Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

Texas Forest News

Issued Monthly at College Station under auspices of
Vol XV., No. 1 TEXAS FOREST SERVICE January, 1933

TEXAS FOREST SERVICE RE-FORESTS AREA NEAR WARREN

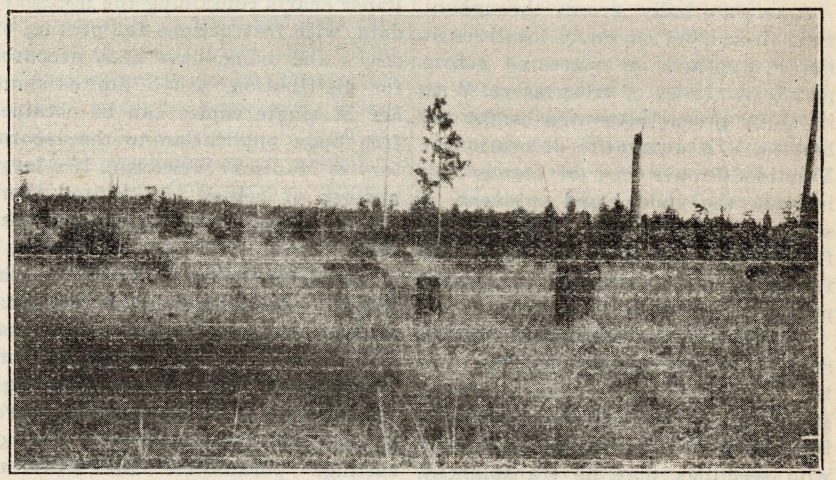
Sixty Thousand Slash Pine Planted In Tyler County

The Texas Forest Service has just completed planting sixty thousand slash pine seedlings on the Kirby Gift Forest four miles south of Warren in Tyler County. The trees used are ten months old and from 6 to 8 inches in height. They were grown in the State Forest nurseries near Conroe and Kirbyville from seed obtained in Alabama and Florida. Slash pine is not a native of Texas, but comprises an important part of the pine forests near the Gulf Coast eastward from the Mississippi River.

Experimental plantations of slash pine have been successfully established by the Texas Forest Service during the past two years on various soil types in East Texas in order to test the adaptability of the tree to that region. It ranks with the longleaf pine as regards lumber and naval stores but its rate of growth is much faster. A seven year old plantation of slash pine on the State Forest in Newton county increased one-half inch in diameter, during the first six months of 1932. Slash pine of pulpwood size has very small resinous content and white newsprint has been made from slash pine, using the same process as is used with spruce and balsam in the northeast. Its possibilities as a valuable paper pulp tree are becoming recognized.

In planting, the little trees are spaced approximately 6 feet apart by men working in pairs. The planting crew of 16 men was recruited from the local citizens. This constructive project not only affords an opportunity to employ labor but also constitutes a step toward making productive East Texas lands better adapted to timber growing than to any other purpose.

(Continued on page 3, Col. 1)



Loblolly pine reproduction encroaching on longleaf pine land following clean-cutting of longleaf pine. This area has been under an intensive system of fire protection for the past five years. State Forest No. 1, Newton County.

LOBLOLLY PINE ENCROACHING ON LONGLEAF PINE SITES

Quite noticeable in recent years is the encroachment of loblolly pine, and to a lesser degree shortleaf pine, on areas that once supported magnificent stands of longleaf pine timber. Factors contributing to this marked change in forest type are - (1) lack of longleaf pine seed trees; (2) the presence of hogs, and (3) fire protection.

If no longleaf seed is produced in the vicinity of a cut-over longleaf pine forest no new longleaf forest can be expected unless placed there by man. Hence, if the timberland owner desires to grow a new crop of longleaf pine on his land care should be taken to leave a few seed producing trees of the longleaf species on each acre cut over.

The "piny-woods hog" has long had a reputation as an enemy of the longleaf pine because of his idea that the roots of a young longleaf is fine eating; and to get such desirable food the hog will work hard and long to uncover the roots and eat of the desir-

(Continued on page 2, Col. 3)

NATIONAL AND STATE PLANNING IN LAND USE

The Texas Forest Service has for the past eight years advocated a study, by the Federal government and the states, of the fundamental factors involved in arriving at a proper and beneficial land utilization policy to the end that constructive action may follow in the development and use of our soils for general agricultural crops, for grazing and for timber production.

President-elect Roosevelt has long been an advocate of such procedure and has made commendable progress in developing a land utilization policy for the State of New York. The following extract from a recent letter written by him to the West Coast Lumberman of Seattle, Washington, emphasizes his stand and reiterates the need of a nation-wide soil survey and national land use program.

"Apart from the present emergency, I think we need a more definite and comprehensive national plan for protecting, conserving and enlarging our forest resources. This plan should

(Continued on page 3, Col. 3)

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

HOLLY HAS POSSIBILITIES AS A FARM CROP

Growing Christmas holly on the farm, either by the plantation method or by protecting existing stands in the woodlands, offers to farmers in the East Texas commercial timber region, an opportunity to supplement the farm income.

American holly grows throughout East Texas but in many localities it has disappeared or retreated before perennial armies of trespassers. With its shiny green leaves and bright red berries, it is a favorite decoration at Yuletide. Proper care of stands will increase the yields and prevent a shortage of Christmas greens in the future. Protection of the woodlands from fires is important if permanent production is to be maintained.

Plantations of American holly would supplement the supply coming from the woods. New trees may be propogated by layering, or from cuttings. Seeds may be gathered and planted, or wild seedlings may be transplanted, but the stock so obtained is not very satisfactory.

Once planted in the field or woodland, holly requires little cultivation, but the plantation requires strict protection from fire. In woodlands holly may be planted to utilize as much as possible the openings that exist. Only the female holly trees bear the red berries there should always be occasional male trees present, however, to insure pollination and development of the berries.

Great quantities of holly sprays and wreaths are sold to local wholesale grocers, florists, market stores and open-air stands for the Christmas trade. It is well in all cases for producers to make all marketing arrangements before harvesting the holly crop. Expense and loss of valuable material can be avoided in this way. As the "living Christmas Tree' idea has spread in recent years, the small plotted holly tree might also be introduced and grow into favor. This suggests new outlets for garden and nursery-grown plants.

The U. S. Department of Agriculture has issued a publication "Growing Christmas Holly on the Farm," Farmers' bulletin 1693-F, which may be obtained from the Superintendent of Documents, Washington, D. C. The price of the bulletin is 5 cents.

NEW GRADE STICK FOR HARDWOOD PRODUCERS

A hardwood grade stick has been devised by the Forest Products Laboratory in collaboration with the National Hardwood Lumber Association to be used as a guide in the production of maximum grades of hardwood lumber by small sawmill operators. Paper charts containing the necessary data, with instructions for pasting on sticks and using, have been prepared for distribution, and a limited number of single copies can be obtained free upon application to the laboratory at Madison, Wisconsin. If a large number of copies are desired there will be a charge of 5 cents for each copy.

Hardwood lumber is graded on the basis of the production of the total surface measure of the board that can be worked up in a definitely limited number of clear-face cuttings, each passing a minimum size requirement. From the stick the number of cuttings permissible for different grades, lengths, and widths can be read directly for all kinds of hardwood lumber except walnut, poplar, hickory, butternut, rock elm, and mahogany. Although it can not take the place of the technical provisions and full text of the National Hardwood Lumber Association rules and is not sufficient in itself to grade lumber for shipping, it promises to be useful to nonprofessional inspectors and purchasers as well as to operators of small mills.

TOOTHPICKS

Maine can well be called the home of the toothpick industry. It was here the industry had its origin in the United States and at present has the largest toothpick mills in the world. The capacity of the Maine mills is a carload a day, or approximately 170,000,000 toothpicks. About 900 tons of toothpicks are manufactured annually, which in the aggregate consumes approximately 3500 cords of sawn birch. Each cord of birch will yield about 9,000,000 toothpicks or an annual production of 29,500,000,000 toothpicks. In Maine the white birch also supplies the raw material for spools, shoe-pegs, and shoe shanks which exceed toothpicks in the amount of production.

LOBLOLLY PINE ENCROACHING ON LONGLEAF PINE SITES

(Continued from page 1, Col. 2

able part. Hence, where there are hogs running in an area carrying long leaf reproduction the chances are slim that any of the trees will reach a size too large to interest the hog. Thus the owner desiring to reforest with longleaf pine had best make sure that the woods hog does not range in the same territory.

Somewhere adjacent to most stands of longleaf pine will be found bottom lands carrying loblolly pine. So long as fires run over the upland the loblolly pine cannot grow there, for it is easily fire-killed. But when fire protection comes to the upland the loblolly pine rapidly spreads from the damp security of its bottom land home and each seed year finds it reaching out farther and farther on the upland. Because the seed trees rarely fail to bear seed and because these seed are light and carry relatively far in the wind it is not many years before the upland carries a forest of young loblolly pine.

Because loblolly pine timber is not quite so desirable as longleaf pine and because it cannot profitably produce turpentine and rosin, cutover longleaf pine land reforested to loblolly pine will probably not produce the same income that a similar stand of longleaf pine would produce on the same area. However, loblolly pine is much to be preferred to no pine at all and so should be encouraged for those areas where no longleaf pine remains. If there is some longleaf pine on the area it should be given preference in the silvicultural treatment of the stand so that eventually the land may again support the more desirable species.

GEORGIA ACQUIRES FIRST STATE FOREST

Although Georgia has several forest areas set aside as forest parks its first state forest was so designated recently when the deed covering a gift of 100 acres of forest near Augusta was duly recorded.

Pine seedlings are our future pine forests. Fire kills the baby trees as Herod killed the human babies.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

TEXAS FOREST SERVICE REFORESTS AREA NEAR WARREN

(Continued from page 1, Col. 1)

The State Forest near Warren comprises a tract of 600 acres donated to the Agricultural and Mechanical College, of which the Forest Service is a Division, by Hon. John H. Kirby of Houston. The deed specifies that this tract is to be used as a demonstration and research forest and also that the net proceeds are to be used to establish a loan fund to assist worthy students attending the College. A fair to good stand of young longleaf pine covers most of the tract and the plantation just completed was for the purpose of reforesting areas where the natural production was not sufficient to make up a full stand. Protection from fire is secured by means of a tree cab lookout station and fire lanes. The tree cab station also functions in promptly detecting fires occurring within a radius of 7 or 8 miles in every direction.

CHILDREN PLEDGE PROTECTION TO FOREST TREES

Forest-conservation programs recently given by pupils in public schools in Denver, Colorado, included drawing maps of the national forests in the State—locating the local geographical features and species of trees says the Forest Service. At the end of the program the children read in concert the following pledge:

Pledge

Trees are the helpful friends of man. Therefore I will do my best to keep them from harm; I will do no act that might endanger their safety; I will learn to practice the rules for fire prevention and forest conservation; I will work and rest and play in the forest at the right time and in the right way so that there will be forests for us and for future generations to enjoy; I will not spoil the dwelling places by leaving rubbish in them nor by injuring them so that they can not provide use with pure air; I will protect them so that they may live a useful life and be a glory to our mountains and a benefit to our country.

Each year thrifty trees grow new wealth for you. Do not let fire stunt the growth.

PLANTING TIME IS HERE

Tree planting time is here for all Texas except West Texas and the Panhandle country, where the winter months are unusually dry and the roots of trees have a tendency to dry out before spring rains arrive. General rains throughout East, Central and South Texas during the past few weeks have made conditions ideal for winter planting of trees and with care given the species to plant, their planting and attention given them after planting, success is assured. Unless one desires to experiment with an exotic tree, he should observe what is growing successfully in his vicinity, since there is more assurance of success by planting those species that have proven their adaptability to the locality. In practically every section of the State many native, as well as adapted plants, can be found available for beautifying the home grounds.

Too much stress cannot be laid on the care of the tree after planting. A few suggestions that will insure successful planting of trees are: Plant adapted trees; plant small trees; plant during the proper season; plant vigorous, healthy trees with good root systems; keep roots moist before planting; plant in pulverized fertile soil; cultivate and water the trees every ten days during the growing season for the first two years; protect trees from insects and fungus attacks by spraying.

MILL EFFICIENCY

A comparison of mill efficiency in converting logs into lumber, between the United States and Sweden indicates that mill practices can be improved in this country. The percentage of waste and amount of seasoned lumber involved is:

	United States Per cent	Sweden Per cent
Saw dust	13.5	8
Edgings and trimmings	8.7	6
Slabs, barks, refuse and miscellaneous waste	25.2	12
Shrinkage and seasoning waste	7	5
Seasoned rough lumber	45.6	69
Total per cent	100	100

NATIONAL AND STATE PLANNING IN LAND USE

(Continued from page 1, Col. 3)

have among its objectives more effective stabilization of the forest products industry. The excellent program adopted this year by the Society of American Foresters needs to be translated into more effective, coordinated action by individual forest owners of the several states and the nation. **We need also, as I have stated on other occasions, a soil survey of the entire nation and a national land-use program. This has an important bearing on reforestation which must be jointly a State and Federal concern, but with more effective engagement from the Federal government than it has received in the past."**

FORESTS HELP SAFEGUARD MORTGAGED COLLATERAL

Word comes from Louisiana that a number of parishes in that state have on record mortgage instruments in which the recipient of the loan agrees to the following clause:

"The said appearer mortgager, binds himself and obligates himself that until the full payment of this mortgage, he will protect the land herein above described from grass fires, and will diligently practice forestry or tree growing on the unimproved portion of the said land."

Apparently the banks and real estate loan companies of that state have recognized that the production of timber as a crop on those portions of the farms best adapted for such purpose and illy suited for general farm operations serves to make the collateral of greater value. Incidentally this requirement should constitute an integral part of proper farm management on most farms in the pine region of the South. The Louisiana practice contains food for thought for the bankers of East Texas and also for the Federal Farm Loan Bank. In many instances the value of the standing timber in a farmer's woodland is several times in excess of the value of the soil itself.

A fire break is a fort from which to attack fires.

Less fire in the forest, more wood in the tree.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

TREE CROPS

President-elect Roosevelt at a meeting of the Meriwether Timber Protective Organization, Warm Springs, Georgia, on November 29, 1932, made the following pertinent remarks on the raising of tree crops.

"Other nations for years," he said "have been practicing the raising of tree crops and have been making money out of it. One city in Germany is maintained by the revenue from a city-owned forest.

"We have figured that we can treat tree crops very much the way we treat cotton, corn and wheat crops and perhaps without the fluctuations in prices which seriously affect these other crops.

"When every acre of land in every State in the Union is put to the best use for which it is fitted, there will be far less danger than now of overproduction on some lines and underproduction on others; and then, there will not be so much hit-and-miss about our economic policy."

TREE RINGS

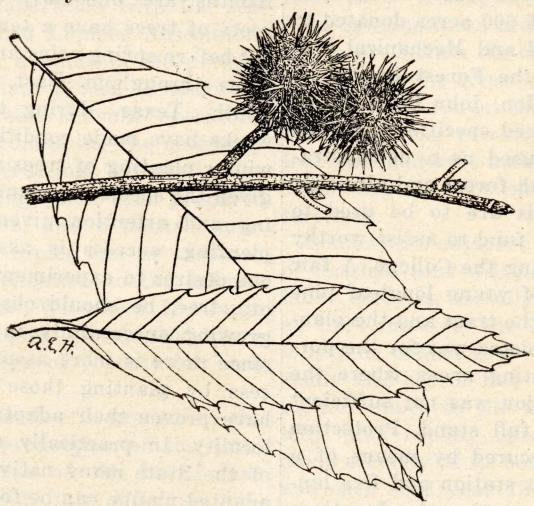
It has been demonstrated that the width of growth rings or annual rings made by trees each year vary in direct proportion to the amount of rainfall. A wet year will produce a wide or thick ring while a dry year produces a narrow or thin ring. An exceedingly wet spring may give way to an intense dry period, to be followed by a wet spell and the fall dry period. In such a year two rings may be formed and one is very apt to count such rings as two years growth. By careful inspection, however, these growths can easily be distinguished. The summer wood of the mid-season ring may not entirely circle the tree, is narrower and not as dark as the later summer wood. Since normally trees make a growth ring each year consisting of the spring (light) wood and summer (dark) wood, the approximate age of the tree can easily be ascertained by counting these rings on a cross section of the tree trunk at stump height and estimating the number of years it took the tree to grow to this height.

Burning off land impoverishes the soil and the landowner.

CHINQUAPIN

(Castanea floridana Ashe.)

This species is found as a tree up to 24 inches diameter and 50 feet high on sandy ridges near Conroe, Montgomery County, Texas, also in Rusk County and probably elsewhere in East Texas.



The **leaves** are 3 to 4 inches long, 1 to 2 inches wide, sharply toothed and pointed, dark green in color. The **flowers** are in catkins and the **fruit** ripens in the late summer or early fall. The nut is borne singly in a burr measuring about 1 inch in diameter; it is rounded, dark chestnut-brown and shiny, and the thin coat covers a sweet, edible kernel.

The **wood** is light, hard, strong, coarse-grained; suitable for fence posts, cross-ties and fuel. However, because of the relative scarcity of the species it is of little economic importance.

Castanea paucispina Ashe is a small shrubbery species of chinquapin found in the Sabine River basin of Texas and Louisiana, and probably west to the Trinity River basin. Having an underground step or runner this species sprouts freely and often forms thickets. The fruit occurs in a single pair of burrs, occasionally two pairs, in marked contrast to the large cluster of burrs on **Castanea floridana** Ashe, and usually ripens in August.

Easy to start from the seed, **Castanea floridana** Ashe deserves more attention, development and planting as a nut-producing tree of potential commercial value. The fruit of **Castanea paucispina** Ashe is equally edible but the growth habits of the species make it less desirable for commercial development.

FOREST TERMINOLOGY

Instances very often occur when only a vague idea exists as to what constitutes the various tree classes and the development classes or stages between which there is more or less similarity. According to the Forest terminology adopted by the Society of American Foresters, tree classes and development classes are distinguished as follows:

Tree classes:

Seedling—a tree, grown from seed, not yet 3 feet high.
Shoot—a sprout, not yet 3 feet high.
Small sapling—a tree from 3 to 10 feet high.
Large sapling—a tree 10 feet or over in height and less than 4 inches diameter, breast height.
Small pole—a tree 4 to 8 inches diameter, breast height (d.b.h.)
Large pole—a tree 8 to 12 inches, d.b.h.
Standard—a tree 1 to 2 feet d.b.h.
Veteran—a tree over 2 feet d.b.h.

Development class or stage.

Seedling stage or seedling growth—a stand of seedlings.
Thicket stage or brushwood—a stand of saplings.
Polewood stage—a stand of poles.
Young timber stage—a stand of standards.
Old timber stage—a stand of veterans.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

Texas Forest News

Issued Monthly at College Station under auspices of
VOL. XV., No. 2 TEXAS FOREST SERVICE February, 1933

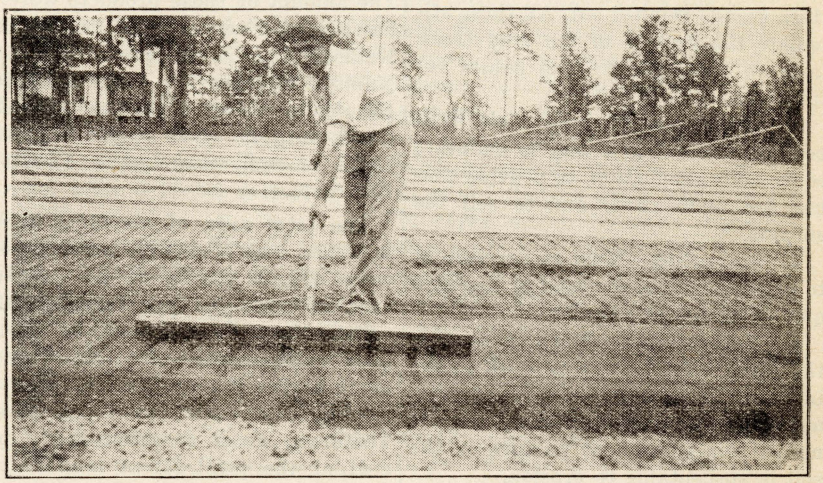
VOCATIONAL STUDENTS OF WARREN STUDY FOREST PLANTING

Headed by their vocational agricultural teacher, A. D. Carson, 30 vocational agricultural students of the Warren, Texas, high school visited the John Henry Kirby Gift Forest on December 16 to obtain practical instruction in forest tree planting. The Texas Forest Service tree-planting crew under the supervision of A. D. Read demonstrated how trees are planted for reforestation purposes. Mr. Read then explained how tree seed is collected and the manner of planting it in the forest nursery to produce the planting stock. Methods of estimating standing timber were also discussed and demonstrated.

Mr. Carson and his students are actively interested in growing timber as a farm crop and are therefore studying forestry subjects in addition to their other vocational agricultural work. Several of the students expect to collect forest tree seed next fall and establish small nurseries of their own to gain experience in these phases of forestry work. Mr. Carson believes that in timber counties of east Texas timber should be considered an important farm crop and should be handled in a scientific manner to obtain the highest yields and greatest profits.

The Kirby Gift Forest was deeded to the Agricultural and Mechanical College of Texas to be used for forest research and demonstration and to provide, through profits from timber, a loan fund for needy students of the A. and M. College, the fund to be administered by the Association of Former Students of the College.

The forest is under the administration of the Texas Forest Service, a division of the College, and the planting being done is for the purpose of reforesting open areas that are not reforested by natural means.



Preparing beds for planting tree seed. Section of the forest nursery at State Forest No. 2, near Conroe, Texas.

A WOODS IMPROVEMENT OPERATION PAYS

Because they have been cut-over several times with only the best trees being removed at each harvest, many farm woods of East Texas are today growing very low quality timber and in the minds of their owners represent liabilities rather than assets.

Farm woods cover a considerable percentage of the total area of most East Texas farms. They should be producing revenue, profits. But how can a run-down piece of woods pay profits? Many owners believe they cannot and so let them lie idle or clear them up for farm land that really isn't needed.

The Texas Forest Service thought otherwise about a piece of run-down forest in Montgomery County. Compartment I, of State Forest No. 2 includes about 25 acres. It was stocked with a stand consisting chiefly of very defective hardwoods. Occasionally there were to be found a few good pines, gum and oaks. Underneath the overstory examination disclosed a stand of seedling pines struggling for

(Continued on page 3, Col. 1)

SUMMARY OF FIRE PROTECTION WORK DURING 1932

During 1932, the Division of Forest Protection, Texas Forest Service, employed a field force of 167 men. This force consisted of 40 patrolmen, 8 lookoutmen, 12 smokechasers, and 107 forest guards. The guards were local residents and were employed on an annual retainer basis. The entire force was on duty 133,891 hours or 9.6 hours per man day. The classes of work performed with percentages of hours spent on each class was as follows:

	per cent
Fire Prevention	21.47
Fire suppression	64.60
Improvement work	3.79
Clerical work	4.03
Sunday and Holidays	2.49
Miscellaneous	3.72
	100.00

The force posted 7,924 new fire notices and replaced 6,236 old ones, visited 844 schools and gave talks on forest protection to 56,349 pupils, distributed 45,197 copies of forestry lit-

(Continued on page 3, Col. 3)

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

THE ESSENTIALS OF FARM FORESTRY

1. **Protection**—The farm woods must be protected from fire, insects, disease and other injury.

2. **Improvement Cutting**—the less valuable tree species must be cut out. Crooked and "wolf" trees removed; thick stands thinned out. All these stimulate the growth of the crop trees, improve their quality and insure future tree crops.

3. **Utilization**—Merchantable timber must be cut in a way to maintain continuous production, to provide timber for farm needs and to sell the surplus.

4. **Marketing**—Must be carried out to provide for the disposal of the high quality timber at a profit.

5. **Reforestation**—Open areas on the farm must be put to work growing trees. The land used will not grow agricultural crops profitably, is not needed for permanent pasture or the soil is susceptable to erosion.

FARM FORESTRY Means Increasing the Farm Income by:

1. Making non-agricultural lands yield a profit.

2. Better utilization of timber on the farm.

3. Marketing higher grades of wood products direct to the consumer in the form of posts, poles, sawlogs, etc.

4. Growing more and better timber on the farm by protecting it from fire and over-grazing; removing mature, defective and inferior species of trees.

Osage Orange is the only native wood that furnishes a dye in commercial quantities. In color it ranges from yellow to golden brown and is used in dyeing leather as well as textiles.

It is reported that in Ohio, during 1932, the 1000 members of 4-H Clubs enrolled in forestry projects planted 475,000 trees. During this same period vocational students of the state planted 260,000 trees.

The saplings of today are the timber trees of tomorrow. Fire kills saplings and injures timber. If we are to have timber for future needs, our young trees today are valuable and are worth protecting.

FARM WOODLANDS OF TEXAS

Farm forest products of Texas rank eighth in the list of all farm products, according to the census of 1930, Bureau of Agricultural Economics, U. S. Department of Agriculture. The value of forest products, cut on farms for home use and for sale, was $8,440,281. The amount of these products were.

Sawlogs and veneer logs*	103,604,000
Number of poles and piling	207,136
Number of cross ties	1,490,408
Number of fence posts	8,739,675
Cords of pulp wood	8,151
Cords of fuel wood	1,537,152

*board feet.

The total area of all farm woods in Texas was 15,689,483 acres. There were 495,489 farms or an average area in woodland per farm of 31.7 acres. Many farms have no woodland which would make this average much higher if only those farms containing woodland were considered. The farm woods constituted 55.7 per cent of the total forest land in the State which was also 12.6 per cent of the total farm area. All classes of forest land, that is, commercial, non-commercial and non-commodity, covered 28,177,858 acres or 16.8 acres. The land area of Texas is approximately 167,934,720 acres. Farm owned lands included 124,707,130 acres or 74.3 per cent, the average farm having an area of 251.7 acres.

In considering forest products cut and sold from farms in the 12 southern cotton states during 1930, they took fourth place as a source of the cash income of all agricultural crops. The commodities outranking farm forest products were cotton, tobacco and potatoes. For these 12 southern states the cash income for the six principal farm crops were.

Cotton (lint and seed)	$708,017,000
Tobacco	174,286,000
Potatoes (all kinds)	82,978,000
Forest products	82,434,000
Truck crops	81,620,000
Peanuts	21,350,000

For the entire United States farm forest products ranked tenth among 50 different items in gross income from all farm production.

Banana oil is not made from bananas or any other fruit. It is one of the hundreds of products obtained from coal tar.

HARDWOODS, SOFTWOODS AND NAVAL STORES

Trees are referred to as hardwoods or softwoods without the meaning often being understood. Another term that is often not understood is naval stores or the commodities to which it refers.

Hardwoods

Are broad leaved trees. They belong to a botanical group of plants called angiosperms. The term applies to this botanical grouping and not to the actual hardness of the woods for some of the hardwoods are actually very soft. The term angiosperm means literally "having seed enclosed". It includes such groups often spoken of as hardwoods, deciduous trees, porous woods, and broad-leaved trees. In all hardwoods pores or vessels are found that are specialized water conducting elements that are not characteristic of soft woods. In this group are found the oaks, maples, hickories, ash, elms, magnolia, etc.

Softwoods

Belong to a botanical group of plants called gymnosperms. This word literally means "seed not enclosed". The terms generally applied to this group of trees are softwoods, evergreens, non-porous woods, needle or scale-leaved trees, and conifers. However, not all the gymnosperms are needle-leaved, evergreen and cone bearing. The pines, and cedars of Texas belong to this group.

Naval Stores

Is a term applied to turpentine and rosin. The crude material from which these are obtained is called oleoresin. This is the viscous mixture of non-volatile solids and essential oil secreted by the resin-forming cells of the pines and certain other trees. The turpentine and rosin is obtained from the oleoresin through distillation. In Texas the production of naval stores from longleaf pine has been of great commercial importance. At present the industry is centered at Weirgate, Newton County; Hillister, Tyler County; and Zavalla, Angelina county.

The two tallest trees in Britain are said to be a Douglas fir in Castle Rock, Welchpool, and a Silver Fir in Scotland, each of which is 168 feet high.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

A WOODS IMPROVEMENT OPERATION PAYS

(Continued from page 1, Col. 2)

existence but about to die out because of the heavy shade and root competition from the defective hardwoods.

An improvement cutting was started, in accordance with the plan of forest management approved for the forest.

The undesirable trees were marked for cutting. Choppers were hired to cut these marked trees and turn them into stacked cords of 4-foot wood at a contract price of $1.00 per cord.

Predictions were freely made by interested parties that not one bit of this cost could be recovered in cash but would have to be charged against the cost of growing the pine forest that would result from releasing the baby pines that struggled for life below the overstory.

This forest is near Conroe and the new gas and oil field. When the improvement cutting started gas was being piped into the city for heating and cooking use. All local wood yards closed up. Certainly Conroe seemed to offer a mighty poor market for the wood. It was offered to Houston firms but their specifications were so strict and prices so low that the wood could be sold to them only by taking a sizeable loss.

So as last resort, and with little hope of success, a price sufficient to cover stumpage value and cost of cutting was placed on the wood and then word was passed out that it would be sold at that price to any one coming after it and paying cash in advance.

No "nibbles" at first. Then came some cool nights. Many Conroe people didn't have gas or the money to install it and buy the necessary stoves. Out came the old wood burners and with them arose a demand for wood. None in town. Some one recalled hearing of some wood at the State Forest. Some one with a truck and no job went to investigate. The wood began to move. Demand increased. Some buyers even drove almost 35 miles from Houston to get loads.

And, to shorten the story, it didn't take long to sell those 126½ cords. Price was reduced at the last on the very low grade wood to just cover the cost of cutting. But the wood was sold for cash over the cost of the improvement cutting.

An undesirable hardwood forest was changed into a fast growing young pine forest and the owner, the State in this case, had profited not only directly on the operation but indirectly through the decidedly increased future value of the improved forest.

Many farmers own similar land, that can be profitably improved in similar manner. The operation will pay cash income and future dividends.

STATES ENACT FORESTRY LEGISLATION

Laws reflecting progress in forestry were enacted in several states during the year ending June 30, 1932.

Mississippi repealed the 1924 law pertaining to taxation, protection and the regulation of unimproved lands. New laws were passed providing for special assessments, not in excess of 3 cents per acre, for the protection of timbered and uncultivatable lands and also instructing grand juries to report the status of forest protection in their respective counties. The state set aside a 23,000 acre tract as a State Forest.

Wisconsin made a special appropriation of $500,000 for forest protection. This amount is to be used largely for fire lanes and roads which also will aid the unemployment situation.

Rhode Island enacted legislation requiring operators of small portable sawmills to report the location of their mills also for the registration of owners who desire to cut their timber for purposes other than domestic use.

Virginia created a law that makes land owners liable for all expenditures made by the state in suppressing forest fires on lands adjacent their holdings that are caused by their negligence.

New York amended its conservation law to permit the sale of timber and forest by-products. A constitutional amendment was passed by popular vote, at the general election, in November 1931, authorizing the expenditure of $19,000,000 over a 11 year period for purchase and reforestation of land in the State.

Alabama enacted legislation providing imprisonment for wilfully or maliciously setting fires to trees of any age.

SUMMARY OF FIRE PROTECTION WORK DURING 1932

(Continued from page 1, Col. 3)

erature and held 7,705 personal interviews.

In the East Texas Commercial Timber Region, of 12,624,000 ocres, 8,010,000 acres, or 63 per cent is under protection. Owing to the lack of available funds the field force is employed during the periods of greatest fire danger which generally extends throughout the spring and fall seasons. On 1,400,000 acres of timberland owners contribute 50 per cent of the protection costs which is used to carry on an intensive system of fire protection under what is known as the protection unit plan. The remaining 6,610,000 acres is covered by a blanket patrol.

During 1932 there occurred 6,211 fires. The area burned was 527,446 acres with a resulting damage to merchantable and un-merchantable timber, forage and improvements of $442,006. The period from November 8 to November 17 included a series of dry "northers" accompanied with such low humidity and poor visability that it presented the most severe fire hazard since 1924. Over 49 per cent of the area burned during the year occurred during this nine day period. The causes, with percentages, of all fires were, incendiarism 59.7; smokers 24.9; brush-burning 5.5; campers 4.8; lumbering 1.9; miscellaneous 1.5; unknown .9; railroads .7; and lightning .1. The large percentage of fires having an incendiary origin was caused by burning under-brush to facilitate the rounding up of livestock, setting fire to damage the range and timber of others and the number of back-fires set to stop fires approaching farm property.

FOREST TREES OF TEXAS

A revision of Bulletin No. 20 "Forest Trees of Texas" is in the hands of the printer and will soon be available for distribution. This bulletin has been very popular throughout the State. There are several hundred requests on file that will be filled as soon as the revision becomes available. A copy of the bulletin may be obtained by writing E. O. Siecke, Director, Texas Forest Service, College Station, Texas.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

TRAIL RIDERS OF THE NATIONAL FORESTS

The American Forestry Association announces the sponsorship of two splendid saddle horse trips through primitive areas in the rugged rocky mountains of Montana. Trip number one leaves Missoula on July 10 and includes seven days. The route covers 222 miles of mountain scenery adjoining the Continental Divide in the Flathead National Forest. Trip number two includes a 120 mile automobile trip from Helena to Benchmark Camp,, on August 16, thence by saddle for five days through 75 miles of mountain scenery along the east side of the Continental Divide in the Lewis and Clark National Forest. Returning from Benchmark Camp to Helena on August 22. These trips are open to anyone seeking knowledge and recreation in the great out-of-doors. Both parties will include men and women. There will be experienced guides. Pack and saddle horses will be used, as no roads lead into the primitive areas. According to Ovid Butler, executive Secretary of the American Forestry Association, these primitive areas are unspoiled and have been preserved for the public to enjoy. Details of the trips may be obtained from the American Forestry Association, 1717 K. Street, N. W., Washington, D. C.

MISTLETOE

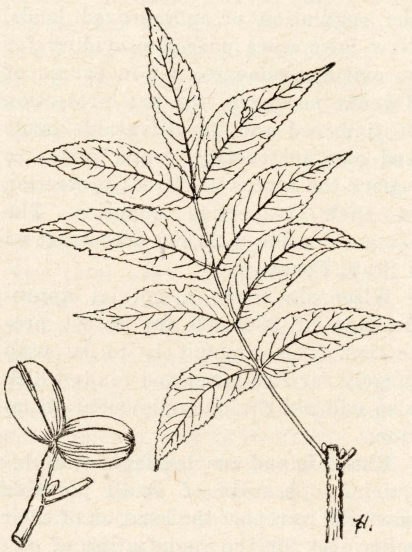
Mistletoe found on the oaks and other trees is a parasite which means that it is dependent upon its host for a livelihood. Many species have green or yellowish-green evergreen leaves that contain chlorophyll tissue which enables them to manufacture plant food. Their principal dependency on their host is the water supply, together with the organic and inorganic food materials it may contain. The plant bears various colored white, yellowish to pink berries, in clusters according to the species of which there are 100 known to the United States. These species occur on 22 genera of hardwoods and 5 genera of coniferous trees. As the berries mature they become covered with a sticky, mucilagneous substance which aids them in distribution and to attach themselves securely to the place of lodgement on the bark. When the seed germinates it sends out a tube from which sinkers develop. These penetrate through the bark to the cambium layer and as the tree adds new growth each year they become embedded in the woody portion of the tree. From the cambium or the living portion of the tree, the mistletoe obtains its food supply, the loss of which gradually weakens the host's vitality. When a tree is severly attacked there becomes such a drain or arresting of the food supply, through the sinkers girdling the cambium, that the tree dies.

The control of mistletoe is a difficult problem. When infection is severe in the smaller branches they may be pruned off. Individual plants on the tree stem can be cut off close to the bark. Repeated breaking off new shoots, so the green foliage does not develop will eventually kill the plant. When a tree is heavily infested the best method may be to remove it thus eliminating the spread of the mistletoe seed to nearby trees.

PECAN

(Hicoria pecan Britton)

The pecan, "state" tree of Texas, is found native in the state from the pine woods west throughout central Texas, centering in the watershed of the Colorado River. It makes an excellent shade tree and is very valuable for the nut crop it bears. Often planted in "orchards." The pecan is a tall-growing tree, attaining heights of over 100 feet. When grown in the open it forms a large rounded top of symmetrical shape.



The outer bark is rough, hard, tight, but broken into scales; on the limbs, it is smooth at first but later tends to scale or divide as the bark grows old.

The **leaves** resemble those of the other hickories and the black walnut. They are made up of 9 to 17 leaflets each oblong, toothed and long-pointed, and 4 to 8 inches long by about 2 to 3 inches wide. The **fruit** is a nut with rounded base and pointed apex from 1 to 2 inches long, and one-half to 1 inch in diameter in a thin husk which opens along its grooved seams when the nut ripens in the fall. The nuts vary in size and in thickness of shell.

The **wood** is heavy, hard, brittle, not strong, and of little value except for fuel and wagon stock.

The bitter pecan (Hicoria texana Britt.) found in the valley of the lower Brazos, has tough, strong wood.

FORESTS ABSORB WATER

Dr. John T. Auten of the U. S. Forest Service reports investigation of unburned and undisturbed forest conditions that show soils one inch beneath the duff or organic matter deposited on the floor of the forest, absorbs water nearly fifty time as rapidly as agricultural soils in open fields; at three inches, seventeen times faster; and at eight inches, two and a half times more rapidly. This, of course, explains in part why forests have less surface run-off of water and less erosion.

In 1928, Texas imported from other states 723,643,000 board feet of lumber. During this same year the lumber cut from Texas forests amounted to 1,446,686,000 board feet.

Young trees, like young boys and girls, need plenty of food and water for proper growth. Burned over woods are dry and sterile.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

Texas Forest News

Issued Monthly at College Station under auspices of
VOL. XV, No. 3 & 4. TEXAS FOREST SERVICE March-April, 1933

CIVILIAN CONSERVATION CORPS

The law recently enacted by Congress under the provisions of which President Roosevelt is organizing a civilian corps will be of interest to many Texas citizens. It is quoted below:

(Public No. 5 - 73rd. Congress)
(S.508)
AN ACT

For the relief of unemployment through the performance of useful public work, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of relieving the acute condition of widespread distress and unemployment now existing in the United States, and in order to provide for the restoration of the country's depleted natural resources and the advancement of an orderly program of useful public works, the President is authorized, under such rules and regulations as he may prescribe and by utilizing such existing departments or agencies as he may designate, to provide for employing citizens of the United States who are unemployed, in the construction, maintenance and carrying on of works of a public nature in connection with the forestation of lands belonging to the United States or to the several States which are suitable for timber production, the prevention of forest fires, floods and soil erosion, plant pest and disease control, the construction, maintenance or repair of paths, trails and firelanes in the national parks and national forests, and such other work on the public domain, national and State, and Government reservations incidental to or necessary in connection with any projects of the character enumerated, as the President may determine to be desirable: PROVIDED, That the President may in his discretion extend the provisions of

(Continued on page 3, Col. 1)



Area of thinned Shortleaf Pine at State Forest No. 1 in Newton County, 5 miles east of Kirbyville. Oak trees of good quality at proper distance were also retained. Large opening in foreground shows where a large red oak "wolf" tree was removed to aid pine reproduction.

WET YEARS AHEAD

Not long ago an old East Texas woodsman stated that according to all indications, 1932 was the last of the dry years and that more moisture and better growing conditions could be expected for some years to come. This observation is closely checked by the observations of Dr. Bruckner, an Austrian professor, whose ideas are briefly discussed in the "Report on the Protection of the Forests in the Province of Quebec During the Year 1932". After investigating the meterological statistics of Europe for the 19th. century, Bruckner concluded that the period of sunspots coincides with that of meteorological phenomena, and he made the following statement:

"For the past thousand years the climate of Central Europe has undergone regular variations during an average period of thirty to thirty-five years. Each of these periods naturally falls into two series of fifteen to seventeen years, one of cold, this Act to lands owned by counties and municipalities and lands in pri-

(Continued on page 4, Col. 1)

EAST TEXAS' SECOND GROWTH PINE STANDS

The East Texas timberland owner is working toward a fully stocked or normal forest. Such a stand means the maximum amount of timber the land can reasonably be expected to grow. This amount varies with the species, its age, the climatic and soil conditions. There are few stands of timber in the East Texas commercial timber region that can be classed as fully stocked. Generally they are less than 50 per cent of a normal stand, although many small areas of young old-field pines are overstocked.

In relation to timber growth a forest has various sites, so designated by the height growth, that the average dominant trees make in a 50 year period. This relationship is called the site index. In an exhaustive study made by the office of forest experiment stations and other agencies, of fully stocked or normal stands for southern pines, the average site index for loblolly pine was found to be 91 feet,

damp years, the other of hot, dry years".

(Continued on page 3, Col. 3)

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

RUST AND ROT

Railways Solving Problem of Deterioration of Wood but Corrosion of Iron and Steel Still Baffling.

Although rust is in some situations more destructive of iron and steel than rot is of wood, the popular impression is that iron products are more durable than wood. The casual observer hardly ever notes that it is not at all unusual to see corrugated iron roofs rusted off from staunch wooden frames, or the iron sides of gondola cars turned into a good imitation of brown lacewood by the ravages of rust.

It is interesting, therefore, to note that a recent number of the Railway Age devotes much space to the deleterious results to the railways of the corrosion of iron and steel in their equipment. Among the forms of corrosion noted are those resulting from gases discharged from smokestacks, which are very destructive to the roofs of stations and other nearby buildings, corrosion of freight cars which are being more and more built of steel, and the attacks of corrosion on open top cars employed in the transportation of coal. It is stated that bituminous coal when exposed to rain and snow is particularly destructive to the bottoms and sides of these cars.

Damage Caused by Brine

Another form of corrosion is found in the tracks and metallic decks of bridges. On roads carrying heavy volumes of perishable goods packed in refrigerator cars the dripping brine is very destructive. One railway is now completing a program of bridge repair involving the expenditure of more than a million dollars caused by brine corrosion on a limited portion of its mileage.

The loss to the railways from corrosion is a matter of serious import, not only to them but to the nation at large. The railways take 20 per cent of the output of iron and steel mills in normal years and the cost of those products is more than 500 million dollars.

"These are merely a few of the many ways", comments Railway Age, "in which corrosion is attacking metal wherever it is used. Its attacks are constant and never-ending. The results constitute a drain on railway income that runs into the tens of millions of dollars annually. It has been going on since the railways first began to employ metal. It will continue until science finds the answer."

It is remarked in some quarters that it is a grave question whether the railways are justified in using such large quantities of a material that disintegrates so rapidly, when many of the uses to which it is put could be served as well if not better by wood, which often lasts longer than iron and steel substitutes and has the economic advantage of being derived from perpetually renewable raw material sources—the forests.

Life of Tree is Trebled

Maintenance of way engineers bring out the interesting fact that while the problem of rust is still unsolved, that of rot is far less troublesome than formerly. There are now several hundred plants in the United States which treat wood, especially railway cross-ties and telegraph and telephone poles, for preservation against rot. Cross-ties now last 30 years as against 5 to 8 years in former days, and even then are discarded because of mechanical injury rather than decay. Instances are cropping up all over the country of cross-ties lasting, under favorable conditions, as long as 35 years.

Research into the possibilities of wood and its basic constituents—cellulose and lignin—has scarcely begun, but it is confidently asserted that it will not be long before "rotless" and incombustible wood will be regularly on sale in retail lumber yards. Both are available now and are used in large quantities by contractors and industrial consumers of wood.

MARGINAL LAND

Marginal land is a term that has come to mean land not capable of being profitably used for agriculture. Marginal land may be land once used for agricultural crops but now abandoned and for the present, at least, not needed for producing food. It may also include badly eroded land no longer suited for farm crops; marshes, over-flow land, rocky, steep and inaccessible lands, cut-over areas not reforesting, and range lands of low quality.

SOIL-BINDING PLANTS HELP RECLAIM GULLIES

Planting natural soil binders, such as trees, shrubs, vines or grasses, to check gullies that are destroying or threatening to destroy eroded and and abandoned farm land in the uplands of the South is advised by the Forest Service, U. S. Department of Agriculture.

Recent studies by the Southern Forest Experiment Station at New Orleans show that it is often cheaper to plant than it is to construct dykes and dams, and that many of the trees and other plants not only bind the soil, but, also, add to its fertility. Some of the trees, like black locust and shortleaf pines, yield a crop of posts or poles in ten or twenty years.

To be most successful in erosion control, it is often advisable to use brush dams, and to plant grass to shrubs along with trees. Black locust and Japanese honeysuckle work very effectively together in the South. Other plants like grasses, lespedeza, and rudzu are also being used. Where all the topsoil and subsoil are removed in large washes, and only the clay, sand, or gravel remains, trees are more likely to thrive than grasses or vines. But usually there are patches of soil that will grow the smaller plants and start them spreading. Where there is moisture enough, cuttings of cottonwood or willow may be stuck into the ground to take root and grow.

Reforestation to stop gullies helps to prevent the spread of gully erosion to valuable fields, and to prevent good alluvial land at lower levels from becoming buried under beds of sand or clay. It also in some measure restores to productivity land on which the owner has to pay taxes.

A new process of extracting acetic acid direct from wood promises to overcome the handicap imposed from synthetic productions. From a cord of hardwood the following products are obtained: 120 pounds of acetic acid; 1330 pounds of charcoal; 4.5 gallons oil; 40 pounds of pitch; 9 gallons of methanol.

Plant pines and let the abandoned, eroding fields have a chance to produce something.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

CIVILIAN CONSERVATION CORPS

(Continued from page 1, Col. 1)

vate ownership, but only for the purpose of doing thereon such kinds of cooperative work as are now provided for by Acts of Congress in preventing and controlling forest fires and the attacks of forest tree pests and diseases and such work as is necessary in the public interest to control floods. The President is further authorized, by regulations, to provide for housing the persons so employed and for furnishing them with such subsistence, clothing, medical attendance and hospitalization, and cash allowance, as may be necessary, during the period they are so employed, and, in his discretion, to provide for the transportation of such persons to and from the places of employment. That in employing citizens for the purposes of this Act no discrimination shall be made on account of race, color, or creed; and no person under conviction for crime and serving sentence therefor shall be employed under the provisions of this Act. The president is further authorized to allocate funds available for the purposes of this Act, for forest research, including forest products investigations, by the Forest Products Laboratory.

Sec. 2. For the purpose of carrying out the provisions of this Act the President is authorized to enter into such contracts or agreements with States as may be necessary, including provisions for utilization of existing State administrative agencies, and the President, or the head of any department or agency authorized by him to construct any project or to carry on such public works, shall be authorized to acquire real property by purchase, donation, condemnation, or otherwise, but the provisions of section 355 of the Revised Statutes shall not apply to any property so acquired.

Sec. 3. Insofar as applicable, the benefits of the Act entitled "An Act to provide compensation for employees of the United States suffering injuries while in the performance of their duties, and for other purposes", approved September 7, 1916, as amended, shall extend to persons given employment under the provisions of this Act.

Sec. 4. For the purpose of carrying out the provisions of this Act, there is hereby authorized to be expended, under the direction of the President, out of any unobligated moneys heretofore appropriated for public works (except for projects on which actual construction has been commenced or may be commenced within ninety days, and except maintenance funds for river and harbor improvements already allocated), such sums as may be necessary; and an amount equal to the amount so expended is hereby authorized to be appropriated for the same purposes for which such moneys were originally appropriated.

Sec. 5. That the unexpended and unallotted balance of the sum of $300,000,000 made available under the terms and conditions of the Act approved July 21, 1932, entitled "An Act to relieve destitution", and so forth, may be made available, or any portion thereof, to any State or Territory or States or Territories without regard to the limitation of 15 per centum or other limitations as to per centum.

Sec. 6. The authority of the President under this Act shall continue for the period of two years next after the date of the passage hereof and no longer.

Approved March 31st., 1933.

The plan is to establish well organized camps in the timbered regions of the United States. According to present indications a number of these camps will be located in Texas and will be engaged with forestry work and also with soil erosion and flood control activities. Plans are not yet in definite shape, therefore, the above information is all that is available at this time.

TEXAS IMPORTS LUMBER FROM STATES TO MEET THE DEMAND

In 1928, Texas imported from other states 723,643,000 board feet of lumber.

Total lumber cut from Texas forests from 1904 to the year 1930 inclusive was 43,233,978,000 board feet or an average yearly cut of 1,601,258,000 board feet. The peak year of production was in 1907 with a cut of 2,229,590,000 board feet.

EAST TEXAS' SECOND GROWTH PINE STANDS

(Continued from page 1, Col. 3)

shortleaf pine 70 feet and longleaf pine 71 feet. On such sites an acre of loblolly pine fully stocked at 40 years of age should contain 290 trees over 4 inches in diameter with an average diameter of 10.2 inches for all trees; shortleaf pine at 40 years should contain 545 trees over 4 inches in diameter with an average diameter of all trees of 7.4 inches and longleaf pine at 40 years should contain 450 trees over 4 inches in diameter with an average diameter of all trees of 7.2 inches. On those areas where growth is above the average site index at 40 years, the number of trees will be less and the average diameter of all trees greater.

In East Texas, tree growth studies have been made in connection with timber surveys of tracts totaling over 600,000 acres that are well representative of the three pine types. From these studies the data was recorded in tables where the age and height were based on diameters. Curves were projected. From these curves based on arithmetical averages in inch diameter breast height classes, it was found that Texas grown shortleaf pine in cut-over stands corresponds to the height for average normal stands in the South, but longleaf and loblolly fall below the average. At 50 years shortleaf pine makes a height growth of 70 feet; loblolly pine at 50 years makes a height growth of 80 feet and longleaf pine at 50 years, 65 feet. Since average stands of Texas pine are only approximately 50 per cent of normal, their diameters tend to be greater. Reading from the curves shortleaf at 50 years is 12.2 inches in diameter, loblolly at 44 years is 15 inches and longleaf at 50 years in 11.7 inches.

A German scientist has announced the manufacture of bread out of wood. Under the process, sugar is extracted from wood and dissolved with nitrogen salts made from air as well as phosphoric salts and yeast. After fermentation, the mixture resembles thick paste and is pressed into biscuits and baked.

Copied with permisson from an original at the Texas Forestry Museum, Lufkin, TX www.TheHistoryCenterOnline.com 2020_002

WET YEARS AHEAD

(Continued from page 1, Col. 2)

A year is considered hot, according to the article in the above-mentioned publication, if its average temperature exceeds the general average by at least 10%; cold if it is at least 10% below the normal (general average). Dry and wet years are similarly determined on the basis of normal rainfall.

There can, of course, be years within the cycle that are the exception to the general trend. The celebrated geologist, Albert de Lapparent, after close study of Burckner's law, observed;—that since the law is based on averages it can and should only be applied to averages.

A chart of average weather and temperature based on Bruckner's law accompanies the articles mentioned. It shows that a hot dry period started in 1917. If this period is given a life cycle of 16 years it ended with 1932. Perhaps 1933 will be the final year. In any event it appears that the old woodsman was about correct and some wet weather may be expected for the coming decade, if the future behaves as it has in the past.

STATE FORESTS

Many states are acquiring through gift and purchase lands that are primarily adapted for forest purposes. Pennsylvania increased its forest holdings in 1932 by 63,000 acres which makes the present area of state forests 1,610,296 acres. The total cost of this woodland area to the state is about $4,000,000.00. New Jersey now has a state forest area of 54,143 acres of which 15,777 acres were added in 1932. New York has taken the lead in appropriating $19,000,000.00 to purchase submarginal agricultural lands and turning them into forested areas. It is estimated that out of the 14,000,000 acres of cultivable lands in New York 4,000,000 acres will be turned back to growing timber as a crop.

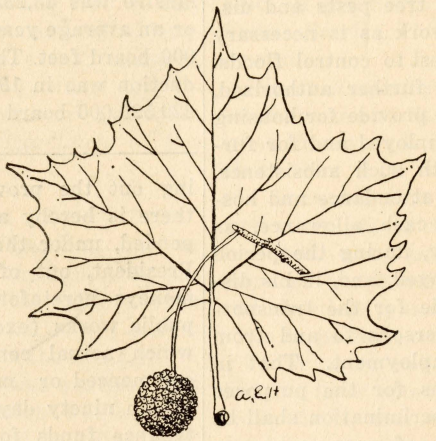
No one is growing trees for profit who allows forest fires to take their annual toll.

Fire breaks hold forest fires in check as dikes hold back the floods.

SYCAMORE

(Platanus occidentalis L.)

The sycamore, also called buttonwood, is considered the largest hardwood tree in North America. It occurs throughout east Texas to Lavalla County. It is most abundant and reaches its largest size along streams and on rich bottomlands. It is one of the most rapid-growing trees. In maturity it occasionally attains a height of 140 to 170 feet and a diameter of 10 to 11 feet.



The bark of the sycamore is a characteristic feature. On the younger trunk and large limbs it is very smooth, greenish gray in color. The outer bark yearly flakes off in large patches and exposes the nearly white younger bark. Near the base of old trees the bark becomes thick, dark brown and divided by deep furrows.

The leaves are simple, alternate, 4 to 7 inches long and about as broad, light green and smooth above, and paler below. The base of the leafstalk is hollow and in falling off exposes the winter bud. The fruit is a ball about 1 inch in diameter, conspicuous throughout the winter as it hangs on its flexible stem, which is 3 to 5 inches long. During early spring the fruit ball breaks up, and the small seeds are widely scattered by the wind.

The wood is hard and moderately strong, but decays rapidly in the ground. It is used for butchers' blocks, tobacco boxes, furniture and interior finish.

As a shade and ornamental tree it is planted in many parts of the state, being one of the most popular trees for dry uplands.

SPANISH MOSS

The Spanish Moss, often called Florida and Long Moss, is one of the characteristic plants of the Southern states. It is not a parasite as many people believe, but a plant depending wholly on the air for its sustenance. The seed are carried by the wind and find lodgement in trees where they germinate and grow into grey hanging masses which often give a wierd aspect to the forests of the Gulf States. In Texas it is quite abundant in the forests bordering the coastal plains region.

Thousands of tons of the moss are gathered and marketed in the South each year, being used chiefly as packing and upholstering material. For

FEDERAL GOVERNMENT PURCHASES LAND FOR FOREST PURPOSES

During the past few years the Federal Government has acquired through reservation, exchange and purchase, 7,231,555 acres of land in the eastern half of the United States for forest purposes. It is estimated that an additional area of 7,539,900 acres will be needed. The area acquired is used to protect watersheds of navigable streams and for stimulating timber production. It is given protection and where there is insufficient tree growth, artificial reforestation by planting is carried on so the forest land will be fully stocked with trees.