly rough and full of troublesome rocks for the farmer. A large part of this land is, and should be, given up to growing wood. Portions have been subjected to two or three clean choppings, and there are probably but few acres of woodland in the State which have not been culled of the best trees. But the lands thus devoted to this crop have been left to chance-seeding, or to growth of sprouts from stumps of trees removed.

According to the State census of Rhode Island, taken by the

WHITE OAK, ("CATHOLIC OAK") LONSDALE.

late Amos Perry, for 1885, there was from 25 to 30 per cent. of the land area devoted to the growth of wood. This, however, lies mostly in the western towns of the State, while there is very little woodland in the shore towns, and almost none upon the islands. The following table of contrasts, taken from the 1885 report, is interesting:

Woodland of Several Towns shown by Per Cents.

West Greenwich	57	New Shoreham	0
Coventry	51	Portsmouth	2
Glocester	50	Middletown	2½
Scituate	47	Jamestown	5
North Smithfield	44	Bristol	8
Tiverton	42	East Providence	17
Johnston	38	Warwick	19

The above table is carried sufficiently far to show the great inequality existing in the distribution of woodland in this State. The dearth of even shade-trees in some of these towns is a painful feature, and ought to be remedied as soon as trees can be made to grow. All these lands were originally covered with forests. Sufficient and properly selected areas should still be devoted to tree growth, to break the sweeping winds and conserve moisture for springs and small streams. In European countries the government compels by law the reserve of a certain percentage of each owner's grounds to be given to tree growth. There the folly of clean tree-cutting, even on small areas, has been experienced, and enormous sums are now being spent in renewing forests, both on government and on private lands. Here we must depend upon the intelligence and disposition of individual owners of land estates to manage tree-cutting and tree-planting. In a general way, the economic and the ornamental values of trees are both acknowledged. What is lacking is that active interest which comes from a careful observation of the characteristics of the different kinds—their likes and dislikes of different soils and locations, their rate of growth, the space they individually need for

full development, the adaptability of the different kinds for ornament or shade in special localities, and whether they will or will not, when grown, harmonize with their surroundings. For growth in forest masses there are many questions which require an intelligent answer to ensure the most profitable investment for years to come. The white pine requires one sort of ground, the chestnut another, the oaks another; the white cedar takes to a swamp, and the gray birch will grow anywhere from a swamp to a deserted gravel-pit. Some tree, native in this region, can be found which will thrive on any acre of ground in Rhode Island not permanently under water, or made of bare rock.

It is the chief purpose of this paper to call attention to the prominent characteristics of the principal native trees of the State, and to show something of their adaptability for economic and ornamental purposes. They are tabulated below with both their common and their Latin names. Common names vary in different regions, but the Latin names are constant and are understood by botanists everywhere.

Table of the Principal Forest Trees indigenous to Rhode Island.

White oak	*Quercus alba.*
Swamp white oak	*Q. bicolor.*
Post oak	*Q. stellata.*
Chestnut oak	*Q. prinos.*
	Var. *monticola.*
Red oak	*Q. rubra.*
Black oak	*Q. tinctoria.*
Scarlet oak	*Q. coccinea.*
Pin oak	*Q. palustris.*

NOTE.—To the above list of oaks should be added to the scarlet oak the variety *ambigua* (rather scarce), the bear, or scrub oak, *Q. ilicifolia*, and the little "chinquipin" oak, a shrub scarcely five feet high.

Shag-bark hickory	*Carya alba.*
Mocker-nut hickory	*C. tormentosa.*
Pig-nut hickory	*C. porcina.*

WHITE OAK.

Bitter-nut hickory.....*C. amara.*
White elm.....*Ulmus Americana.*
Slippery elm.....*U. fulva.*
Butternut.....*Juglans cinerea.*
Chestnut.....*Castanea vesca.*
Rock maple.....*Acer saccharinum.*
Red maple.....*A. rubrum.*
White maple.....*A. dasycarpum.*
Black birch.....*Betula lenta.*
Yellow birch.....*B. lutea.*
Gray birch.....*B. alba.*
Canoe birch.....*B. papyracœ.*
White ash.....*Fraxinus Americana.*
Black ash.....*F. sambucifolia.*
American beech.....*Fagus ferruginea.*
Blue, or water, beech.....*Carpinus Americana.*
Ironwood.....*Ostrya Virginica.*
Buttonwood.....*Platanus occidentalis.*
Hackberry—False elm.....*Celtis occidentalis.*
Basswood.....*Tilia Americana.*
Tupelo—Snagtree.....*Nyssa multiflora.*
Black cherry.....*Prunus serotina.*
Red cherry.....*P. Pennsylvanica.*
Tulip tree.....*Liriodendron tulipifera.*
Sassafras.....*Sasafras officinale.*
Aspen poplar.....*Populus tremuloides.*
Large poplar.....*P. grandidentata.*
Balm of Gilead.....*P. balsamifera*, var. *candicans.*
Flowering dogwood.....*Carnus florida.*

Cone-bearing Trees.

White pine.....*Pinus strobus.*
Pitch pine.....*P. rigida.*
Black spruce (rare).....*Picea nigra.*
Hemlock.....*Tsuga Canadensis.*
Red cedar.....*Juniperus Virginiana.*
White cedar.....*Cupressus thyoides.*

To the list, as given, might properly be added several kinds not common, or of doubtful nativity, in this State; as the black

walnut, the Norway pine, and the overcup white oak—all large trees, and growing vigorously when introduced. Also, the much-esteemed evergreen holly, local near the Great Swamp, of Kingstown. The scrub oak, which occupies many acres of ground, sometimes attains small tree size. So, a limit of fifty species of trees native to the soil of Rhode Island is not far from the truth.

The larger arboreal growth of this region diminishes in the size of its several species, through the larger and smaller shrubs, until it ends with some of the finest of woody creepers to be found in any part of the country. The limits for the present article allow us, however, to deal with trees only.

The Oaks.

Of the thirty or more species of oaks found within the limits of the United States, several of the best are native to Rhode Island. At the head of them all, standing first in usefulness and noble characteristics, is the white oak. Our ideal "oak" is more nearly represented by this tree than by any other of the genus. It fitly symbolizes some of the noblest traits of the human character. We sing, in patriotic strains, "The brave old oak;" and a "heart of oak" gives an idea of steadfastness which nothing else conveys so well. Its massive trunk and giant branches, when fully grown, in open ground, embody the strength and stability which we admire to see in a living object. By its deep-rooting habits it anchors itself against winds and tempests with a Titan's grasp. The life period of the white oak has not been definitely determined, but it certainly covers several centuries. There are probably specimens, still vigorous, now standing in these Plantations, which were trees of considerable size when Roger Williams first noted the "heavy growth of wood" on the grounds which he settled. In England, such trees, now scattered over her grand old parks, are regarded with a veneration almost sacred. Some of the English oaks, which our white oaks nearly resemble, have a historic record running back from five to ten centuries, and every tradition about them is carefully preserved. Some of the white oaks in New

SWAMP WHITE OAK.

England have become historic in character. Such was the "Charter oak," in Hartford; and the "Regicides' oak," in Woodbridge, Conn.; also "Eliot's oak," in Newton, Mass.; and the "Catholic oak," in Lonsdale, Rhode Island. There is a considerable number of these grand old oaks scattered over our State. Their preservation is now a matter of private ownership. A vandal, in a day, may destroy the growth of centuries. Legislative aid should come to the rescue.

The "Catholic" oak at Lonsdale will undoubtedly be preserved. It is now guarded by a substantial iron fence. According to the note book of the late Dr. C. W. Parsons, from which the writer several years ago had permission to copy, "This tree formerly stood in the same enclosure as the adjoining land of Whipple's, which includes Blaxton's grave. It was in the way of travel, and Jeremiah Whipple's father gave the land and tree, or, rather, allowed a road to be carried around it, not surrendering the fee. It had formerly a much wider spread of branches. The branches were cut off many years ago. Through the agency of the Rev. J. C. Richmond, acorns from this tree have been distributed through many towns of Germany, and its offspring are thus propagated." It has often been reported that the first Episcopal service held in this State was conducted under this tree. To get the historical truth concerning this, the author wrote to Bishop Thomas M. Clark, and received the following reply, which is certainly a valuable record:

"FEB. 2d, 1900,
BISHOP'S HOUSE,
PROVIDENCE, R. I.

L. W. RUSSELL, Esq.

DEAR SIR:—In reply to yours of the first instant, I would say, it has always been the tradition that the first Episcopal service held in Rhode Island was conducted under what is known as the Catholic Oak, at Lonsdale, under the Rev. Mr. Blackstone. The Rev. J. C. Richmond frequently held service and preached under this tree, and I have no doubt that he widely distributed the acorns from this tree, as is reported of him.

Faithfully yours,

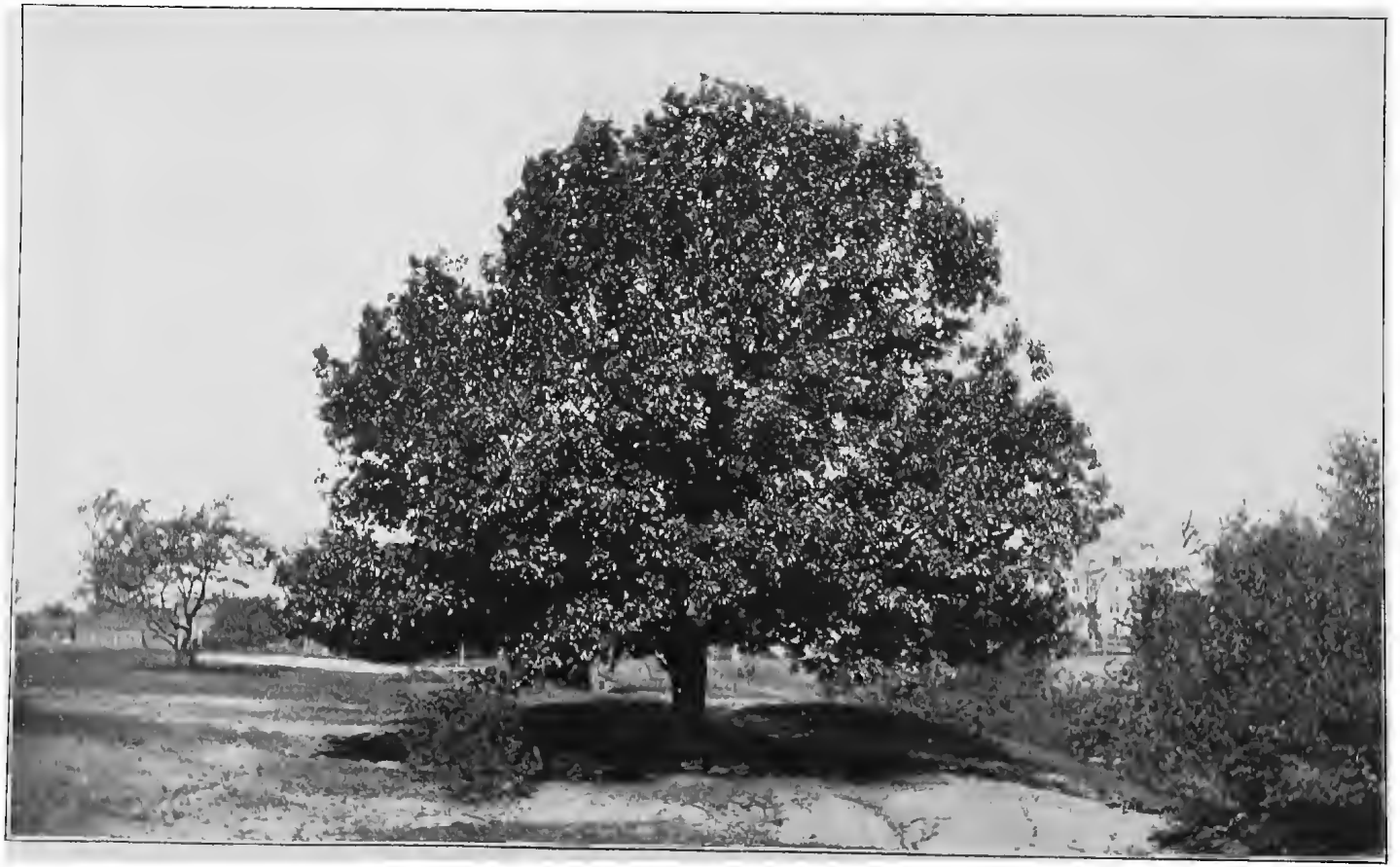
THOMAS M. CLARK.

The demand for white oak timber in wood shipbuilding days took most of the salable trees from our forests. Later, other uses have increased the demand. Still, some good timber trees are left, and others will rapidly grow if protected. Of good white oak there is never enough to make it cheap. The qualities which it combines to a remarkable degree are strength, toughness, elasticity, durability, and, in its dressed state, uncommon beauty. Hence its great usefulness for carriage work, agricultural implements, furniture, bridge work, and many other purposes.

In its scenic effect, the white oak, grown in open ground, is an object of grandeur and sturdy strength. Its head is a mighty dome of most refreshing shade. In its youth it is lithe and graceful in form, but early shows its imperial qualities, and, at last, is a majestic ruin.

THE SWAMP WHITE OAK.

The swamp white oak is common in some parts of this State. It prefers moist, or springy ground, but grows well on any ground not excessively dry. The tree has striking features, and, in open ground, is an attractive element of the scenery. It takes a more columnar form than the white oak, both in body and head. The body is usually fringed with numerous, scraggy branches, which, in leaf, quite conceal the wood. One of these trees in an open, wind-swept situation appears as little else than a mass of short, bushy, branches. The tree appears unthrifty, but it grows rapidly, and delights in cornery, out-of-the-way places. Its foliage is abundant, and the tree forms a fine shade. The wood of this tree is a fairly good substitute for the real white oak, but is coarser, and not as firm. The sap-wood and the heart-wood have two distinct colors, hence the descriptive term "*bicolor*." There are fine trees of this species in Providence and vicinity, notably on Neutakonkenut Hill, and Fruit Hill; also, in Warren and Bristol. This kind of oak should be propagated, as it will flourish in waste places where other trees of equal value would not grow.



Black Oak.

Scarlet Oak.

THE BLACK OAK.

The black oak is evidently the most common kind of oak in this region. Upon the dry grounds around the head of Narragansett Bay it once formed quite continuous reaches of woods. Numerous groves and isolated trees of this species are still left. They form a characteristic and very attractive feature of the scenery of Rhode Island. Many single trees, in open space, are models of sylvan beauty. The illustration given shows one of these trees photographed when in full leaf. If such trees were all suddenly swept off, we should soon realize how much we owe to their presence. As timber and fuel this tree takes second or third rank, the wood being porous, brittle, and not very durable, except when kept dry.

THE RED OAK.

The red oak grows but sparingly in this State, being mostly confined to cool, moist locations. It is closely related to the black oak, but readily distinguished from it by its more upright habit, its smooth and lighter colored bark, and by its very large and shallow-cupped acorns. In open ground it forms a majestic, rounded head, with smooth, clean-looking limbs. In the forest, it forms a fine timber tree, shooting up to a great height, with a straight, slightly tapering trunk. The wood is porous and lacking in strength, but is in great demand for furniture of common grades. It is a rapidly growing tree, but is difficult to transplant, a fact true of most nut-bearing trees, unless they are started and root-pruned in a nursery.

THE SCARLET OAK.

The scarlet oak is sparingly scattered with the black oaks, in this State. It is one of the most ornamental of native oaks. It has much more finely-divided branchlets than any other oak common in this region. The leaves are almost skeleton in outline, and are intensely brilliant in their autumn hues of scarlet. They

contrast agreeably with the foliage of the black oak, which takes the sober shades of orange and buff. The wood of the scarlet oak is of inferior grade, but the scenic value of the tree should preserve it for that alone.

THE PIN OAK.

The pin oak grows as a native in the south-western portion of this State. Some fine specimens are near the Stonington railroad bridge, where it spans the Pawcatuck river at Wood River Junction, also, around muddy pools in Charlestown, on the way to the old Indian burying ground. This is at the northern limit of the native growth of this oak. It is the most graceful and ornamental of the oaks of this latitude. It is becoming greatly esteemed for lawn and avenue planting. Thomas Meehan, of Germantown, Penn., a man of highest authority in aboriculture, says of it—"an oak distinguished from all others by its peculiar beauty. . . . As the tree grows, the lower branches droop until they touch the ground. As an avenue tree it is unequaled, and it will also thrive in cities as a street tree. A row in Fairmount Park, Philadelphia, is much admired." Mr. Meehan remarks, too, that it is easily transplanted. Some young trees of this kind, in Roger Williams Park, Providence, are doing well, and seem perfectly hardy, as they would probably be, in somewhat sheltered locations, in any part of the State.

OTHER OAKS.

Space is not allowed for more than a brief mention of the remaining, and less important, oaks of the State. The chestnut oak appears in two or three varieties. The "rock" chestnut oak grows here and there, upon rocky ridges, as a tree thirty or forty feet high, and, if it did not bear acorns, it might readily be mistaken for a real chestnut tree. The leaf, bark, and trunk resemble those of a vigorous young chestnut tree. The acorns are few and sweet. The wood is esteemed both for fuel and domestic work—stakes, rails, pins, etc.

RED MAPLE.

ROCK MAPLE.

The scrub, or bear, oak is regarded as a robber, and generally put on the defensive, or let alone. It deserves a better reputation, for it does hold loose sands from blowing away, and reaches of this shrub have recently been successfully utilized as "nurse" ground for valuable seedling trees, white pines mostly, to be overtopped, finally, by their growth as timber trees. The little chinquipin oak often grows with the scrub oak. It throws up a circlet of graceful stems from a single root, which are often loaded with fairy little acorns at three feet high. The post oak is thus far reported in but one locality in this State, on the shore of the north arm of Wickford harbor. Farther south it is common, and a fine tree.

The Maples.

The maples in this State are represented by two species which are positively native, and by a third probably native, certainly thoroughly naturalized. The maples have strongly marked characteristics, both in scenic effects and in economic qualities. Of the ten or more species found in this country, those native here rank among the best in the desirable qualities of the genus *acer*.

THE ROCK MAPLE.

The rock, or sugar, maple takes first rank for useful properties. It is native here, although not a common tree in the wild state. It has long been a favorite for street and home ground plantings, showing no dislike to the soil and climate of the State. The tree is attractive in all stages of its growth. It early forms a symmetrical head and readily adapts itself to its location. In open, exposed ground, it makes a broad, obicular head; but, when given limited space, as in narrow street planting, it takes a cylindrical shape, or slightly spreading, but always erect and well balanced. It is singularly neat and clean in its aspect, from expanding leaf to the last of its autumn foliage. The foliage is rarely injured by insects or worms, although borers sometimes kill well-grown trees. The tree bears transplanting well and will suffer a good

deal of ill usage from "tree butchers" and horse-biting and still recover. There are many street and highway rows, and little parks of rock maples, which can easily be called to mind, that redeem the places where they stand from lack of other attractive features. If it is desirable to carry the top of the rock maple up, to prevent obstructing window-light, it may be done easily by lopping off the lower limbs; the top growth will ascend, forming a well shaped head. It is, indeed, a very manageable tree. Its great value as a sugar tree, or for timber and fuel, we can hardly consider in Rhode Island, as, at present, its importance here lies in its use as a shade and ornamental tree. As fuel, however, the wood ranks next to hickory, and timber logs of it are never cheap, as its uses are many and important.

THE RED MAPLE.

The red maple, or "soft" maple of our moist valleys and wet, flat grounds, is very common in this State, and is the tree that shows most of the gorgeous coloring of our autumn foliage. It naturally occupies many acres of poorly drained, swampy lands, which would grow no other trees of value. It flourishes well, too, on high places, if started there from the seed. It is a fine shade tree and well adapted for some streets. It has a closer head and darker aspect than the rock maple. Its early blossoms, coming before the leaves, are very attractive, and its autumn foliage is a perfect banquet of color. Its wood is much used for toys, models, and light work of various kinds, but is inferior to most hard woods as fuel. There are some fine specimens of young red maples set as memorial trees on the roadway bank of the second lakelet in Roger Williams Park.

THE WHITE MAPLE.

The white maple, also known as the "cut leaf" and "river" maple, grows with great vigor in sheltered locations in Providence and vicinity. It forms a stately tree of symmetrical shape. The lower limbs begin quite early to trend downwards, and the under

WALNUT.

branchlets take a drooping habit. The limbs being long and slender, the whole tree has a light, airy appearance, which is heightened by its long-stemmed, deeply-cut leaves. It is the first of our trees to blossom, only a few warm days in March or April being needed to open the buds. It is a rapid grower, but specially subject to injury from ice-storms. It is the opinion of the writer that the tree is not desirable, at least in large numbers, for Rhode Island.

The Hickories.

The hickories are important trees in Rhode Island. There are certainly four species native, and two of them appear in such numbers and distribution as to mark them as common. The name "walnut" should not be applied to these trees, as that term belongs to trees quite different. The word "hickory" has become a synonym for that which is steadfast and unyielding, especially as a human trait of character. A "hickory" stick means strength, tenacity, and defiance. "Old Hickory," as a pseudonym for Andrew Jackson, still personifies the iron will and heroic actions we so much admire in men.

THE SHAGBARK HICKORY.

Shagbark hickory trees are found scattered in woods and open lots in most parts of the State. It is the only hickory native here of much value for its nuts. Different trees of this kind vary considerably in respect to the size of their nuts, the thickness of the shell and sweetness of the meat. The time is coming for the selection of the best, and propagation from such parentage. Rhode Island should be a home for hickory orchards. Hickory ranks first of all our woods for fuel, especially for the open fire. What home picture is more alluring than the open fireplace, aglow with hickory sticks and backlog, the pleasant aroma of the wood mingling with mild, steady heat from the livid coals?

As a tree, the shagbark is the least attractive of either of the hickories. The loose strips of the outer bark, upon the trunk,

give name to the tree and readily identify it. In open ground it has considerable spread, but, usually, is irregular in its branching and shape. The wood has all the good qualities usually found in the hickories.

THE PIGNUT HICKORY.

The name "pignut" is probably a corruption of the word "fignut," originally applied to the nuts of this species from their striking resemblance, when in the husk, to young figs. Boys and squirrels sometimes gather these nuts, but get little meat for their labor. The tree is remarkably attractive, tall, columnar, and symmetrical. Its foliage is abundant, a lively green all summer, taking on shades of orange in autumn. The wood commands a high price for open fires and for smoking hams, and straight grained sticks are always wanted for tool handles, carriage work, and like uses. A plantation of these, or the other hickories, would very soon yield a profit by thinning for walking-sticks and hoop stock for casks.

The mocker-nut hickory is found, sparingly, in company with the shagbark, which it much resembles in outward form. The bark is smoother on the body, the leaves very large. The nuts are large and very thick-shelled, having but little meat, difficult to get. The tree is chiefly valuable for its wood.

The bitter-nut hickory makes the finest shade tree of either of our four native species. It grows to stately proportions, has numerous lithe branches clothed with smaller leaves than the other species have. The nuts have a shell so thin that the fingers may crush them, and meat so bitter that one taste is enough. Its utility lies in its value as a shade tree, and in its wood for fuel and timber.

THE BEECH.

The beech is not common in this State, but there are a few model specimens. The illustration given shows its habit of growth in open ground. It is one of the best of trees for shade.

WHITE BEECH.

It is smooth-barked, clean, and rarely injured by insects. It is irregular in fruit-bearing, but the three-cornered nuts are edible, and highly prized by boys and squirrels. Swine are very fond of the nuts, and the beech woods of England were formerly much prized as feeding-ground for stock of that kind. Beech wood comes close to maple as fuel, but chairs, tools, and the like, take most of the logs. A beech forest with its tall, columnar boles, crowned by canopied foliage, admitting only glintings of sunlight, is one of nature's triumphs of sylvan beauty.

The "water" beech is not a beech, but the true "hornbeam," as the horny, compact, exceedingly tough wood of the tree testifies. The term beech has been applied from the resemblance of its bark and leaves to those of the real beech; and the fact of its growing near the water explains the other term. The tree growing usually with others which crowd upon it, does not have chance for showing its beauty. The column and limbs are fluted or ridged, and the branches end in spray-like twigs. It is a rare tree but little known.

The Chestnut.

The rocky ridges and much of the high level grounds of this State are the natural home of the American chestnut tree. On ground suited for it, the tree easily gets ahead of all others which might grow; so it often occupies large areas, almost to the exclusion of other trees. This tree comes to timber size more quickly than any other native tree, unless it be the white pine. It is a model forest tree — tall, straight, slightly tapering, with a small top for so much body. The durability of the wood when used for sill or post work, for railroad ties, and the like, will always keep up a demand for a young growth of the tree. For cheap furniture and furnishings, too, it is one of the most available woods we have.

As an edible nut-bearing tree it is rapidly gaining in importance. The improving of the American chestnut by propagating from the best nuts found native, is already a success. A nut-bearing chestnut orchard can be reared about as quickly as an apple

orchard, in bearing condition. Sterile, or thin-soiled, rocky grounds, are good for chestnut growth, and the trees go on with practically no expense. For apples, we must fight all the way, and good, strong land must be given to the trees. If you wish to keep the restless boy upon the farm, let him plant and own a chestnut orchard. He takes to chestnut trees as naturally as the squirrels, and he would be delighted to add profit to his pleasure.

The Butternut.

The butternut is one of the true walnuts. Like other walnuts the outer husk of the nut is continuous, while in the hickories the outer husk is four-parted. This tree is native in this State, but is not common. It grows vigorously when planted. It is a very desirable tree for odd corners about a farm. It grows rapidly, and, if cut down, sprouts persistently. It makes a broad, spreading tree, somewhat late in leaf, but affording a good shade. The limbs are not numerous, but stout to the very ends. Each leaf is a picture in itself. The foliage clothes the tree with notable beauty. Dressed lumber of the butternut is in constant demand for cabinet work and nice inside finishing. It is light in weight, white, with slight tinge of red, receives a high polish, and is very durable. As a tree for producing fine finishing material the butternut is certainly desirable.

Butternut trees should be raised for the sake of the boys—and girls, too. Three or four bushels of the nuts is none too great a winter's supply for an enterprising, country boy. In after years some of the brightest links in his memory will be of certain crisp, October days, baskets of fat butternuts, grandfather's garret, the winter gathering of boys and girls, young and old, and the treat that follows from the stores of autumn. Marble fronts and costly drawing-rooms are dreary wastes beside such remembrances!

The black walnut has been reported as indigenous in this State, but the truth of this is doubtful. It thrives here vigorously, however, grows large, and bears nuts plentifully. It makes a good shade-tree.

White Ash.

The Ash.

Of ash trees there are two species, native and common, with a third, and a fourth, possibly native, but certainly rare. The different species of the ash are among the most valuable trees of the country. Strength, toughness, elasticity, durability, smoothness in working, and beauty of grain in finishing are qualities which recommend the wood for a great variety of purposes. The different kinds are mostly of rapid growth, and the tall, straight bodies work into useful material with very little waste.

THE WHITE ASH.

The white ash is the best of the eastern species of ash trees, and is found in colonies and scattered specimens, generally in moist grounds, all over this State. No cleaner nor more attractive bit of woods can be found than a colony of these trees which has taken exclusive possession of the ground. Their tall, lithe bodies, dressed in their deftly corrugated bark covering, with their light, airy tops, form a sylvan picture of rare grace and beauty. The Indian, so well versed in forest lore, could find no wood so true to his needs for paddle and bow as the tough, elastic ash; and American carriages to-day owe their superiority to all others largely to the rare combination of qualities which are found in this wood. The tree is always attractive, whether in the woods or open ground. When not crowded it grows a stout body with a stately, wide-spreading head. The limbs are numerous, but not "twiggy," and stout to the ends. They begin low on the body. The compound leaves form, altogether, a delightful shade, which, however, begins late in the season and ends early, a fact unfavorable to the tree for street setting. Still, they alternate well with maples, breaking the monotony which either sort alone might produce.

THE BLACK ASH.

The black ash is scattered about in considerable numbers in

this State. It thrives best in ground quite wet for most of the year, but is occasionally found upon dry land. The tree, in the woods, is even more slender than the white ash. It has a thick, corky bark, deeply cleft and broken, on limbs as well as trunk. This is a good point for its identification. The leaves have a darker hue than those of the white ash, and the leaflets of the compound stem are set close to the long mid-vein, which is not true of the white ash. The wood is similar in quality to that of the white ash, and is usually classed with it as "ash." It is a valuable tree for swampy ground.

PLANTING ASH TREES.

Concerning planting ash trees, for profit, the author of this paper has elsewhere written:

"The native species of the ash bear transplanting well, especially when taken from nursery-grown stock. They flourish best in moist ground, but will make good growth and handsome trees in any soil not excessively dry and sterile. There are probably hundreds of acres in most of the back-country towns of New England, now practically worthless, which might, in a quarter of a century, if planted with our native ash trees, be made of a value to cover all costs with double common interest rates. The first thinning would be for hoops and stakes; the next, for fence rails and poles; the third, for small timber, for which small trees are excellent. A final forest growth of forty years would be of undoubted commercial value. Why will not New England country boys try such a plantation

In the old world, it is no experiment. Such plantations are an emphatic success, and the conditions for it are even better here than there. Keep the seeds in sand over winter; plant them in drills in the spring; grow the seedlings in partial shade for a year or two; then set where they are to stand permanently. Or, to save time, buy the seedlings ready to set of tree growers, which may be done at very small cost."

Bearded Elm.

The Birches.

The birches form a valuable group of trees in northern temperate regions; and their relative importance increases the farther north we go, until they finally disappear as the last deciduous trees in Arctic lands. Four species are listed for Rhode Island, three being common, one "local" only. We owe much to the economic uses and scenic attractiveness of these trees. All of the birches make an agreeable, free-burning fuel when it is properly seasoned. For various mechanical uses, some of the species are in constant demand.

THE BLACK BIRCH.

The black birch, also called "sweet" birch, is often seen fringing country road-sides, the wooded shores of ponds, water-courses along the valleys, and springy places at the base of hills. It is a slender-branched, graceful tree, often, by the water-side, taking the drooping habit in its lower branches. Although not a good street tree for town purposes, it is admirably adapted for certain effects in landscape work. The sweet, aromatic flavor of the inner bark of the young branches of this birch probably lingers in the memory of most persons who were so fortunate as to have spent their youth in country places of this region. There was no poison in this kind of sweet-meat. It was as wholesome as the pure air and water of the hills.

The dressed lumber of this birch is in demand for many purposes. Floors made of narrow strips of it are simply elegant, especially if the shadings of the different cuts be properly arranged. "Mahogany" birch is from trees whose wood, from some cause, perhaps the soil in which they grew, has taken a dark hue. This wood improves with age. Veneering made from cuts where two large limbs join is among the handsomest of cabinet material.

This tree seeds abundantly, and grows rapidly. Altogether, it is a very desirable forest tree.

THE YELLOW BIRCH.

The yellow birch deserves more credit as an ornamental tree than it generally receives. When well grown, in open ground, it is a stately, wide-spreading tree. Its limbs are long, straight, and slender, striking out low down, and close together. It makes a delightful shade, and is a fine landscape tree. This tree grows naturally in moist grounds, but flourishes well on high land, and is often found belting mountain sides farther north. In forest growth it makes a tall timber tree of large dimensions. As finish-wood, the yellow birch is not so fine as the black, but makes good chair stock and fuel.

THE WHITE BIRCHES.

Two species commonly are known as white birch—first, the paper, or canoe, birch; second, the little gray birch. The "canoe" birch is rarely found native in this State. There is one well grown specimen in Davis Park, Providence; and, occasionally, the tree occurs singly, or in groups, among the northern hills of the State. In the forests of northern New England and Canada, it is a magnificent tree. Its tall, graceful body, white as new-fallen snow, its shapely, airy head, entitles the tree to the name which it has received, the "lady of the forest." For turning stock the wood has great demand, and it makes good fuel if seasoned properly. The bark is water-proof, and resists decay for a long time. This tree should be used in Rhode Island for ornament and shade. It is one of the most attractive trees which can be grown in this climate. Nursery-men have recognized its value, and have it for sale.

The little gray birch, usually called "white" birch, should not be despised. It occupies ground too poor for any thing else. It will make a fair crop of wood in ten to fifteen years. It is valuable as a nurse for other trees. It is much better than no tree at all.

ELM.—PROSPECT TERRACE.

The Elm.

The early settlers of the northern American colonies were pleased to find growing naturally here a kind of elm tree even superior in majestic beauty to the English elm which shaded their ancestral homes. While it was their great task to level the forests, and get rid of trees for lands to till, yet, in their ample door-yards, many settlers set the American elm, and saved others to grow where they stood. These trees to-day form a grand characteristic of many a homestead scattered among towns and villages of New England. They are associated with the well-sweep and the "old oaken bucket," and are linked with some of the most precious memories of men and women, who live much in what they recall of days of long ago. There is something in these trees besides the wood, although many a boy, as he looked up among their huge branches, going up and out with such magnificent sweep, has wondered where they got so many cords of it. Call the feelings cherished for such trees sentiment, or what you will, it is what moved Abraham Lincoln to stop his carriage, on returning from the army encampment to Washington, to take off his hat as he viewed a great tree near the road, and to exclaim: "Such a tree is one of the noblest objects of creation!" It is what inspired Bryant to write the "Forest Hymn," which contains some of the loftiest thoughts ever penned by an American. It is what led Oliver Wendell Holmes to say that "the best poems he ever wrote were the trees which he had planted." It is what Washington Irving has in mind when he writes, referring to the love of the English for forest trees: "There is something nobly simple and pure in such a taste. It argues, I think, a sweet and generous nature to have this strong relish and this friendship for the hardy and glorious sons of the forest. There is a grandeur of thought connected with this part of rural economy." We, indeed, keep good company in loving such trees as the grand old elms of New England.

The three southern of the New England States have as well-

developed specimens of the American, or white, elm as can be found in the country. The tree has a wide range of nativity—from Canada to the Gulf States, and west to the Mississippi. But it is among the older settlements of New England that the tree has longest had the advantage of open spaces and good feeding-ground. The tree is not particular where it stands, only that it has plenty of room to spread, and a good chance for its roots to forage for nutriment. It is a great feeder, and will send its roots a surprising distance to get a rich deposit. The great Johnston elm, one of the largest in New England, when standing, sent its roots far into a rich meadow more than a hundred yards away. Its habits should be well considered when deciding where to plant it.

One of the most interesting elms now standing in Rhode Island is at Prospect terrace, on Congdon street, Providence. It is probably a self-planted tree. When Congdon street was laid out, Jeremiah Congdon, who owned and gave the land, stipulated that the tree should be preserved. Street graders, in these days, would probably cut down the tree, for interrupting the curbstone line is, presumably, of more importance than preserving a magnificent, two-century elm tree. The story that this tree was planted by Roger Williams may properly be put with that other pretty fiction which tells the lovers of local history that the big boulder recently brought over the river from Massachusetts, and carefully placed within the Roger Williams landing-place at "Slate Rock," is the identical rock upon which the founder of these Plantations first set his foot! Still, it is not improbable that this tree was a sapling while Roger Williams was yet living. At any rate, it has outlived several generations of men and women who have been refreshed by its shade and delighted by its majestic proportions. All honor to Jeremiah Congdon, whose thoughtfulness preserved the tree!

The greatly varied forms which individual trees of our native elm take add much to its landscape value. The principal of these are shown in the photographs herein reproduced. One

ELM.

ELM.

of these is the "sheaf" top, impressive from its symmetry, and the graceful curves of its branches as they sweep the sky. The illustrative picture of this form, which is not uncommon, was taken, some years ago, from the tree which was cut down to clear the Athletic Building lot, at the corner of Broad and Page streets, Providence. The body of this fine tree, which showed about one hundred annual rings, was cut into meat-chopping blocks. "To what uses," etc.!

With a couple centuries of growth the "sheaf" top takes the appearance, and, in a favorable location, the magnitude of the tree illustrated, now growing opposite a farm house at the base of Neutakonkenut Hill. This tree, fortunately, was not in the way of the recent street-levelling, as were others nearly as large, which yielded to "improvements;" so it still stands, trembling at its probable fate.

A characteristic specimen of the wide-spreading form is presented from a tree now standing on the street at the eastern extremity of the "North Burying Ground," Providence. One of the limbs of this tree is about seventy-five feet in length.

The "Etruscan vase" form of the tree is of notable grace and beauty. It comes from cutting away other trees which grew up around it, leaving the elm alone to grow. The long, slender body is thus exposed, which corresponds to the stem of the vase; the spread and curve of the branches of the top patterns the bowl, while the roots strike out in ridges from the body to form the base. Such a tree sometimes sends out, from long dormant buds, short, brushy branchlets, after the sunlight comes to the body, producing what is named the "fringed" or "bearded" elm. An illustration of this form is here produced, the original of which grew upon the Ives and Brown estate, Providence. Place this tree by the side of the graceful palm, whose absence in our climate we may regret, and how much does it suffer by comparison?

So the elm runs through gradual variations of form, from the flat-top, wide-spreading "sheaf," "orbicular," "vase," and others to the "plumose," the rarest of all and almost unique in tree

shapes. Rhode Island has them all, and in well-grown specimens rarely, if ever, excelled elsewhere.

For wide avenues the elm is well adapted, but lines of these trees should not be set where they will be cramped for room to spread. The elm bears transplanting well, but should not be topped when reset, as may be done properly with the maple. The branches must grow naturally, or an ill-shaped tree will be the result.

Many elms are already historic; others are to be so. Among the trees planted to commemorate the lives of those who have, in some way, rendered valued service to human kind, the elm is conspicuous. It is well. Plant this tree, which combines more of the elements of grandeur, grace, and beauty than any other of the land which we inhabit.

The Poplars.

Very much in contrast with the elms are the poplars. They have been in ill-repute from the time that an ungracious writer compared the quivering of the "aspen leaf" to the "wagging of women's tongues!" The wood of them all is soft, stringy, light, and will scarcely make a fire. Yet the trees seed abundantly, and acres and acres of poplars spring up upon burned and waste grounds. But the day of redemption has come, and wood-paper stock takes them; saws have been made to cut them into thin slices for small box-work, so that they are no longer worthless. The large-leaved species is the one which now is the most useful. It can be readily distinguished from other poplars, at all stages of its growth, by the coarse-toothed indentations in the margin of its leaves. In the forests it is a lofty tree, especially in northern woods. The bark is peculiar, having a leather-like appearance and feeling. On mature trees it flakes off in large patches, thus giving areas of greenish white mixed, up and down the body, with light and dark brown. As this tree grows very rapidly, even in very poor soil, and the wood of it is already high-priced, it may well receive attention of tree-planters.

TULIP.

ELM.

The smaller "aspen" poplar grows everywhere, and is one of the last of trees to hang out its jaunty tassels in arctic regions. It seems like a vagrant when it hides in old gravel-pits, and creeps along sand-banks and railroad-cuts.

The "Balm of Gilead" is a poplar, and is probably associated, in the memory of many, with bruises, cut fingers, stubbed toes, and the like. Our grandmothers looked out to have one of these trees set near the house; and it grew fast, and shortly yielded the aromatic, healing wax from its well protected buds. The patented "healers" of the drug stores are poor substitutes for nature's remedies. This tree is probably native to this State, and may be seen, often broken and neglected, around many of the old country homes. It deserves a better fate. Its healing virtues have not diminished.

The Tulip Tree.

It is in place here to speak briefly of one of the choicest ornamental trees of our latitude, the "tulip."

The name recalls a beautiful flower of our borders, and the tree, in early June, mingles with its leaves flowers equally attractive. The petals of the flower form a vase-like chalice, shaded with orange and green, of notable beauty and symmetry. The leaves seem almost too formal for nature's work, but their shape is distinctively their own. Their truncated apex is peculiar. Their lively green in summer, and orange shades in autumn, make them attractive the season through. The tree is tall and stately, and architectural in its entire composition. Its formal characteristics make it harmonize well with dressed grounds and artificial surroundings. It appears perfectly hardy with us, and seems not to mind the dust and smoke of the city. Its shade is not very dense, but sufficient for a lawn tree, and for certain places near dwellings.

The tree is so rare in this State, as a native, that it is hardly known by a name at all appropriate. Some of the inhabitants around Wallum pond, where the writer found it wild in the woods, called it the "flowering maple;" others, the "high dogwood." A

few native specimens have been found in Scituate, and a stately one is now standing near Simmonsville.

Nursery-men grow this tree for sale, and persons desiring a fine ornamental tree, always clean and attractive, would do well to consider its merits. The lumber from this tree is the "white-wood" of our commercial yards. It is mostly obtained in the region drained by the Ohio and its branches. It is one of the noblest timber trees of the American forests. The trunks are massive, often six feet in diameter, straight, and without a knot. The reaches of this timber are fast disappearing. Their renewal is a matter of centuries, if it ever occurs. The tree seeds sparingly, and starts only under good conditions.

The illustrative photo., which is here reproduced, was taken from a tree on Broad street, Providence.

The Buttonwood.

Rhode Island ought not yet to give up the good old buttonwood as a homestead tree. It shows signs of recovery from some not-well-understood disease, which, some years back, has killed many of the trees, and made all of this kind look sick. They have been gaining, however, for some years. We should hope for full recovery. The buttonwood has strong characteristics; and we like such whether in a tree or a man. When fully grown the tree is huge in girth, height, and spread. The bark is peculiar, indeed, strikingly so—like a leopard's back, spotted. The branches strike out with a defiant air, stiff to the ends. The leaves are large, strong-veined, and of pattern-like make. It carries its "button-balls" of seeds through the winter, and they dance on the skeleton branches, amid snow and ice, like dead things come to life. The old tree decays at the base, hollows-out, and makes a play-house for the children, which they will never forget. A few of these old trees are yet left, and considerable numbers of young ones are found around muddy pools, by brook-sides, and various neglected spots. Let them stay.

THE TUPELO.

Under the name of "sycamore," the lumber of this tree is used for nice chamber furniture and cabinet-work. Some logs are beautifully clouded, and the grain knotted, so as to make fine ornamental work.

The Basswood.

It is not much of a country boy who nas not made a basswood whistle—that is, if any basswood saplings were within his tramping grounds. He soon learns, too, that grown-up basswoods are about the biggest trees in the forest. He finds that his grandfather had his high sleigh back made of a single board, four feet wide; and that his grandmother's "dresser" doors, and settee back were also cuts from the same board. He finds, also, that the wood "cuts like cheese," but will not split by his heaviest strokes, unless the frost is in the log. When he is older he finds that basswood logs are in demand, and bring a high price for many purposes where a light, fine-grained, tough-fibered wood is needed.

One who sees the desirable points in trees for shade or landscape effects finds a sturdy attractiveness in this tree, the generous, well-shaped leaves being especially noticeable. The blossoms, too, are sweet, and followed by a curiously winged fruit. The tree is the American "linden," and much better for all purposes than its European cousin often seen as a street tree. The basswood is native here, but not so common as it ought to be.

The Tupelo.

The smooth-sounding word tupelo is a better name than "snag-tree," or even "hornbeam," for the tree designated. The rough, "snaggy" appearance of its branches in old age probably suggested one name, and its tough, horny wood the other. "Tupelo" is the Indian name for the tree, and comports well with its smooth, beautiful foliage when the tree is in full leaf. This tree loves the water, and is often reflected from some pond, stream, or pool which it overhangs and adorns. The head of the tree takes a

number of odd and striking shapes; sometimes a nearly flat top, or umbrella-shaped; again, arms straight out, like rapiers, as in our illustration. In old age it seems to have kept company with the uncanny denizens of the swamps, and to have knotted itself into "snags." If no underbrush interferes the tree limbs very low, and usually takes the "umbrella" shape. It then, while in leaf, wholly shuts out the sun. The leaves are in tuft-like groups, at the ends of the fine twigs, and glisten with nature's varnish. They are the charm of the tree. In autumn they are the first to change color, and are then in a revelry of shades, from deep orange to the brightest scarlet. Its seeds are drupes of the size of a small pea, and are eaten and scattered by birds. The tree has recently been raised by forest-tree nursery-men, and it is found to be a valuable one for ornamental planting. Its varieties are known as "pepperidge," and "sour gum," in States west and south, where it grows to a large size.

Rhode Island has many of these trees, notably on Prudence and Conanicut islands, and on the shore-towns of the Bay. The tree here pictured stands in the swamp-land, within a few rods of the historic spot of King Philip's fall and death.

The Sassafras.

If there is any State outside of Rhode Island that can show so large a sassafras tree as is now standing upon the Larkin farm, in Cranston, we have yet to hear of it. The tree referred to measured, several years ago, 14 feet 3 inches girth, near the ground, and 12 feet 2 inches two feet up. Its height was 51 feet. The tree stands in a large field which has been cultivated for more than a hundred years. It was probably saved on account of its size. The tree is slowly dying, limb by limb. Near it, by the pasture wall, are forty or more of its progeny, some good sized trees for the kind. This tree is an object-lesson in preserving fine trees. There are many sassafras trees in this State.

SASSAFRAS.

Other Trees.

Only a brief mention can be made of a few remaining native trees of less importance than those more fully treated. The hackberry, also called the "false elm," is found scattered through the shore towns of Narragansett Bay, and occasionally inland. It is a knotty, scraggy tree growing, in good ground, to large size. Its wood is hard, tough, yellowish in tint, but not often found in the stock of lumber dealers. It has a cherry-like fruit, with thin, sweetish pulp, which dries on the tree. This forms winter food for birds. East Providence has a number of well-grown trees of this kind.

The "iron-wood" tree is scattered about the State. Its wood is exceedingly tough, strong, elastic, and durable. For firm wood team stakes, or binders to secure loads, there is nothing better. The hop-like sacks in which its seeds grow give it the name which it sometimes goes by, "hop-hornbeam." It is a small tree.

The black cherry is common enough, but objectionable as a breeder of the caterpillars which are so destructive to the foliage and fruit of apple trees. We know the great value of the cherry lumber, but let western States produce it. The less "bird" cherry trees the better, unless they come up as nurses for trees of greater value.

The flowering dog-wood—better call it by its botanical name, *cornus Florida*—is a desirable little tree, both for beauty and use. It is a very conspicuous object when in flower, as it appears by the waysides, along the borders of woods and in open lots. The white, or slightly tinted bracts which surround the true flowers are like great snow-flakes all over the tree, no less beautiful than the much prized magnolias. The wood is very close-grained, hard, and receives a fine polish. It is much sought for in cabinet work, and for toolhandles, under the name of American box-wood. A beautiful variety of this tree bearing pink flowers is propagated in the nurseries. The tree does well in cultivation.

Cone-Bearing Trees.

Cone-bearing trees, generally speaking, are not a large part of Rhode Island woods. But there are areas, in various localities, almost wholly composed of them. Hard-wood, deciduous trees appear to have got possession of most of the ground, and to have held it to the present time. The white pines, of lumber size, are rarely seen in this region, but vigorous sapling growths scattered about show how well the tree thrives. Any dry ground, even if mere sand, will grow the white pine. Fine plantations of this species are now growing in what were shifting sands of Cape Cod, Massachusetts. There are hundreds of acres in Rhode Island, now yielding little or nothing of value, which should be growing a crop of white pines. Thirty years would produce a stand of sufficient size for box-boards and the like. The first expense of buying and setting seedlings is small, and after that they take care of themselves. Whether in forests, or standing alone, the white pine is a fine tree. There is nothing coarse or unsymmetrical in its aspect. It adds much to our winter scenery, and no arboreal walk in summer time is more agreeable than a ramble among the pines.

The pitch-pine is often seen in this State, and occupies ground that would yield more profit if the white pine took its place. This tree takes possession of open, sterile lots, from the fact that the young seedlings need no protection from the sun, which is not true of white pine seedlings in the first two or three years' growth. The "needles," or leaves, are so resinous that cattle will not clip them; so they grow even in pasture lots. With us this tree is hardly to be recommended, either for fuel, timber, or for ornament.

The hemlock is one of the trees which has crept in from the north to occupy cool spots, mostly by the side of streams of water. The commercial value of the tree, its logs for boards, its bark for tanning, does not much concern the wood-growers of this State. But it is the most graceful and ornamental of our native evergreens. Its fine, spray-like branches, lively green, and almost

perfect cone-like symmetry, in open ground, are very satisfactory to tree-lovers. It bears transplanting well, but is liable to "spring-kill" in very sunny places.

The red cedar, so-called, forms a characteristic feature in the shore scenery of Narragansett Bay. It is a hardy tree, soldier-like in its form, and erect posture, and persistent in holding its ground. This tree has the widest distribution of any single cone-bearing species in America. Everywhere it has important uses—with us it is prized for stakes, posts, and fuel. In Florida it yields the cedar pencil-wood, which is now in such demand as to make it very costly.

The white cedar always grows in cool, wet swamps. It is a valuable tree for the ground which it occupies. It takes complete possession of some swampy tracts. A considerable area of the Kingstown swamps grows this tree. It readily starts from seeds scattered in suitable localities. The wood is light, soft, fine-grained, easily split, and very durable. For boat-building, railway ties, posts, fencing, and similar uses, it is a valuable material. The tree sometimes reaches a height of eighty feet.

The spruce is too rare a tree in the State to call for special notice. If either of our New England species is used for ornamental planting, it should be the white spruce rather than the black, as it is a far handsomer tree.

Tree Planting as an Investment.

A paper like what is here presented would be hardly complete without some reference to planting trees in forest masses with a view to profit.

Nature is doing much in the back towns of the State to keep the land valuable by growing wood. It would be a profitable investment, no doubt, if man would help along the matter, over certain profitless open lots, by making artificial plantings of desirable native trees. Not much has yet been done in this line, but we are not without at least two notable examples of marked

success in such work. The first is that of the late Zachariah Allen, which was begun in 1820, and the Dr. and Cr. account closed in 1877, a period of fifty-seven years. Mr. Allen selected for his tree-planting experiment, a tract of forty acres of worn-out pasture land, upon a bleak hill-side, in Smithfield. He planted on this land various forest tree seeds. All expenses, including valuation of the land, up to 1877, were $3,804.33. The total income, including wood left on the lot, was $6,348.06. Gain, $2,543.23—equal to $6\frac{92}{100}$ per cent. per annum on the original investment for fifty-seven years. This gives no credit for improvement to the land nor for the benefit rendered in conserving the rain and snow fall for springs and streams. There are lessons of value in the thoughtful experiment of Mr. Allen.

The other example, now in progress, is that of Mr. Henry G. Russell, whose landed estate occupies a large tract along the western shore of Potowomut Neck, Greenwich Bay. His work is of public value as showing that sterile and wind-swept lands may, in a few years, be converted into reaches of vigorous forest growth, attractive to the eye, and of sure money value for timber and fuel. Mr. Russell's plantations were begun in the spring of 1877, and, year by year, have been extended, until now about two hundred acres are thus occupied, on the western borders of his estate.

The land was without a soil, and composed of sand, gravel, and pebbles of an ancient shore, utterly worthless for cultivation. This strip of land was an "eye-sore," in full view from his residence, which over-looks, in other directions, a beautiful park, shaded by grand old oaks of original growth, and other choice trees of recent planting. This work in sylviculture has wrought a remarkable change. There are now acres of the European larch, of the earlier planting, which are large trees. One might soon get lost in the woods among them. There are blocks of white pine of sturdy growth. Rows of Scotch and other evergreens appear as one walks through the grounds. Various sorts have been under experiment. The white oak often appears, among the others, as a "standard," to take the ground by and by.

This young forest, now a delight to the eye, and a valuable woodland, was started under conditions apparently most unfavorable. But nature, aided by intelligence and faith, has achieved a success which should stimulate every owner of a "waste" acre of ground, by the shore or elsewhere, in Rhode Island, to a well-planned trial in this kind of improvement.