

Texas Forest News

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TEXAS FOREST SERVICE

January, 1936

CIVILIAN CONSERVATION CORPS

Since April 1, 1933, the work and status of the Texas Forest Service has been affected in many vital aspects by the Civilian Conservation Corps' activities. A summary of the CCC work should be of interest to all Texas citizens.

Congress, on March 31, 1933, passed the Act authorizing the Emergency Conservation Work. The fundamental objectives of the project are effectively summarized in the President's message to Congress urging the passage of the Bill. The President said:

"I propose to create a Civilian Conservation Corps to be used in simple work, not interfering with normal employment, and confining itself to forestry, the prevention of soil erosion, flood control and similar projects. I call your attention to the fact that this type of work is of definite, practical value, not only through the prevention of great present financial loss, but also as a means of creating future National wealth.

"This enterprise is an established part of our National policy. It will conserve our precious natural resources. It will pay dividends to the present and future generations. It will make improvements in national and State domains, which have been largely forgotten in the past few years of industrial development.

"More important, however, than the material gains will be moral and spiritual value of such work. The overwhelming majority of unemployed Americans, who are now walking the streets and receiving private or public relief, would infinitely prefer to work".

CCC camps in Texas are assigned for work along various lines comprising work on National Forest areas, Soil Erosion, State Parks and State Forestry projects. This summary is confined to the CCC camps,

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Over 2,000 miles of forest roads similar to the above have been constructed in the timbered portion of East Texas by the C.C.C. forestry camps operating under the supervision of the Texas Forest Service.

TEXAS ENCOURAGES FORESTRY PROGRESS

During the two-year period beginning September 1, 1933, Texas provided an increase of 20 percent in the forestry appropriations as compared to the previous biennial period. For the two years beginning September 1, 1935, the Texas Forest Service was granted an increase of 30 percent over the funds made available in 1933. Since 1933 Texas has made available \$60,000 to cooperate directly with the CCC Forestry camps and the work done from these camps.

Due to the interest and efforts of Senator John S. Redditt of Lufkin, an item of \$15,000 is available for the construction of a field headquarters building at Lufkin for the Division of Forest Protection. Adequate office and warehouse facilities will eliminate rentals and add to the efficiency of the work.

The Texas Forest Service has for many years advocated advisable tree planting in West Texas, such as windbreaks, shelterbelt and small groves. Therefore, it is gratifying to report

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ADDITIONAL FORESTRY LEGISLATION

During the Regular Session of the Forty-fourth Legislature two bills were enacted authorizing the State of Texas to more fully cooperate with the Federal Government in the Forestry Conservation program.

House Bill 603 was enacted in accordance with President Roosevelt's request in his letter of January 15, 1933, to Governor Allred. The Bill provides a legal procedure to create State Forests from tax delinquent lands better adapted for the production of timber crops than for other purposes.

House Bill 817 authorizes the Board of Directors of the Agricultural and Mechanical College to acquire State Forests through agreements with the Federal Government and other agencies. President Roosevelt, Secretary Wallace and the U. S. Forest Service desire that the various states obtain as State Forests privately owned cut-over lands which can be more advantageously managed for timber production by public agencies than by

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THE LUMBER CODE

One of the most out-standing experiments coming out of the New Deal was the National Recovery Act. N. R. A., as it was known, has played its role in American History and although it has gone into the discard it has left behind it many valuable lessons which should be remembered in formulating policies of the future.

The Lumber Industry was intensely interested in N. R. A. since it was under this Act that the Lumber Code was drawn. Under codes or written agreements of "cans" and "can'ts" where two or more people are affected there is naturally a division of ideas. The Lumber Code affecting more than 15,000 sawmills was no exception. From the very start there were those who refused to cooperate, those who thought they were being discriminated against and those who still worked under the old "public be damned" policy. Yet it must be said of the Lumber Industry as a whole that they were the first major industry to get their houses in order and settle down to production under the Code. For this feat the industry justly deserves the praise of everyone.

The specific part of the Lumber Code which was of most interest to professional foresters and men in forestry work was the now famous Article X. This Article set forth certain forest conservation measures which were to be practiced by all and were to be enforced along with the other provisions of the Code. Among these conservation measures are to be noted provisions for fire protection, slash or brush disposal and minimum cutting requirements.

The fire protection measure required that each operator, at the earliest possible moment, organize and maintain an adequate system of protection or that he should affiliate himself with a government agency offering protection under the established principles of the Clarke-McNary Law

Slash and brush disposal measures required no disposal other than to remove tops and brush away from the seed trees left in the logging operation. However, it obligated special precautions against fire until the slash ceased to be an added fire hazard.

The minimum cutting requirements were inserted to insure that forest lands be kept reasonably productive to commercially valuable species of trees. It specified that certain numbers of suitable trees should be left and be kept free from dangerous accumulations of logging debris. Cuttings for any purpose in any stand of pine timber were permitted so long as the specified number of pine trees of the specified sizes were left in good condition. Thus, any number of trees of any size could be cut if 100 or more 4 to 7 inch pine trees; or 10 or more 8 to 11 inch trees; or two 12 inch or larger trees were left. Also any combination of size classes may be left, provided that the total is 100 percent of the specifications. That is to say, 50 percent of the number required in the 4 to 7 inch class and 50 percent of the number in the 8 to 11 inch class may be left or another combination would be 50 percent of the 4 to 7 inch class, 25 percent of the 8 to 11 inch class and 25 percent of the 12 inch and larger class. Similar requirements were also specified for hardwood forests. All trees left under these requirements were to be thrifty and of good form, capable of developing normally to commercial size and quality. It was not expected that the number of trees specified could be left on every acre, but the average for any given 10 acre tract had to meet the requirements.

Professional foresters, familiar with woods operations, knew of course that these requirements as set forth in the Lumber Code would not lead directly to a sustained yield operation, but here was some conservation that was conservation and not merely conversation. The hope on the part of the timberland owners and foresters was that Article X would speed up the establishment of sustained yield operations.

It is impossible, of course, to do more than guess at the final outcome of the effect that such a code would have had on the industry. Article X was accepted with less protest by each lumberman than any other Article in the entire Lumber Code. As a matter of fact the opinion of many forest owners and operators of the Industry was that such an article should have been adopted twenty-five years ago.

TERMITES

"What, Where, When and Why are Termites?" That question serves as title to a paper written by Dr. Thos. E. Snyder, Senior Entomologist at the Southern Forest Experiment Station in New Orleans, La., and published as the Station's "Occasional Paper No. 52."

The author answers the What, Where, When and Why and then proceeds with a discussion of castes, flight, defense, organs, nests, food, tropisms, damage and control. The paper is illustrated with two pictures showing how and where to cope with termites in house construction.

Dr. Snyder, under the caption, "Caution Against Exaggerated Fears," says in part— "Without desire to minimize the damage that may be occasioned to buildings and their contents by termite attack, especially if long continued, it should nevertheless be pointed out that serious termite injury to buildings, particularly in the more northern parts of the Temperate Zones, is relatively infrequent; and that termite work may go on for years without involving the necessity for extensive repairs or reconstruction of foundation timbers and flooring. . . . The risk of sudden collapse of any fairly well-constructed building, solely from termite injury, can be dismissed as very rare in the United States."

The Texas Forest Service has only a limited supply of Dr. Snyder's paper but will attempt to obtain a copy for anyone making the request.

The State of Washington recently authorized its State Forest Board to issue utility bonds up to \$300,000 for purchasing private lands suitable for growing timber.

Article X did however, live long enough to create among the Industry a conservation consciousness, which reached operators who never before had given the subject any serious thought. It made the public conscious of the many difficult problems which the lumberman, who practices approved forestry, must face and master. Furthermore, it did a great deal toward awakening the public as well as the industry to the role which each must play to make forest conservation a national and regional success.

TEXAS AUTHORIZES PURCHASE OF NATIONAL FORESTS

The last regular legislative session by joint resolution authorized the Federal Government to acquire, by purchase or otherwise, lands to be administered as National Forests by the U. S. Forest Service. To date approximately one half million acres have been purchased or optioned. The Federal areas are located in Montgomery, Walker, Houston, Trinity, Angelina, Nacogdoches, San Augustine, Sabine, Shelby and Jasper Counties. The U. S. Forest Service has established a Forest Supervisor's office at Houston and a field staff office at Lufkin.

MASSACHUSETTS PROPOSES NEW STATE FORESTS

An "Initiative Petition" signed by 23,207 registered voters in Massachusetts, requests authorization for the Commissioner of Conservation to purchase and hold 500,000 acres of forest land suitable for state forests. This proposal will be presented to the voters at the next regular election.

In a statement supporting this proposed program, Harris A. Reynolds, Secretary of the Massachusetts Forest and Park Association, declared that: "more than 1,000,000 acres in Massachusetts have been stripped of successive crops of timber or burned over so that they are classified as wild or waste land. More of it is assessed at \$10 or less an acre and thousands of acres are escaping taxation. Placed under forest management, these areas would produce more valuable timber annually than the present value of the land, provide permanent employment for 20,000 men, add new areas of beauty for public recreation, provide new opportunities for the restoration of wildlife, make available natural reservoirs for the conservation of water, and extend more opportunity for profitable work by the CCC".

The Florida Legislature recently appropriated \$7,500 a year for the next two years to establish a department of forestry at the University of Florida.

Sweden calls her forests "green gold".

PUBLICATION TEXAS FOREST NEWS RESUMED

This is the first issue of the "News" since April, 1933. At that time, the Texas Forest Service, with a very small year-long personnel, was faced with the responsibility of establishing CCC camps, selecting the supervisory personnel and planning and directing the field work. For months every employee in the organization cheerfully worked long hours to redeem our responsibilities. Due to the reduction in the number of C. C. C. camps it again becomes possible to distribute our little publication.

TEXAS ENCOURAGES FORESTRY PROGRESS

(Continued from page 1, Col. 2) that the last legislature, through the interest of West Texas Senators and Representatives, provided funds for the production of forest seedlings to be used in cooperating with the farmers of West Texas in windbreak, shelterbelt and grove planting. The State item is being supplemented with Federal funds under the provisions of the Federal Clarke-McNary Act. The forest seedlings will be grown at the Experiment Sub-Stations at Lubbock and Chillicothe, in cooperation with the Texas Agricultural Experiment Station.

Increased support for the Forestry work during this depression period is extremely encouraging and indicates the growing importance of Forestry when considered in connection with proper land utilization and the maintaining of a permanent industry of magnitude.

ADDITIONAL FORESTRY LEGISLATION

(Continued from page 1, Col. 3) private individuals. Although, during the past two years the Federal government has acquired extensive additional National Forest areas it is considered extremely desirable to have the various states also acquire State Forest areas. House Bill 817 makes it possible for the State to accept areas for State Forest purposes on a self-liquidating basis. The passage of this Bill and its approval by the Governor permits the State to accept lands under the provisions of the Federal Fulmer Bill, described in the adjoining column on this page.

THE FULMER BILL

The Fulmer Bill, enacted during the last session of Congress, largely as the result of two years work on the part of the Association of State Foresters, will be an important factor in stabilizing state forestry departments. The main objective of the Bill is to stimulate the acquisition, development, proper administration and management of State Forests. It authorizes the appropriation of \$5,000,000 of Federal funds to initiate the program.

Under its provisions Federal funds may be used to buy State Forest areas, such areas to be turned over to the State Forestry agencies for administration. The purchase price is to be repaid to the Federal Government through the proceeds of timber crops. Upon payment of the full purchase price title to such areas shall be transferred by the Federal Government to the State.

It is hoped that Federal funds will be allotted within a reasonable period for purchase of State Forest areas in Texas so that CCC camps and other Federal unemployment relief funds can be used to rehabilitate such areas and place them upon a high producing plane as regards timber crops.

The new act is in keeping with the thought expressed by the President in a letter addressed to all governors, that "maintenance of our forests and the industries depending upon them, which at normal times afford employment to large numbers of our people, is very vital to the welfare of every State". Under the provisions of the new Bill, the States are now in a position to coordinate their efforts with Federal agencies in developing a nationwide program of forest land protection and management.

The bill is ranked with the five most important acts in American forest legislation, which date back to the first bill in 1891 authorizing the establishment of National Forests from the Public Domain.

It takes 25,000 acres of timber annually to supply the Ford Motor Company with wood for crating and wood paper for packing its automobiles. The production of 16,000 acres of tung oil trees goes into lacquers and enamels used on these cars.

CIVILIAN CONSERVATION CORPS

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the work from which is administered by the Texas Forest Service. Such camps are located in the commercial timber belt of East Texas where the Federal government and the Texas Forest Service have conducted a co-operative forest fire protection project for many years. The first four camps were established on May 27 and 28, 1933, at Lufkin, Trinity, Livingston and on the State Forest near Kirbyville. By June 19, eight additional camps had been established at the following locations: Center, Pine-land, Maydelle, Honey Island, Woodville, Weches, Oakhurst and Conroe. During October and November, 1933, additional camps were established at Woden, Groveton, Jasper, Cleveland and Huntsville. From that time to October, 1935, the number of camps assigned to the Texas Forest Service varied from 13 to 17 with an enrollment of from 2,400 to 4,000 Junior enrollees and local experienced men.

A CCC Staff Office was established at Lufkin by the Texas Forest Service. The actual work from each camp was conducted under the supervision of one camp superintendent and from 5 to 7 foremen and one mechanic. Each camp was equipped with the necessary number of trucks to transport the enrollees to and from work and also with needed hand tools and tractors and graders. The War Department assumed responsibility for housing and feeding the enrollees, health of the enrollees and discipline while in camp.

Work performed from the CCC camps falls into two classifications. The four camps located on or adjacent to the four State Forests conducted stand improvement work consisting of thinning, removal of worthless and weed trees, construction of 60 miles of first-class graded roads with gravel top on 20 miles, construction of necessary culverts, bridges and wing ditches, forest nursery work and planting of forest trees where needed on State land. Cottages and other improvements were also constructed on three of the State Forests. Due to the CCC the State Forest areas have been placed in excellent condition to serve as research and demonstration areas.

AMERICAN ELM (White Elm) (*Ulmus americana* L.)

The range of this famous American shade tree extends west to the Dakotas and southward to Coke county, Texas. Within this vast area, it is generally common except in the high mountains and wet bottom lands.



AMERICAN ELM

It reaches an average height of 60 feet and a diameter of 3 feet. The bark is dark gray, divided into irregular flat-topped, thick ridges, and is generally firm, though on old trees it tends to come off in flakes. An incision into the inner bark will show alternate layers of brown and white.

The leaves are alternate, simple, 4 to 6 inches long, rather thick, somewhat one-sided, doubly toothed on the margin, and generally smooth above and downy below. The leaf veins are very pronounced and run in parallel lines from the mid-rib to leaf-edge.

The flowers are small, perfect, greenish, on slender stalks, some-

times an inch long, appearing before the leaves in very early spring. The fruit, ripening in the spring, is a light green, oval shaped samara (winged fruit) with the seed portion in the center and surrounded entirely by a wing. A deep notch in the end of the wing is distinctive of the species.

The wood is heavy, hard, strong, tough, and difficult to split. It is used for hubs of wheels, saddle trees, veneer for baskets and crates, etc.

On privately-owned land CCC activities were restricted to the work authorized under the cooperative fire protection agreement. In other words, only work having direct bearing upon fire protection activities was authorized. A total of forty-four 100-foot steel lookout towers were erected and 1018 miles of telephone line constructed, using 18-foot creosoted poles. The towers and telephone lines now afford the Texas Forest Service first class equipment for promptly detecting and locating forest fires and reporting same to the fire suppression personnel. Nineteen additional towers for use in the newly created fire protection districts in northeast Texas have recently been purchased with CCC funds and will be erected with CCC labor. Forest roads, together with the necessary bridges and culverts, serving as firebreaks and also opening inaccessible locations and comprising 2030.3 miles have been constructed. These roads are of great practical benefit to the East Texas counties since many of them are being used by citizens living in remote rural settlements.

The enrollees have been of great assistance in controlling and suppress-

ing forest fires. During periods of high fire hazard motor transportation and a sufficient number of enrollees were retained in each camp to answer emergency fire calls. Due to this assistance the acreage burned over during the past two years has been reduced to a minimum. Furthermore, the citizens have manifested increased cooperation not only in assistance in the fire control work but in taking extra precautions to prevent unnecessary fires.

Of all forms of direct or indirect relief it is the judgment of many impartial observers that the CCC project has given millions of our youth opportunity to engage in constructive labor and at the same time the privilege of contributing \$25 per month to needy dependents. The camp discipline and educational work has also been of lasting value to the young enrollees.

A stump of a giant cypress tree grown during the glacial area was uncovered by subway workmen on August 6, 1931, in Philadelphia. It was found 38 feet below the surface of the street and 10 feet below sea level. The stump measured 17 feet in circumference.

Texas Forest News

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TEXAS FOREST SERVICE

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BEAUMONT CHAMBER OF COMMERCE SPONSORS FORESTRY CONFERENCE

The Beaumont Chamber of Commerce is calling a Forestry Conference on March 6 and 7 to consider the forestry situation in East Texas, with special reference to forest products and wood uses. The sessions on March 6 will be held at the Hotel Beaumont. The Program for that day will be as follows:

FORENOON SESSION

"Welcome to Beaumont"—

Ben S. Woodhead, Pres.,
Beaumont Lumber Co.

"An East Texas Welcome"—

Hon. John S. Redditt, State
Senator, Lufkin, Texas.

"Southern Forest Surveys"—

Capt. I. F. Eldredge, United
States Forest Service.

"Forest Conservation"—

E. O. Siecke, Director,
Texas Forest Service.

AFTERNOON SESSION

"The Farm Chemurgic Idea"—

Dr. Charles H. Herty, Director,
Pulp & Paper Laboratory,
Savannah, Georgia.

"America's Paper & Pulp Industry"—

Charles W. Boyce, Executive
Secretary, American Paper &
Pulp Association, New York.

"Modern Forestry Practices"—

E. L. Kurth, President,
Southern Pine Association.

On the second day the meeting will convene at State Forest No. 1, five miles southeast of Kirbyville. The group will leave Beaumont at 9:00 A. M., arriving at the State Forest at 10:30 A. M. The remainder of the forenoon will be devoted to visiting key points on the State Forest, under the direction of Regional Forester Balthis, who is in charge of the research and demonstration work on the

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The Mission of San Francisco de los Tejas was destroyed in 1693. As near as could be ascertained from records, the above mission, built by the Texas Forest Service on the Mission State Forest, is a replica of the old building.

SAN FRANCISCO MISSION STATE FOREST

Through the efforts of citizens of Houston County and outside assistance the Texas Forest Service has recently added to its system of State Forests, the San Francisco Mission State Forest, an area of 117 acres lying 20 miles northeast of Crockett in Houston County.

The Forest embraces the location of the old Mission San Francisco de los Tejas which was founded in 1690 and which many historians claim to have been the first mission established in Texas. This mission was built among the Nadbedache Indians, members of the Tejas federation of Indian tribes, who were camped near San Pedro Creek. Tradition has it that the Indians, besieged with an epidemic and shortage of food, arose against the Spaniards and caused them to flee on

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POSSIBILITIES OF PULP & PAPER PRODUCTION IN TEXAS

That the South is rapidly gaining a place in the pulp and paper industry of this country cannot be denied. A glance at the list of raw materials needed in the manufacture of pulp and paper finds Texas well situated to furnish these materials. The following report is the first of a series of three articles prepared by the Texas Forest Service on this subject.

In locating a new industry there are two essential points to be considered; first, sources of raw materials and second, transportation facilities for getting the product to the market. In these two points Texas excels in its possibilities as a pulp and paper producing center.

The pine belt of Texas, popularly called the East Texas timber belt, has an area of 12,624,000 acres of which 10,615,000 acres are of the pine type. The following table gives

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PULP AND PAPER—

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some idea as to the condition of these areas.

Pine	Acres
Virgin Timber	80,000
Second growth (8" diameter & up)	2,260,000
Second growth (Below 8" diameter)	3,620,000
Fair to good young reproduction	3,605,000
Cut-over, not restocking	1,050,000
Total pine	10,615,000
Hardwoods	
Virgin Timber	150,000
Second growth (8" diameter and up)	360,000
Second growth (Below 8" diameter)	530,000
Fair to good young reproduction	605,000
Cut-over not restocking	364,000
Total hardwood	2,009,000
TOTAL FOR ALL SPECIES	12,624,000

The 1,414,000 acres, both pine and hardwood shown as "cut-over, not restocking" are due to having been improperly logged in addition to having had repeated fires rage over them at frequent intervals. With more intensive fire protection and some artificial regeneration (planting), in some instances, the greater part of this area could be made to produce its share by the next timber generation.

A recent (Aug. 1935) survey, by the United States Forest Service of seventeen southeastern counties in Texas, covering about ten million acres, in gross area, shows the average acre would yield 6.89 cords of pine and 2.02 cords of hardwood suitable for making pulp.

By taking these figures as representative of East Texas and applying them to our producing area, leaving out the area considered as "cut-over, not restocking", we find the East Texas timber belt capable of yielding, today, 100,000,000 cords of wood suitable for pulp manufacture. This figure, of course, means little to the average person but when we stop to consider that the total pulpwood requirements for the entire United States for 1930 were only 13,404,000 cords, we begin to get some picture of the immense supplies available in

Texas. It is true that the total 100 million cords may not be available for pulp production since part of this must be allocated to other wood using industries. However, a closer study of the table showing our forest conditions reveals that a great majority of our forest area is not yet of a size to be of interest to a sawmill. It is estimated that of this 100 million cords, approximately 30 million cords range from 6 inches to 10 inches in diameter at breast height.

At the present time there still remains in East Texas large areas, which could be well blocked at reasonable costs, suitable for pulpwood production.

The pine species, native to East Texas, are Shortleaf (*P. echinata*), Loblolly (*P. taeda*) and Longleaf (*P. palustris*), all of which are suitable for pulp manufacture. The following facts are taken from U.S.D.A. Bulletin 1485—"Suitability of American Woods for Paper Pulp".

SHORTLEAF PINE (*pinus echinata*)

Oven-dry weight per cubic foot, green volume—31 pounds.

Fiber length—3.7 mm.

By Sulphate Process

Reduces readily.

Unbleached pulp: Fairly strong; fibers longer and coarser than those of spruce.

Uses to which pulp is suited: High grade kraft wrapping papers, fiber board and book stock.

From 1 to 10 gallons (in the case of selected materials) of turpentine per cord of wood may be recovered from the digester relief.

Yields: 45 to 50 per cent of strong pulp.

LOBLOLLY PINE (*pinus taeda*)

Oven dry weight per cubic foot, green volume—30 pounds.

Fiber length—3.0 mm.

Reduces readily by sulphate process.

Unbleached pulp: Of good strength. Fibers long and rather coarse.

Uses to which pulp is suited: High grade wrapping papers, fiber board and book stock.

From 1 to 10 gallons (in case of selected materials) of turpentine per cord of wood cooked may be recovered from the digester relief.

Yields: 45 to 50 percent of strong pulp.

LONGLEAF PINE (*Pinus palustris*)

Oven dry weight per cubic foot,

FIREPROOF WOOD

With a \$245,000,000 fire loss for the Nation in 1935, costing in addition some 10,000 lives, it is of interest to note that a recent report by the National Board of Fire Underwriters contains soundly based information that a fire-proof wood has been developed.

This wood, produced by a New Jersey manufacturer, is treated under pressure with ammonium salts, which when subjected to heat, releases combustion-smothering gases. The fire-proofed treatment does not affect the wood as to its appearance or its tooling abilities but makes it a little heavier because of the salt content.

In a test which caused non-treated material to burst into flames, the treated wood, on the other hand, did not burn at all, and though charring deeply did not produce appreciable flame or aid the spread of the fire. The Board's final verdict proclaimed the processed wood "practically non-combustible and non-flammable."

green volume—34 pounds.

Fiber length—3.7 mm.

Reduces readily by sulphate process.

Unbleached pulp: Strong, rather coarse, and very long fibered; requires special beater treatment to develop minimum strength. Strength is usually sacrificed to secure standard formation of sheet.

Yields 45 to 50 percent of strong pulp.

Uses to which pulp is suited: High-grade kraft wrapping papers and fiber board.

From 2 to 36 gallons (in the case of selected materials) of turpentine and pine oil per cord of wood may be recovered from the digester relief.

The pulping hardwoods found in East Texas are gum, basswood, bay, magnolia, maple and willow, and all are considered suitable for pulp.

According to the Forest Service, the best crop of seed borne by southern pines in the last 15 years matured this past fall. The assurance of this abundant seed crop should be an incentive to foresters, lumbermen and farmers desiring to reproduce valuable pine forests without resort to planting, to protect these areas from fire.

**FORESTRY CONFERENCE AT
BEAUMONT—**

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State Forest area. At noon a barbecue luncheon will be tendered the delegates in the mess hall of the CCC Camp. The program for the afternoon follows:

"Benefits to Texas Forest Service Resulting from CCC Work"—

W. E. White, Texas
Forest Service.

"Newsprint from Southern Pine"—

Dr. Charles H. Herty.

"-----"

Victor Schoffelmayer,
Agricultural Editor,
The Dallas News.

"The Southern Publishers View"—

Cranston Williams,
Sec.-Mgr., Southern Newspaper
Publishers Association.

**"Forest Conservation Through Wood
Preservation"—**

R. S. Manley, President,
American Wood Preservers
Association, Orange, Texas.

One of the feature speakers will be Dr. Charles H. Herty, Director, Pulp & Paper Laboratory, Savannah, Georgia. Dr. Herty will pay particular attention to the adaptability and use of our Southern pines for the production of paper pulp. During the past six years he has accomplished excellent progress in his research work and is considered one of the leading authorities on this subject.

Mr. I. F. Eldridge of the U. S. Forest Service will have some interesting facts to tell the group as to the forest resources of East Texas. Several years ago the Federal government, in cooperation with the States, secured funds for making a survey of the forest resources of the United States. Mr. Eldridge, representing the Federal government, is serving as Director for this survey in the Southern States. Much field work has been done and Mr. Eldridge is now in a position to release pertinent information relative to the amount of pulp wood and saw wood material in Texas.

**TEXAS FOREST SERVICE ON AIR
OVER WTAW**

Every Wednesday from five to ten minutes of the Texas Farm and Home Hour program, broadcast from Station WTAW at College Station over the Texas Quality Network (TQN) hook-up, are devoted to a discussion of forestry subjects by some member of the Texas Forest Service.

The Farm and Home Hour program goes on the air at 11:20 A. M. every Wednesday and people interested in hearing these programs are urged to tune in on their local station at this time.

The forestry subjects broadcasted this year over Station WTAW have included a paper on the CCC, two papers on the pulp and paper possibilities in Texas, a paper each on Arbor Day, tree planting in Texas, the forest regions of Texas, and experimental plantations of slash pine in Texas.

**NEW PAPER PULP MILL IN
HOUSTON**

Announcement recently appeared reporting that the Champion Fiber Company, one of the largest paper companies in the United States, is to erect a three to four million dollar paper pulp mill in Houston in the near future.

This pulp mill, which will employ between 400 and 500 persons, is expected to be one of the largest of its kind in this country. Raw materials native to Texas and necessary in the production of pulp will be used as much as possible. These materials include timber, which it is reported the company has acquired by optioning hundreds of acres of East Texas timberland, power, salt, water, gas and shell.

The Beaumont Chamber of Commerce deserves great credit for sponsoring a meeting of this character. However, this organization has for many years been actively interested in forestry. It was the first Chamber of Commerce to have a Forestry Committee and once each year many of the members participate in the Beaumont Chamber of Commerce Field Day on the State Forest near Kirbyville.

**WOOD CONSTRUCTION
WITHSTANDS EARTHQUAKE**

People who have been through earthquakes are often heard to remark, "Never again will I live in anything but a frame house." The reason for this remark, which may be traced to previous California tremors, was again clearly illustrated in the earthquake which recently shook Helena, Montana.

The city of Helena shows a very striking comparison of frame construction with all other types of building. No structural damage to any frame house can be seen. The damage to frame houses was limited to the loss of chimneys and minor roof injuries due to impact of the falling, unreinforced brick flues. Other types of building clearly show the effect of the quake, some of which are now nothing but a huge pile of broken masonry, others with one or two walls in heaps on the ground and still others with large gaping cracks which will have to be rebuilt from the ground up.

The following note quoted from the "Timberman" of November, 1935 explains why frame construction so effectively resists earthquake forces.

"An earthquake causes an oscillating or an undulating wave of motion to flow through the ground. These waves or a combination of them have the effect of shaking structures sideways with the tendency to distort a square-angled section into a diamond shape. Resistance to these forces depends upon the lateral stiffness and strength of the structure as related to mass. The mass of a frame building is relatively small and its lateral strength great because of the very nature of its design. Reduced to its simplest terms, a wood house is not unlike a wood box with all of its inherent strength and stiffness."

Tests conducted by the Forest Products Laboratory at Madison, Wisconsin, to determine the odor and flavor imparted to butter by southern hardwoods used in butter crate construction, indicate that ash impairs butter the least, with soft maple, hackberry, sycamore, beech, yellow poplar, elm, black gum, basswood, cottonwood, red gum, and magnolia following in order of preference.

MISSION STATE FOREST—

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the 25th day of October, 1693. The following day the Indians burned the mission to the ground.

Through the efforts of Dr. Albert Wildert of Taylor, Miss Adina De Zavala of San Antonio, and Mr. J. M. Lovell of Augusta, the approximate site of this mission was located in the northeast corner of the Forest and a replica of the old mission has been erected at this spot.

The Forest is conceded by many to be one of Texas' most beautiful areas. An observation tower has been constructed on the highest point of the Forest from which one can see from ten to twenty miles over the San Pedro Valley into three counties,—(Houston, Anderson and Cherokee).

The Texas Forest Service plans to preserve the natural beauty of the area to the fullest possible extent. A small attractive lake has been created through the construction of a dam and spillway by the CCC Camp at Weches. Native pines as well as slash pine and flowering forest trees, such as dogwood, are being planted to enhance the natural beauty of the area. Out-door fireplaces, barbecue pits, benches and tables have been constructed at various points on the area where visitors to the State Forest may eat lunches or prepare a meal if they so desire.

WISCONSIN WOODLOTS EXEMPT FROM TAXES

Under a new law enacted recently in Wisconsin, farmers are granted complete tax exemption of both land and timber values on farm woodlands protected from grazing, or on open farm land having over a 30 percent slope which the owner will reasonably attempt to protect from erosion by reforestation. The law further provides that up to 20 percent of the operating farm area may be so set aside and that before the land is finally exempt from taxation it must be examined by the township assessor, which examination is subject to a \$2.00 fee, payable by the owner. Such a law, it is hoped, will help farmers to rebuild their woodlots.

BLACK CHERRY*(Prunus serotina Ehr)*

A medium sized tree, up to about 70 feet high and 1 to 3 feet in diameter, black cherry is found in eastern Texas and in the mountains of west Texas. The forest-grown trees have long, clear trunks with little taper. Open-grown trees have short trunks with many branches and irregular spreading crowns. The bark on branches and young trunks is smooth and bright reddish brown, marked by conspicuous, narrow, white, horizontal lines, and has a bitter almond taste. On the older trunks the bark becomes rough and broken in thick, irregular plates.

**BLACK CHERRY**

Leaf and Fruit, one-third natural size. Twig, two-thirds natural size.

The leaves are alternate, simple, oval to lance-like in shape, with edges broken by many fine incurved teeth, thick and shiny above, and paler beneath.

The fruit is dull purplish black, about as large as a pea, and is borne in long hanging clusters.

It ripens in late summer, and is edible, although it has a slightly bitter taste.

The wood is reddish brown with yellowish sapwood, moderately heavy, hard, strong, fine-grained, and does not warp or split in seasoning. With the exception of black walnut, cherry lumber has a greater unit value than any other hardwood of the eastern United States.

The southwestern black cherry (*Prunus virens* Shreve.) is found in the Guadalupe Mountains of West Texas.

WOOD, AN IMPORTANT SOURCE OF FIBER FOR PAPER

At present the most important fibrous raw material used in paper making is wood. It constitutes about 85% of all the raw fibers used. The remaining 15% is made up of rags, straw, bagasse, esparto and other such fibers.

Research work is constantly being conducted to learn the possibilities of using various field plants and plant wastes, such as cornstalk, hemp, flax, reeds and grasses. Practically all such fibers have properties which limit their use to special papers.

None, so far, are able to compete with wood for production of large-tonnage paper grades. Wood is an extremely compact form of cellulose fiber which is convenient to handle, in that it presents fewer storage problems and is cheaper than practically any other pulp raw material.

Although the chemical analysis of wood shows it to be only about 55% cellulose, it is capable of producing annually about four times more cellu-

TEXAS EBONY FOUND SUITABLE FOR PISTOL STOCKS

To the Texas Planning Board must go the credit for uncovering a new use for Texas Ebony. From an inquiry by a firm manufacturing fire arms in Springfield, Mass., it is found possible to substitute Texas Ebony for Circassian walnut in the manufacture of pistol stocks.

Texas Ebony or *Pithecolobium flexicaule*, which is its botanical name, has been used for some time in making buttons and ornaments for ladies apparel and to some extent in cabinet work. When used as fence posts it has been considered as almost indestructible. The wood is described as very heavy, hard, close-grained, dark, red-brown tinged with purple. The tree is considered the most valuable native species in the lower Rio Grande Valley. The seed are often used by Mexicans as a substitute for coffee.

lose per acre than cotton, which is about 98% pure cellulose. Wood seems destined to be the principal source of paper for a long time to come.

Texas Forest News

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TEXAS FOREST SERVICE

April, 1936

ORGANIZED FIRE PROTECTION COMES TO NORTHEAST TEXAS

The Texas Forest Service has extended fire protection into Northeast Texas. The need for fire protection in this area has long been apparent to the Texas Forest Service, but just recently have funds been available to carry on the work.

The new territory, embracing approximately 3,500,000 acres of land, includes, wholly or partially, Red River, Bowie, Morris, Titus, Camp, Upshur, Cass, Marion, Harrison, Gregg, Rusk and Panola counties. It is estimated that 90 percent of the area is owned by farmers, and the balance by lumbermen. The predominating forest type is shortleaf and loblolly pine. Hardwoods occur in the creek bottoms, occasionally mixed with pine. The region as a whole constitutes a fine timber growing belt; one that, if fire is kept out, will produce a valuable crop of timber. The soils are well adapted to timber growing, and climatic conditions are favorable. The addition of the new area to the area originally protected further south brings the area under organized fire protection in East Texas up to 10,444,550 acres.

Locations have been made for 16, 100-foot steel lookout towers. These towers will be connected by a system of telephone lines and will be so placed that the view commanded from them over the surrounding territory, will aid in the quick and accurate location of forest fires. Construction work has already started and is progressing as rapidly as possible.

The system of fire protection will be by "Blanket Patrol." This means that one patrolman and his emergency man will take care of approximately 200,000 acres, using a tower as central headquarters. The protection organization has been completed, and is active on fire protection work. The Division Patrolman in charge of the

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GULF COAST SLASH PINE PLANTATION



Mr. W. Goodrich Jones, Waco, Texas, viewing slash pine plantation planted by his sister near Dickinson, Texas. Mr. Jones organized the Texas Forestry Association in 1914; was mainly responsible for the passage of the first Texas Forestry laws in 1915; served as President of the Texas Forestry Association until 1922 and since then as President Emeritus.

Gulf Coast landowners should be interested in the results of the slash pine plantation, pictured above, located near Dickinson in Galveston County.

These pines were set out by Miss Henrietta Jones in December, 1931. At that time the trees were one year

(Continued on Page 4, Col. 1)

CONVICTION SECURED IN NACOGDOCHES COUNTY

Will Kirk, living near Fitze, Nacogdoches County, on February 25 set fire to woodland not owned by him. He was caught in the act by Patrolman Melvin D. Blanton and indicted on a misdemeanor charge. On March 28 he plead guilty before Justice Jack Sullivan's Court and was assessed a fine and court costs in the amount of \$26.00. Other cases of similar nature are pending in various East Texas counties and if prosecutions result in securing convictions, the number of incendiary fires should be greatly reduced.

The people of East Texas are rapidly realizing that timber is one of their most important crops. However, the greatest drawback to the production of timber as a crop is the comparatively large number of fires started either willfully or through carelessness. The time has come for county officials, chambers of commerce and service clubs to back up the efforts to apprehend and punish the relatively few people who still insist in willfully destroying the property of others.

During the past year the regular work at some of the State Forestry CCC camps has been seriously interfered with because of the amount of time the enrollees have had to spend in fighting fires started either through carelessness or with malicious intent to destroy the property of others. C. C. C. camps will, very likely, not be retained in localities where the number of such fires seriously interferes with the main work of the camps. Concerted action on the part of the key citizens and organizations in each county is needed to improve this situation.

Of the 496,000,000 acres of forest land in the United States, about 63% now receives some form of fire protection.

POSSIBILITIES OF PULP & PAPER PRODUCTION IN TEXAS

The following report is the last of a series of three articles prepared by the Texas Forest Service on this subject.

To economically produce pulp and paper not only requires an abundant supply of timber but also demands cheap and adequate sources of other materials which are essential to the production. Among the more important of these other materials are the following:

Water

Many large lakes have been formed in Texas during recent years by the construction of dams across streams at advantageous points. Rivers in East Texas which offer possibilities for available water are the Sabine, Neches and the Trinity. The structure of the Coastal Plain gives ideal conditions for the development of artesian waters. Five great artesian systems are known within the timber belt. Perhaps the two most important of these systems are known as the lower Eocene and the Coast Prairie. The lower Eocene reservoir is from 1300 to 1500 feet in vertical thickness and consists largely of sand and sandstones. The water is suitable for domestic and industrial use and is already being used in boilers, for irrigation and for the manufacture of ice. The Coast Prairie offers in the Lissie gravel one of the most important water bearing formations. Depths not exceeding 700 or 800 feet in the Lissie gravel yield satisfactory water. Other water bearing strata are the Yegua, Catahoula and the Dewitt, all of which yield water suitable for domestic and industrial purposes.

The commercial and industrial supremacy of Houston is largely attributed to its adequate supply of water adapted to manufacturing. Throughout the timbered area the chief water consumers are sawmills, most of which get their supply from artesian wells, many depending on this source to supply their log ponds.

Abundant supplies of suitable water in East Texas should be a relatively simple problem.

Sulphur

About 85% of the world's production of sulphur comes from Texas. The major part of this production comes from three counties, Matagor-

da, Brazoria and Wharton, which are within 150 miles of the center of the East Texas pine belt. The average production of sulphur in Texas over the five year period from 1929 to 1933 was 1,888,775 tons per year. In recent years 99% of the total United States sulphur production has come from Texas.

Salt

Salt is considered here because of its relationship to the manufacture of salt cake, soda ash and chlorine.

Rock salt is mined in Texas in Harris and Van Zandt Counties and is produced from salt brine in Anderson County. All of these counties are considered as being in East Texas. Salt production in Texas in 1933 amounted to 165,603 tons. There is at present in Texas a chemical plant making soda ash, caustic soda and various other chemicals with a sodium base. Besides all of this production of common salt there are, in the Llano Estacado and Pecos Valley region, large deposits of sodium sulphate, commonly called Glauber salt and known commercially at salt cake. At present sodium sulphate is being exploited in Ward County but deposits are known in at least three other counties.

Rosin

Since rosin is a Southern product, obtained from Southern pines, its availability should offer no problem. In 1930 the production in Texas amounted to 11,000 barrels where only long-leaf pine was tapped.

The Texas Forest Service has conducted research studies in Slash pine (*P. caribaea*) since 1926 and has successfully grown it in various parts of Texas. Slash pines, as well as long-leaf pine, offers promising possibilities under management for a combination production of resin and pulpwood without interference, that is, trees managed for resin production can also be used for pulpwood.

Clay

In Jeff Davis and Real counties, Texas, there are deposits of exceptionally good china clay. The analysis of this clay, as made by the Federal Bureau of Standards, shows it to be made up almost entirely of silica, alumina and combined water.

There are, in East Texas all along the lignite belt, deposits of white clays which offer possibilities for use

in paper making. With the improved methods for removing the objectionable iron compounds by magnetic attraction, the clay problem could be solved right in East Texas, if it proved cheaper than to import china clay from West Texas.

Lime and Limestone

Limestone underlies about two-fifths of the area of Texas and is easily available. The Santa Helena Canyon, most notable in Texas, is a gorge cutting through 1,600 feet of solid limestone. The limestone belt covers a broad area running across central and north-central Texas from the Rio Grande to the Red River.

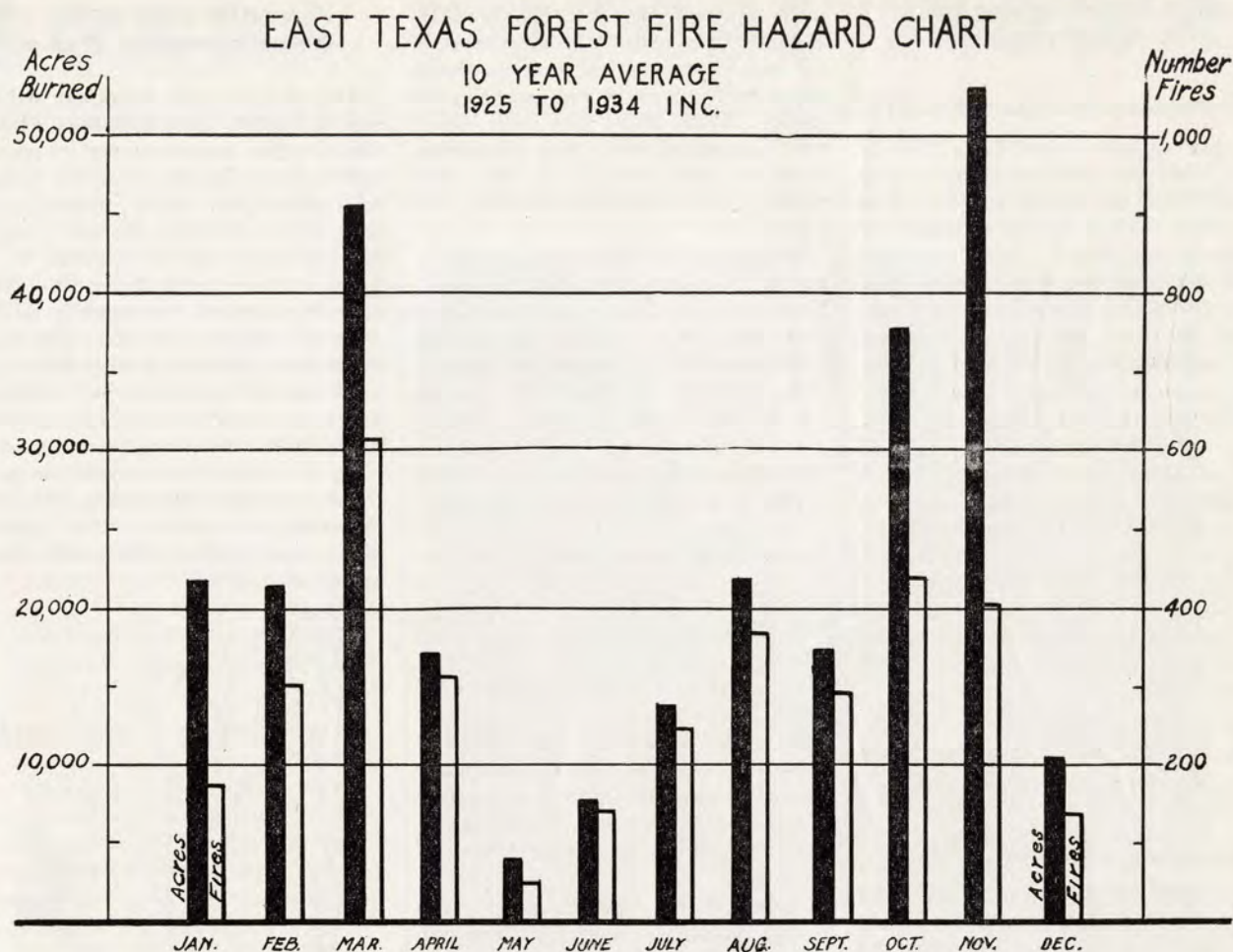
At present lime plants are being operated in El Paso, Austin, Comal, Williamson and Corryell counties and could be produced commercially in many other localities. In 1933 lime production in Texas was 36,286 tons.

Fuel

Texas has fuel resources that are unexcelled by any other portion of the world. She leads the states of this country and all the foreign nations of the world in the production of petroleum and natural gas, with sufficient known underground reserves to last for many years. The world's largest known oil field is in East Texas. It is estimated that the daily gas production of East Texas is 130 million cubic feet and at present as much as 80% is wasted because of no available market. There is, in Texas, about 11,000 miles of gas pipe lines, exclusive of local distributing systems. East Texas is traversed by trunk lines which make the gas accessible to the entire pine belt.

Texas also has an enormous lignite supply which can be converted into power at such low cost that it is now competing as a fuel with oil and gas, being utilized exclusively in two of the largest power plants of the State. The United States Geological Survey estimated the total workable area of lignite to be about 60,000 square miles, with an original supply of about 30 billion tons. Lignite is now produced in at least seven East Texas counties and is known to be available in at least twenty-four others. In addition Texas has an estimated workable area of bituminous coal of about 14,000 square miles.

(Continued on Page 4, Col. 2)



EAST TEXAS FOREST FIRE HAZARD, 1925-1934 INCLUSIVE

The above fire hazard chart is a portrayal, in graph form, of the averaged monthly occurrence of fires in the area protected by the Texas Forest Service in the East Texas commercial timber belt. Covering a period of ten years, the merits of this chart rest upon the unchanged methods of assembling and recording forest fire data. To one not familiar with conditions in East Texas this chart should offer a clearer understanding of the problems to be dealt with in fire suppression work.

One of the most important factors influencing the forest fire hazard in East Texas and in the Southern regions in general is the condition of the forage or grass cover at different seasons of the year. The spring peak in March, as indicated by the chart, shows the highest number of fires for any one month, yet the area burn-

ed over during this month is approximately 8,000 acres below the Fall peak. The greater number of fires in the Spring is largely attributed to "new ground" burnings which escape from slash and brush disposal operations pursued by farmers engaged in clearing small areas of farm woodlands for cultivation. Another common cause of Spring fires may be ascribed to the few stockmen who still hold the now discredited belief that burning the woods is an effective weapon in cattle tick eradication. The lower loss of acreage in the Spring may be traced to the fact that the grass has begun to green, thereby reducing the inflammability of the ground cover to a marked degree.

The Fall peak in November shows the greatest loss in acreage as contrasted with a fewer number of fires occurring during the same month. Stockmen realize that Fall burning reduces the amount of winter forage. In addition to this precaution on the part of the stock raisers, few "new grounds" are being cleared in Novem-

ber. These facts result in fewer fires in this season. Offsetting the decrease in fires, however, is the increase in area burned. The dead and powder dry condition of the grass and weeds in the fall aids the rapid spread of fires to no small end. Periods of dry northerly winds add to the hazard and, whipped before these drying winds, forest fires have often reached considerable size before the fire suppression personnel can reach them.

As shown by the chart, the total average yearly loss from fires is 272,822 acres, with an average of 3454 fires annually. More significant do these figures become when it is understood that the average fire burns 79 acres.

This chart serves its most useful service by indicating what months are the most hazardous regarding the number of and acreage burnt by forest fires. With such information to go by, the Division of Forest Protection of the Texas Forest Service is better able to direct and maneuver its field force throughout the year.

GULF COAST SLASH PINE PLANTATION

(Continued from Page 1, Col. 2)

old, having been raised from Florida seed sown the previous year in the Kirbyville State Forest Nursery. The seedlings then averaged 8 inches in height.

In the four growing seasons that have followed, 75 percent of the original 450 trees set out have survived and now average 12 to 14 feet tall, with some as high as 18 feet. This would indicate an average growth in height of three feet a year.

Miss Jones, in commenting on her plantation, stated that the trees seemed to do much better than any of the local pines. The excellent records portrayed by this slash pine plantation should be an inducement to landowners considering setting out forest or windbreak plantations in the Gulf Coast region.

ORGANIZED FIRE PROTECTION COMES TO NORTHEAST TEXAS

(Continued from Page 1, Col. 1)

work is M. E. Brashears, located at Marshall, Texas. Under his direction are 18 Forest Patrolmen and 16 Emergency Patrolmen.

Fire protection has long been recognized as the most important measure in growing and sustaining a timber crop; next comes wise utilization of that timber. The new area, being predominantly farm ownership, presents an outstanding opportunity for the practice of woodland forestry. Farmers should recognize their timber as a crop and protect it as a crop. The income from their timber will then be continuous, together with a supply of farm timbers and wood. Timber stands effectively protected in this new area, and fully stocked, will grow from 200 to 400 board feet or from $\frac{1}{2}$ to 2 cords of wood per acre per year. Recognition of the possibilities of timber growing in Northeast Texas was the promoting factor influencing the Texas Forest Service to put the area under organized fire control. Timber growing is a problem of today. It means life and prosperity to the generations of tomorrow, an income for those of today. New uses for pine

trees are constantly being brought to light. Only recently has the process for making newsprint from Southern pines been proven a commercial possibility. With these new uses come new industries; with new industries come increased wealth to the community and better standards of living.

Organized fire protection will be a success if every citizen does his part. These new counties have shown their determination to make fire protection successful. With this spirit of cooperation, forestry in Northeast Texas should look towards a bright future.

POSSIBILITIES OF PULP & PAPER PRODUCTION IN EAST TEXAS

(Continued from Page 2, Col. 3)

In 1929 production of coal and lignite in Texas amounted to 1,100,668 tons; natural gas, 464,928 million cubic feet; and petroleum, 419,485,000 barrels.

At this point it is interesting to note that for all of the principle materials used in paper and pulp manufacture, each one is abundantly available within the boundaries of Texas.

Labor is available in more than ample quantities. Wages for common labor run from \$1.00 to \$2.00 per day. A supply of men in the skilled mechanical trades is also available. Climatic conditions are such as to be most favorable for outdoor work during the entire year.

Transportation facilities are more than adequate in Texas. On January 1, 1932, there was in operation a total of 17,068.88 miles of main line railroad track. The Railroad Commission of Texas reports 108 railroad companies of which 22 rate as Class I, 14 as Class II and 31 as Class III with 41 lesser companies, that is, companies maintaining separate legal existence and keeping separate financial but not separate operating accounts.

Texas also has ocean ports at Orange, Port Arthur, Beaumont, Galveston and Houston which serve the East Texas territory. The intercoastal waterway connects Galveston and Port Arthur with New Orleans and other Gulf ports to the east.

The improved highway system of

BLACK JACK OAK (*Quercus marilandica* Muench)

The occurrence of blackjack oak is said to indicate poor soil. It is certain that it often occurs on dry or poorly drained gravelly clay, or sandy upland soils where few other forest trees thrive. This perhaps accounts chiefly for its slow rate of growth. It is found in those parts of the State that support a natural tree growth, as far west as Callahan County. The tree sometimes reaches a height of 50 or 60 feet and a diameter of 16 inches, but it is usually much smaller. Its hard, stiff, drooping branches form a dense crown which usually contains many persistent dead twigs. The bark is rough, very dark, often nearly black, and broken into small, hard scales or flakes.



Twig, two-thirds natural size. Leaf and fruit, one-third natural size.

The leaves are of leathery texture, dark green on the upper surface, lighter underneath, broadly wedge-shaped, 4 to 10 inches long and about the same in width. The fruit is an acorn about three-quarters of an inch long, yellow-brown and often striped, enclosed for half its length or more in a thick, light brown cup.

The wood is heavy, hard and strong. It is used as firewood and made into charcoal.

East Texas offers possibilities of cheap transportation by truck. Texas has about 15,000 miles of improved highways.

Since importation of pulp and paper amounted to 54% (1930) of the total requirements of the United States it is readily discernible that an expansion of the industry within the United States is entirely possible without any immediate danger of over production.

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EAST TEXAS FOREST FIRE REPORT FOR 1935

Limiting the loss from forest fires in East Texas in 1935 to 63,201 acres, or nine-tenths of one per cent of the 6,731,200 acres protected, marks the first time in the twenty year history of the Texas Forest Service that the area burned over has been less than one per cent of the area furnished protection.

The 1935 fire report shows that 3,536 forest fires were suppressed. The average fire in burning over 17.8 acres also set a new low, which during the past ten years had averaged 65 acres per fire.

Area Burned 70 Per Cent Less

It was further revealed that forest fires burned over one out of every 106½ acres protected in East Texas in 1935, and that one fire occurred on every 1,900 acres protected. Without a comparison, these figures mean little. However, by taking the records gathered over the ten year period, 1926 through 1935, as a basis on which to compare results, it is shown that fires during this period burned over one out of every 35 acres protected. This would indicate approximately a 70 per cent decrease in the acreage burned in 1935 as compared to the past ten years. In dollars and cents alone, this means a saving of many thousands of dollars to timberland owners in the commercial belt in East Texas.

"Hot-spot" of East Texas

The "hot-spot" for forest fires during the 1935 season was in Newton, Jasper, Tyler and Hardin Counties. Within the boundaries of these four counties,—four of the eighteen wholly or partially protected,—over 50 per cent of the forest fires occurred, causing a loss of 70 per cent of the total area burned over in East Texas last year. These counties lie almost entirely within the longleaf pine belt and the damage done to the 1935 longleaf seed crop, which many au-

(Continued on Page 3, Col. 1)



A fire-lane road built on an old logging tram in East Texas. Such roads have opened here-to-fore isolated tracts of timber to more adequate means of protection. Readers may be interested in learning that the forest in the immediate foreground is a stand of old field pine which has come in on the old Augusta field several miles south of Camp Ruby in Polk county. This is reputed to have been one of the first places settled in that locality.

CIVIC CLUBS URGED TO JOIN IN FOREST CONSERVATION

In a program aimed at getting the public to recognize the value of the forest resources of Texas, civic clubs throughout the East Texas timber belt have been recently urged to make forest conservation one of their major club activities.

Since the forests of East Texas are an important public asset, furnishing employment, recreation, and incomes to many thousands of citizens annually, the protection of this vast resource is not alone a state or

(Continued on Page 3, Col. 3)

FOREST FIRE LAW VIOLATORS CONVICTED

By disregarding the property rights of others, two Tyler County men, Jesse Rawls of Spurger and Eddie Williams of Rockland and two Anderson County men, Julian Wilson and J. B. Brock, both of Palestine, are \$93.45 poorer and view with new respect the State Forest Fire Law which makes the wilful or negligent setting of fires on land not one's own a misdemeanor subject to fine, the Texas Forest Service announced today.

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FACTS ON DIAMETER—LIMIT CUTTING

An interesting study recently made on "Selective Logging" by the Virginia Forest Service (Pub. No. 43) and the U. S. Forest Service (Leaflet No. 55) reveals some important information on what size tree is profitable to harvest.

The study shows in detail that when trees seven inches and larger were cut, a total volume of 13,636 board feet, lumber tally, was harvested per acre. This converted into dollars and cents meant a gross return of \$94.36 per acre. At the same time if only trees twelve inches and larger were cut the volume removed would have dropped to 11,632 board feet per acre but the gross return in dollars and cents jumps to \$106.67 per acre. "In other words, the lumberman makes \$12.00 per acre by leaving 2,004 board feet of young trees (standing) on the ground. This holds no matter whether he owns the land or whether he expects to make a return cut. In the event he does plan on a return cut the young stand has an additional worth as growing stock of several dollars per acre and enhances the value of the land itself".

The general feeling among sawmill men seems to be that No. 2 lumber just about pays its way through the mill and that the uppers must more than carry grades below No. 2. A few mills can usually show a profit on the No. 2 grade but ordinarily their main profit is on the upper grades. Data obtained in this study showed the percentage of lumber per thousand board feet, lumber tally, falling in the upper grades, when eight inch trees were cut, was only 15.8 percent; but when cutting twelve inch trees the percentage of uppers jumped to 36.1%, or over twice as much. The difference between profit and loss for an operation may depend on whether eight inch trees are cut or left in the woods to grow.

Mr. W. W. Ashe found in his studies of Southern Pine operations that the time required to make a thousand feet of lumber from eight inch trees was 1,211 minutes while only 714 minutes were required to produce a thousand feet of lumber from fifteen inch trees. "It is immaterial whether the sawyers in felling trees work fast or

slow; the relation between the time required for small trees and the time required for large trees remains the same. Likewise in skidding it does not matter whether the team is a good team or a poor team; the relative skidding time remains essentially the same until a point is reached at which the team is overloaded. Nor does it matter whether, in hauling, all logs from small trees and all logs from large trees are hauled separately or mixed." If eight inch trees are cut, 53 logs must be handled in order to obtain 1,000 feet of lumber; if 15 inch trees are cut only 15 logs must be handled in order to obtain 1,000 feet of lumber.

It is, of course, impossible to set a definite size as being the limit below which no tree should be cut from an area as large as East Texas. The size will vary from one operation to another and may vary from one logging chance to another within the same operation. This makes it necessary for each operator to study his own conditions closely and determine for himself just which trees should be cut and which ones left. Still the fact remains that the difference between profit and loss may be whether eight inch trees are cut or left to grow.

A NEW FOREST CREDIT BANK

The Fletcher Bill, which is scheduled for the attention of Congress during the present session, is a commendable attempt on the part of our government to encourage and make possible the growing of timber by the lumber industry. Economists and foresters agree that the present system of taxation and financing, insofar as the forests are concerned, is basically wrong and will have to be changed before we can expect private capital to take up timber growing as a business. The Fletcher Bill is an attempt to make the changes deemed necessary.

During the past years Congress has enacted a number of laws making available farm loans for long periods, at a reasonable rate of interest. The Fletcher Bill proposes to offer similar facilities to timberland owners who wish to manage their lands for the production of timber as a crop. The Texas Forest Service endorses

the general principles of the Fletcher Bill, although it favors minor modifications as to some of its provisions.

The bill, provides for the creation of a Federal Forest Credit Bank, empowered to make loans for the following purposes:

1. To aid in the liquidation or re-financing of indebtedness incurred for forestry purposes.

2. To provide for the improvement, protection, management and operation of forest lands, the utilization of forest products and other forestry purposes.

3. To provide for the purchase of forest lands and other properties to be used in connection with construction of forest railroads and highways.

4. To provide for the construction and acquisition of transportation facilities to connect forest lands with railroads, highways and waterways.

The Forest Credit Bank would have a capital of \$40,000,000 of which \$10,000,000 would be set aside as an insurance fund against losses from fire, insects, disease and windfall. In addition to its capital stock the Bank would be authorized to issue bonds up to \$200,000,000 with interest and principal guaranteed by the United States.

Loans would be made only to operators who agreed to manage their holdings on a sustained yield basis, and into each loan contract would be written the borrower's plan of forest management. No loans would be made for less than \$2500 and none for an amount to exceed 50 percent of the appraised value of the property offered as security. No loan would be made with a maturity date of more than 30 years.

Interest rate on loans is not definitely set other than to say the rate to be charged will be roughly 2 percent above the rate paid by the bank on its last previous issue of forest credit bonds. From the experience of other governmental loan agencies this would mean an interest rate of about 4 percent to the borrowers.

The passing of the Fletcher Bill would open up a new avenue through which the Lumber Industry might reach the goal of sustained yield and perpetuate an industry which now ranks fourth in importance in the Nation.

1935 PLANTING SETS ALL TIME RECORD

In a movement which saw its start as early as 1740 when an experiment in growing oak for ship timbers was made at Pembroke, Massachusetts, the reforestation program, increasing in magnitude through a 195-year period, reached an all time record in 1935 with the planting of over half a billion trees throughout the United States. According to tabulations gathered by the Forestry News Digest this total was an increase of 338 million trees, or 68 percent, over 1934 plantings.

Of the 502,000,000 trees reported planted in 1935, 44 percent were set out on National Forest lands, 19 percent on privately owned lands, 18 percent on State lands, 18 percent on eroded lands and one percent on lands set aside for the newly created shelterbelt project.

It is of interest to note that whereas no planting was reported for 12 states in 1934, only one state, Nevada, reported no planting in 1935.

Texas, by planting over six million trees in 1935, ranked seventeenth in the nation. This is a noteworthy rise from the thirty-second place she held in 1934.

EAST TEXAS FOREST FIRE REPORT FOR 1935

(Continued from Page 1, Col. 1)

thorities claim to have been the most abundant in over a decade, will run into thousands of dollars.

Fires in Nacogdoches County also ran into high figures. Within that county over 4500 acres were burned last year as a result of 388 fires.

1935 Results Encouraging

The decrease in the acreage burned in 1935 is most encouraging. It indicates that the practically complete detection and communication system, as well as the efficiency of the Fire Protection organization gained through twenty years of experience, along with the suppression aid furnished by the CCC camps and local citizens, have had a marked influence in the reduction of fire-burned acreage and damage.

HOUSTON LIONS CLUB HEARS FORESTRY SPEAKER

Forest conservation was the main topic discussed at a recent meeting of the Houston Lions Club. The speaker, B. Koontz, assistant forester of the Texas Forest Service, by describing the growth records of several native pines, showed the value to be gained by protecting and maintaining the forests of Texas. He pointed out that many large East Texas cities have their very foundation in the commercial timber belt, with the headquarters for some of the South's largest lumber companies located in Houston. Timber has and is playing an important part in the economic life of Texas. The perpetuation of this resource is vital to the welfare of our people.

VALUE OF FARM WOODLANDS STRESSED BY KIRBYVILLE LIONS CLUB

The Lions Club of Kirbyville in a recent meeting heartily endorsed the fire protective and stand improvement activities of the Texas Forest Service and resolved that through the elimination of fire and by increasing the stand of timber, the land owner would derive greater benefit from his farm woods.

Figures were presented to show the farm ownership in Jasper and Newton counties. Jasper County, with an area of 84,888 acres in the county farm-owned, has approximately 50,000 acres in farm woodlands and Newton County with 81,368 acres of the county farm-owned, has 55,000 acres in farm woodlands. Approximately 14 per cent of the total area of both Jasper and Newton counties alike, then, is in farm ownership.

By applying simple mathematics to these statistics, the importance of the forest land to the above counties can be more clearly indicated thus: of the total area of Jasper and Newton counties, only five per cent of the area in each county is in improved lands devoted to raising farm crops. Of the balance, approximately 90 per cent, is timberland. Nine per cent of the forested areas, as stated above, is owned by farmers; the remainder is owned by lumber companies, land development concerns and others.

MODEL PINE HOME AT CENTENNIAL EXPOSITION

In keeping with the desire of the trade promotion committee of the Texas Centennial Exposition to feature a display of the natural resources and manufacturing enterprises found and functioning in Texas, it is of interest to note that an all southern pine model home will be erected on the Exposition grounds at Dallas in the near future.

The model home, which is to be built on a favorable site in the home building area of the exposition, will be featured by the Southern Pine Association and will be constructed in accordance with the Association's famous "15 Cardinal Points of Correct Frame Construction". Both interior and exterior finish of the home are to be built entirely of grade-marked southern pine lumber, and will be termite proof. The model home will be a five or six room structure, and will contain all modern conveniences and equipment. It will serve to demonstrate the most effective and attractive uses of southern pine for building purposes.

CIVIC CLUBS URGED TO JOIN IN FOREST CONSERVATION

(Continued from Page 1, Col. 2)

national duty, but a public responsibility as well.

Local civic organizations are in an excellent position to forward the forestry program. Founded on sound business ethics, these clubs, through their varied membership, represent many lines of industry. Their members are influential public citizens. In times past many civic groups in East Texas have lent whole-hearted assistance in advocating forest legislation. With timber becoming more important every day to the program of security and economic welfare, the Texas Forest Service urges that these organizations again lend their aid in formulating a successful forestry program.

In furthering this project the Texas Forest Service is offering the services of a forester to any organization wishing to cooperate and outline a forestry program.

FOREST FIRE LAW VIOLATORS CONVICTED

(Continued from Page 1, Col. 3)

The two Tyler County cases were tried in Woodville in Judge Polk's court, and in both instances the law moved with speed in indicting and arraigning these men for their respective misdemeanors. The fire Rawls set occurred on March 16, 1936, about 7:00 P. M., and burned over 150 acres of valuable timberland before it was put under control. On March 17, he was arrested and placed in jail. On the 18th he pled guilty, and on March 19 was assessed a fine and cost amounting to \$19.00.

The fire Williams set occurred on March 27, and on April 4, he was brought before the court and charged for his law infringement to the cost of \$25.25.

Before Justice Moore's court at Palestine, J. B. Brock was indicted and fined a total of \$24.20. In the same manner, Justice Raines's court at Slocum found Julian Wilson guilty of violating the fire laws, and on April 2 charged and fined him to the amount of \$25.00.

Other cases of similar nature are pending in Tyler County. Due for hearing on May 7 at Judge Polk's court at Woodville are the cases of Ellis Bingham of Spurger and G. B. Risinger of Woodville.

The fire which Bingham is charged with setting occurred on March 16 and burned over eighty-four acres of forest land before being brought under control.

In the case of Risinger, the fire claimed set by him on March 17, while not burning over a large acreage, was started with the same malicious intent, it is reported.

Two fire law violation cases are also pending in Hardin County. Charges have been brought against Richard Roth and Joe Thornton, both of Kountze, who, it is stated, on March 16 and March 19, respectively, intentionally set fire to forest land not their own. These cases are due for hearing on May 2 at Judge Cunningham's Justice court in Kountze.

In Anderson County, Fred Keopnick, Elkhart citizens, is booked for

SOUTHERN RED OAK

(*Quercus rubra* Linn., formerly *Q. digitata* (Marshall) Sudw.)

The southern red oak, commonly known as red oak and formerly as Spanish oak, usually reaches a height of 80 feet and diameter of 3 feet, although larger trees are found. It grows on dry hills in the eastern part of the State to the Brazos River, while three varieties are found in richer, more moist locations. Its large spreading branches form a broad, round, open top. The bark is rough, not deeply furrowed, and varies from light gray on young trees to dark gray or almost black on older ones.



SOUTHERN RED OAK

Leaf and Fruit, one-third natural size.
Twig, one-half natural size.

The leaves have irregular-shaped lobes, mostly narrow, bristle-tipped, the central lobe often longest. Varieties *pagodaefolia* Ashe, and *leucophylla* Ashe., have more numerous lobes; variety *triloba* Ashe., has pear-shaped leaves with 3 rounded lobes at the outer end and is the most common East Texas variety. All leaves have brown or gray down beneath.

The flowers appear in April while the leaves unfold. The fruit ripens the second year. The small, rounded, half-inch long acorn is set in a thin saucer-shaped cup that tapers to a short stem.

The wood is heavy, hard, strong, coarse-grained, and valuable for lumber. The bark is rich in tannin. The tree is also desirable for shade and ornamental use.

SOUTHERN PINE CONSUMERS

Information contained in a report by the Southern Pine Association on sales of Southern Pine for the first eleven months of 1934 shows Texas is still the largest consumer. Out of 1,938,522,000 feet of Southern Pine sold in the domestic market, Texas bought 302,778,000 or 15.6% of the total.

The first ten ranking states in order of amount consumed are Texas, Ohio, Illinois, Pennsylvania, Indiana, Michigan, New York, Missouri, Louisiana and Oklahoma.

Four States—Florida, Georgia, Oklahoma and Texas are their own leading consumers. Florida took 61.5% of its 1934 sales; Georgia 17.5%; Oklahoma 64.3%; and Texas 69.3% of their own sales.

Texas has held first rank as a consumer of Yellow Pine for a number of years.

Burned timber often results in the loss of direct and indirect wages, taxes and other public benefits.

trial in the near future before Justice Raines's court, for a forest fire which it is charged he intentionally set on April 1.

Pending also in Cherokee County is the case of D. Wagoner, colored farmer of Rusk, who has been charged with firing the woods on April 2. His case is subject to hearing before Justice Spink's court at Rusk. At present Wagoner is said to be out on bond.

It is regretted that such stringent measures as exemplified in the above cases must be taken against these individuals. However, incendiarism caused over 35% of all the forest fires occurring in East Texas in 1935. With fires as the greatest drawback to the production of timber as a crop, the apprehension of the relatively few people who still insist in wilfully destroying the property of others is needed. Educating local citizens to the value of East Texas forests is the best means of reducing maliciously or carelessly set fires. Where such measures fail, the law must take its course in defending other property owners' interests.

Texas Forest News

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TEXAS FOREST SERVICE

June, 1936

MAN STILL "FOREST ENEMY NO. 1."

Burning matches dropped; cigarettes or cigar butts carelessly flipped into the woods; camp fires or "warming fires" abandoned while still burning; "new-ground" brush fires let out of control; and fires set by individuals intent on the idea of destroying the property of another, all combined, caused over ninety per cent of the forest fires in East Texas in 1935, and left man in his incontestable rank of "Forest Enemy No. 1."

The fire records of the past season, presented below, bear out this fact.

Cause of Fire	Number of Fires	Percent of Total
Lightning	4	.1
Railroads	15	.4
Lumbering	85	2.4
Brush burning	381	10.8
Campers	251	7.1
Smokers	1392	39.4
Incendiary	1250	35.4
Miscellaneous	143	4.0
Unknown	15	.4
	3536	100.0

Analysis of the table brings to light one fact that should cause landowners in East Texas to give this situation more than passing notice. Of the 3536 fires in 1935, all but 4, a result of lightning, were MAN CAUSED. Lumbermen and railroad companies have recognized the forest fire problem and their cooperation in the fire prevention program is evidenced by the fact that together, the operations of this group only caused 2.8 per cent of the fires last year. Approximately 97 per cent of the fires then, must be attributed to other causes.

In many sections of East Texas the local citizens have not yet gotten out of the habit of annually burning over lands for what they believe to have a favorable effect on conditions in the woods. Educational methods are gradually decreasing this tendency.

Recreationists, tourists, campers,

(Continued on Page 3, Col. 2)



These pines were planted in Brazos County in 1929. Today, seven years old, they average over 15 feet in height. Mr. Wipprecht, Business Manager of the fiscal department of A. and M. College, who set out the plantation, is shown with his pines.

BRAZOS COUNTY PINES MAKING RAPID PROGRESS

Several miles west of Bryan, in Brazos County, the regularity of the post oak forest and plowed fields is broken by a small, dark green patch of pine trees. These pines, not a native species in the post oak belt, were planted by Walter Wipprecht, Business Manager of the fiscal department of A. & M. College, on his farm in 1929.

The area selected for the plantation was rich bottomland that had previously not proved profitable to cotton because of the damage wrought by overflows. Mr. Wipprecht decided that if pine would grow on the land he could develop a new source of fire wood and fence posts, perhaps some sawtimber and very likely some

(Continued on Page 3, Col. 1)

EXHIBIT OF TEXAS NATURAL WOOD RESOURCES AT CENTENNIAL EXPOSITION

An exhibit on the forest resources of Texas, and featuring particularly the forest industries dependent upon those resources, is now being installed in the Museum of Natural History, Texas Centennial, Dallas. Funds for this exhibit were raised by Texas timberland owners and manufacturers through the efforts of a committee representing the Texas-Louisiana Mill Managers Association. Mr. W. F. Edens, Edens-Burch Lumber Company, Corrigan; Mr. R. M. Eagles, Sauer-Ragely Lbr. Company, Carmora; J. A. Richards, Texas Long Leaf Lumber Company, New Willard, constitute the committee. Mr. W. J. Oliphint, President of the Texas For-

(Continued on Page 3, Col. 3)

HOGS VS. LONGLEAF PINE FORESTS

The Texas Forest News is fortunate to be able to present the following observation, made by H. H. Chapman, Professor of Forest Management at the Yale School of Forestry. For the past twenty years Professor Chapman has accompanied the senior class of Yale Foresters on their annual trip to the South and has had ample opportunity to study southern conditions as they actually are. He is considered by many as an authority on southern forestry.

Throughout the South there is a striking difference between the condition of cut over lands in longleaf pine areas and in those originally bearing loblolly or shortleaf pines. On the latter types an operation which removes all trees down to 12 inches on the stump still leaves many small trees below this size, sometimes as many as were cut. These trees are also younger than those of saw log size, and on release they put on more rapid growth. Within 15 to 30 years from 5 to 8 inches of diameter may be added, on good sites, and a second cut is possible.

The longleaf pine forest presents a sharp contrast to this condition. After a logging operation it is often the case that hardly a single tree is left, and those which do escape the saw are slender whips with poor crowns and of doubtful capacity either for growth or seed production.

Those who suppose that this contrast is due to closer utilization of longleaf pine, or cutting to a smaller diameter, are quite mistaken. The same classes of trees are cut as in the shortleaf forests. The cause of this condition does not lie with the lumberman.

Examination of old growth longleaf pine forests reveals an almost complete absence, for the most part, of trees below 12 inches on the stump. Consequently there are none to be left, unless provisions entirely different from customary practice are adopted. The fact is that the destruction of these longleaf forests began with the first settlement of the region by the whites, who introduced the hog. Hogs range freely over the unfenced forests seeking food. They found it in the succulent root of the young longleaf pine seedling. They prefer seedlings from 2 to 3 years old. One hog will completely denude 40 acres or more of land of longleaf seedlings in a season, and can eat them at the rate of six per minute as long as his appetite lasts. In areas

where hogs do not graze, longleaf seedlings can grow into saplings and poles, similar to those in the shortleaf stands, which hogs do not injure except to a very slight degree and in spots.

Every one knows that hogs eat longleaf seedlings but few realize that were it not for the hog, the old longleaf stands would be interspersed with trees of all ages down to new seedlings. For fully 100 years the hog has destroyed the reproduction of longleaf pine. Hence the surviving forest is composed wholly, except in small areas, of trees 100 years old or older, practically all of which will make saw logs. The lumbering operation simply completes what the hog has started and the forest is wiped out.

Four seed trees to the acre, left at the time of logging, from trees selected for their comparatively long crowns, will give abundant seed every seven years to reproduce the area if hogs are excluded, and provided natural methods are followed in bringing the crop through the seedling stage.

It has also been shown that a crop of five to ten such small selected, even stunted trees, will put on such rapid growth after logging that in 20 to 30 years they will yield 1,500 board feet per acre of prime lumber, free from knots and of high quality. This cut will usually give a return which cancels the taxes and has been known, in addition, to pay for the land itself at cut over land prices, so that the young pine costs practically nothing. Such trees to the proper number can usually be found in any old stand, but not always. It is greatly to be regretted that more land owners have not given thought to this possibility of making their cut over longleaf lands carry themselves, and adopted such measures at the time of logging.

"WOOD—MORE VALUABLE THAN GOLD"

By Dr. C. M. A. Stine

(The following article from Bulletin of the Chemical Foundation, Inc., recently appeared in "Conservation" and is reprinted here through the courtesy of the American Forestry Association).

Lumber is perhaps our oldest industry. Based on a raw material that is an uncultivated product of nature, few industries seem further removed from chemical research than this one.

Yet, no industry has seen greater chemical changes. Literally, wood to the chemist has become more valuable than gold.

It is almost inconceivable in this day when paper is so plentiful even paupers can waste it, that within the memory of a man less than seventy years old it was a luxury. During the Civil War and earlier, newspapers were so rare that people read them in groups at the post office and corner store. In the homes even of the well-to-do the Bible and perhaps a few other religious books were all that one would find. Only twenty-five years ago most groceries were sold out of bins and barrels.

Today, a thousand tons of newsprint is used in the printing of a single Sunday edition of a great New York newspaper. Paper towels are in every public washroom, and the cheapest item of food or merchandise is sold in a paper container. We publish as many books in a year as we have people. The post office sells an average of 120 postage stamps yearly for every man, woman and child. We not only produce, but use ten million tons of paper each year, or as much as all the rest of the world combined. And almost two-thirds of this paper is made from chemically-treated wood pulp supplied by the forests.

The rise of paper has been up steps built by the research chemist—first, the development of the soda process for the reduction of wood to pulp; second, development of the sulphite process for the same purpose; and third, the more recent discovery of the Kraft process. The soda and sulphite processes made paper cheap and plentiful; the Kraft process made it possible to make cheap paper strong. Out of the latter discovery has grown an enormous expansion of the paper board branch of the industry, which, through chemical conversion of wood and of cheap wastes, is challenging wood in its natural form in building construction and elsewhere.

Chemical research has produced wall board, plaster board, gypsum board, and other insulating boards that displaced lath and plaster and add greatly to the comfort and efficiency of the modern home. Wrappings and paper board now constitute more than half of the total tonnage of the paper industry.

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TEXAS FOREST NEWS

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BRAZOS COUNTY PINES MAKING RAPID PROGRESS

(Continued from Page 1, Col. 2)

Christmas trees, for local sale.

The trees were obtained from the Texas Forest Service nursery at Kirbyville. The planting was completed in 1929 and during the first year 85 percent of the original 2,000 trees survived. Measured in April, 1936, these pines averaged over fifteen feet in height and three and two-tenths inches in diameter, indicating that the seven year old plantation has grown over two feet in height a year. At this rate of growth many of the trees will be large enough for fence posts by 1939. The largest tree measured was 5.3 inches in diameter and 22 feet tall.

In the spring of 1930 additional trees were planted to replace losses in the original plantation and on another adjacent area. Slash and shortleaf pine were also included with the loblolly on this second planting. These trees have survived remarkably well and averaged over 8 feet tall when measured this spring.

Outside of keeping the weeds down during the first year and protecting the area from fire, Mr. Wipprecht has not given the plantation any great amount of care. It was his desire and feeling that the success or failure of the pines should rest on their own inherent qualities to survive in a region so far removed from their natural range. There is no doubt but that they have succeeded admirably in adapting themselves to this locality.

Mr. Wipprecht takes great interest in his pine plantation. He feels that with such excellent growth records as evidenced from his pines, landowners have an excellent opportunity to set aside their poorest land in trees. A small investment at the present time will yield good returns in the future.

VOCATIONAL TEACHERS REQUEST FORESTRY TRAINING

North Carolina—On their own initiative, vocational teachers of North Carolina requested a short course of training in forestry and farm forestry problems. The course was conducted in the field at a woods camp. Seventeen teachers and others enrolled.

CROCKETT LIONS CLUB HEARS FORESTRY SPEAKER

"Timber grown and utilized as a crop is a source of permanent income for any trade community," said B. Koontz, Assistant Forester of the Texas Forest Service, in addressing a recent meeting of the Lions Club of Crockett.

Farmers and other timberland owners of Houston County would do well to consider the benefits of keeping part of their farms in forest land, he said. With all of their land in cultivation, farmers in the past have often been seriously handicapped in realizing an annual income because of adverse conditions which upset their expected yield from crops. With part of their farms in woodland, such conditions would be reduced because the farmers could turn to their forests as a source of revenue when other crops fail.

Besides keeping part of their farms in timber, farmers should also understand the necessity for protecting their holdings from fire in order to realize maximum timber growth and incomes.

The meeting was well attended and many of the members showed a real interest and understanding in the forestry problems of the state.

MAN STILL "FOREST ENEMY NO. 1"

(Continued from Page 1, Col. 1)

and sportsmen are frequenting the woods in greater numbers than ever before. Based on simple mathematics, this raises the chance for "man-caused" fires. Education, local and wide spread, concerning the danger of forest fires, is the best means of reducing this growing hazard.

The Texas Forest Service can not hope to alone remedy the situation. The responsibility rests also with every individual and organization that depends on the vast wealth in our commercial pine region as a means of livelihood and recreation.

Actual expenditures for fire protection on state and private lands throughout the Nation amount to over \$5,400,000 annually, or a cost of 1.29 cents per acre.

EXHIBIT OF TEXAS NATURAL WOOD RESOURCES

(Continued from Page 1, Col. 3)

estry Association and member of the Natural Resources Centennial Exhibit Committee, is in charge of installing the exhibit. The Texas Forest Service is cooperating in securing exhibit material and assisting with the installation work.

The aim of the exhibit will be to depict and display the native woods of Texas, and show the uses of the various commercial species found in the State.

One portion of the display will show the trends in wood construction. Early pioneer construction will be represented by a log cabin constructed in one corner of the exhibit room. Another portion of the exhibit will show the various uses to which the commercial woods of the state are put.

In the Texas Forest Service booth a model is being built to scale, to show a portion of an average forest stand in East Texas. The display will feature a virgin and cut-over forest, the products to be obtained from it, and methods of protecting forest areas from fire. Separate booths will show by graph, maps, and pictures the activities of the Texas Forest Service in fire protection and other lines of work.

More definite information concerning the Natural Forest Resources exhibit will appear in a later issue of the "News".

TEXAS HOLDING HER OWN

Figures have recently been released by the U. S. Bureau of Census showing lumber cut in 1934. Texas, with 381 producing mills, cut a total of 594,479,000 feet which ranks her in eighth place.

The total lumber production for 15,202 mills in the United States, according to the report, was 15,493,639,000 feet which was a gain of 11% over the cut for 1933.

In the production of yellow pine, Texas ranked third, being topped only by Mississippi and Alabama. Texas cut 509,788,000 feet of yellow pine.

Of the total 15,493,639,000 feet of lumber cut, 12,735,350,000 feet are credited to softwoods while only 2,758,281,000 feet were shown as being hardwoods.

"WOOD—MORE VALUABLE THAN GOLD"

(Continued from Page 2, Col. 3)

Wood is more than wood to the chemist. It is cellulose, and veritably cellulose is a magic material. It is the fibre that forms the cell wall of all plants, but practically, wood and cotton are its chief sources of supply to the modern chemist. In the form of cellulose and its derivatives, wood and its running mate, cotton, nowadays invade a thousand and one seemingly remote fields in a variety of forms that are almost indefinite. And the limit of possibilities for cellulose is not yet in sight.

Rayon, the world production of which exceeded a billion pounds in 1935, and which is now of a fineness that is setting standards for silk, is a blood child of forest and cotton fields. So is X-ray and other photographic film, the polish for tinting women's finger nails and toothbrush handles. One-half of the production of women's street and dress shoes, and a growing percentage of men's shoes are today neither sewed, nailed nor pegged—soles are sealed to the uppers with a cellulose cement that is revolutionizing shoe manufacture. Shoe buckles, eyelets, lace tips, and the scuffless pyroxylin coating on women's high heels, all may be traced back through the labyrinth of chemical research to some lumber camp or cotton patch.

The safety glass in your automobile, the barrel of the fountain pen in your pocket, the buttons on your coat, the bindings of the books your boy brings home from school, the washable window shades in your home, the toilet-ware on your wife's dressing table, the upholstery fabric on which you sit in the theater and the motion picture film that you watch—not only these but literally hundreds of other articles in daily use are the chemically transformed descendants of wood or cotton. Explosives compounded from cellulose are the modern blasting agents that mine the coal we haul and burn in our locomotives, that deepen channels for our ships, that tear out the stumps the lumberman leaves in his path—the tree he has felled may have contributed the means for the final destruction of its roots.

Wood itself is being changed by chemical research. Wood preserving, which got its start with railroad ties, is being extended to most wood uses where permanency is desired in construction. The chemist has found that wood rot and stain are caused by fungi or parasitical plants, and he has developed cheap chemical treatments for killing them. Blue stain used to cost the lumber industry something like \$10,000,000 a year, but it is no longer a problem. One and a half billion board feet of lumber and squared timbers were chemically treated in 1934.

The aim of research is rot-proof, termite-proof, and practically fire-proof lumber, and it is being predicted in the industry that within the next generation use of such lumber will be general in building. The lumber industry, faced by a new competition on all sides, is fighting change with change.

SHRINK-PROOF WOOD

A new process that prevents wood from warping and shrinking and makes it moisture proof has been developed by Dr. A. J. Stamm, chemist of the Forest Products Laboratory, Madison, Wisconsin.

The idea of shrink-proof wood is not a new one. Past methods, however, attempting to force wax into cells of dry wood have always failed when the treated wood was exposed to moisture.

One of the advantages of the new process is that the wood does not need to be seasoned. Instead the wood is subjected to treatment by a substance called "Cellosolve" which dissolves and replaces the water in the wood. The wood is then placed in a melted wax bath, which in turn replaces the cellosolve. Through these two methods, the wood is completely impregnated with wax and gives far better insurance against future seepage of moisture into the wood structure.

Probably the main feature of the new process is that green wood can be made practically shrink-proof. This fact alone eliminates the necessity for seasoning the wood and helps retain treated materials in their natural size. In addition, the damage usually experienced in green wood from checking, bowing, twisting, and warping is greatly eliminated.

SWAMP CHESTNUT OAK
 (Basket Oak, or Cow Oak)
 (*Quercus prinus* L., formerly *Q. michauxii* Nutt.)

This tree is distinguished by having a wavy leaf-margin, large fruit which is sessile or very short stalked, and by the fact that it occurs in its greatest abundance in bottom lands. It is confined chiefly to the eastern part of the state as far as the Trinity River.

In the appearance of its bark and branches it closely resembles the ordinary white oak, but may be distinguished by means of the leaf and large acorn. The tree attains heights of about 100 feet and diameters of about 4 feet.



Twig, one-half natural size.
Fruit and Leaf, one-third natural size.

The leaves are oval, broader toward the point and notched on the edge somewhat like the chinquapin oak, but rounded instead of pointed. They vary from 4 to 8 inches in length, are downy beneath and turn a rich crimson in the fall. The bark is a very light gray, and on old trees is broken into broad flakes or divided into strips.

The acorn, or fruit, attains a diameter of more than an inch and a length of one and one-half inches. The acorn, which is a bright shiny brown and set in a rather shallow cup, is considerably larger than that of the white oak. It is frequently eaten by cows and this fact gives the tree one of its common names.

The wood is heavy, hard, tough, strong, and takes an excellent polish. It is used in manufacturing lumber, veneer, boards (shakes), tight coo-erage; for fuel and fence-posts; and for making baskets.

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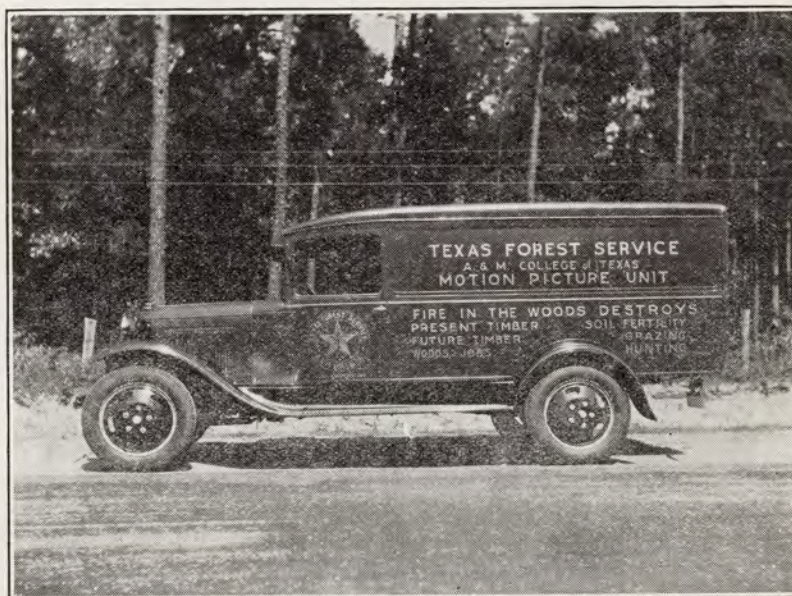
July, 1936

FEW ACCIDENTS IN TEXAS FOREST SERVICE CCC CAMPS

A report recently issued from the Regional office of Region 8 covering the southern states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas on the number of accidents to C. C. C. enrollees, indicated that the C. C. C. camps administered by the Texas Forest Service in East Texas have had a very creditable record thus far. The report which was for the sixth enrollment period, from October, 1935, through March, 1936, covered each unit in the entire region. There are twenty-three of these units in all which include camps on the national forests, Tennessee Valley Authority, and state, private and levee camps in the above states.

Compared with the twenty-three units, Texas C. C. C. camps, under the direction of the Texas Forest Service, ranked sixth in the number of accidents, while, when compared with the state, private and levee camps, they ranked second for this period. During this six months' period, Texas forestry camps had a total enrollment of 8,222 men, or an average of 1,370 men per month. A total of twenty-eight accidents was reported during the period or an average of 4.6 accidents per month. Based on accidents per thousand men, this gives an average of 3.1 accidents. Texas camps turned in their best record in March when no accidents occurred to 943 enrollees. During this month, Texas ranked first throughout the region.

Studies made of the accidents indicate in a broad way that the two most important causes are the improper use of hand tools, and falling objects. Greater efforts are being made to instruct the enrollees in the proper use of tools and care to avoid dangerous situations, thereby lessening the number of accidents.



Two such motion picture units are operated by the Division of Forest Protection, Texas Forest Service, throughout the commercial timbered region under protection in East Texas.

FORESTRY EDUCATIONAL WORK PRODUCTION AND DISTRIBUTION OF FOREST PLANTING STOCK

Since its inception, the Texas Forest Service has realized that a suitable educational program is essential to the success of its fire prevention activities. Approximately 99% of forest and grass fires are caused by human agencies and are consequently preventable. To this end, an intensive forestry educational project throughout the area under protection has been developed.

The use of fire prevention motion pictures depicting the damage resulting from forest fires, showed in the rural communities in the piney woods has been resorted to as intensively as funds for this work have permitted. Up to the beginning of 1929 some member of the Texas Forest Service had employed part of his time to this work by using a portable motion picture projector and generator which was carried in a Ford car. With more funds available, the Texas Forest Ser-

(Continued on Page 4, Col. 2)

The Texas Forest Service has been producing nursery-grown forest planting stock since the spring of 1927. During this period over 1,225,000 seedlings have been grown and distributed for planting within the State. Compared with the enormous reforestation projects undertaken by various Federal agencies in the past three years which have demanded an output of millions of little trees, the production of one and a quarter million trees by the Texas Forest Service appears rather insignificant. However, when one considers the methods of distribution and the number of citizens involved, an entirely different comparison is evident.

Seedlings produced in the State Forest Nurseries are distributed in lots of 100 to several thousand trees each to citizens living within the state.

(Continued on Page 4, Col. 1)

PROBLEM OF CUTTING LEASED TIMBER

At a recent meeting of the Conservation Committee of the Southern Pine Association many forestry problems were discussed. One problem of vital interest to farmers and small timberland owners is the cutting of leased timber. In the past most leased timber lands have been cut close because of economic pressure brought to bear on the lumberman. In order to better this condition, which is not the fault of the lumberman, it is necessary that the farmer or other woodland owner sell his timber down to a stipulated diameter limit and on a pre-determined volume basis arrived at through a systematic cruise of the woodland for sale. The value of the following article, prepared by A. E. Wackerman, Forester of the S.P.A., is such that to cut down on it would leave out valuable facts. For this reason, it is offered in full as delivered at the meeting.

"It is obvious, of course, that lumbermen cannot leave on lands they do not own in fee, trees with a present realization value. Usually, in the purchase of timber rights, they are forced by competitive bidding to pay for the stumpage in even very small trees and since whatever timber is left after cutting reverts to the land owner, it is necessary that all the timber bought be cut. This condition is not the fault of the lumberman, but of the farmer or other owners of timberland who require the buyer to pay for and therefore cut all the timber, even to very small and frequently unprofitable sizes.

The solution of this problem is largely up to the state extension foresters, the State Forestry Departments and the U. S. Forest Service. Lumbermen, however, can assist in demonstrating to other land owners how timber should be cut to provide for the adequate regrowth of timber of good quality, by cutting their own timber properly and by explaining to their forest-owning neighbors the reason why such measures have been adopted. Farmers and others then would gradually themselves adopt the same methods of cutting their timber or selling their stumpage, because it is to their own advantage.

Manufacturers who are largely or entirely dependent upon farmers' timber should be particularly interested in having them maintain their timber supplies permanently. They should even consider the purchase in fee of strategically located tracts of timber in their vicinities and cut them selectively as an object lesson to others. The purchase of logs by grade, paying more for logs of large size and good quality and a minimum price for small logs, should also impress upon others

that undersized trees should be left to grow simply for the reason that it is good business. For every inch such trees grow in diameter they are worth more, not alone because they contain more scale, but because the scale they contain is of better quality and because they will produce logs of larger sizes that can be manufactured into lumber more cheaply."

FORESTS CONTROL FLOODS, FIGURES LEAVE NO DOUBT

Soils are held in place largely by vegetation cover, be it either grass, brush or forests. Removal of this cover results in erosion of the soil. It has been definitely shown that the most serious and wide spread erosion in this country is due to bad agricultural practices. The silting up of streams has been effectively controlled by dams and storage reservoirs. Such control has only proved a temporary measure however and does not get at the heart of the trouble. The prime need is to preserve a forest cover for the water sheds of our flood areas. The following article, prepared by the U. S. Forest Service, offers definite figures to show the value of forest growth in controlling and reducing floods.

"Actual figures on the value of forest growth in controlling and preventing floods are brought out in tests by the Forest Service of the Department of Agriculture in eight major regions of the United States.

In the Ohio Valley forest soil is 15 to 30 per cent more porous than field soil and absorbs 50 times as much water as bare soil. Open pastures absorb only a third to a twentieth as much water as forests. Forest soils absorb more water not only in single storms but in successive rains, an important item in flood control.

Mississippi Valley

On 23 small watersheds at the headwaters of the Mississippi the flood flow from forested watersheds for one year was only 38 cubic feet of water per second per square mile. But the flood water from the grassed and abandoned agricultural lands was 432 cubic feet, more than 10 times as much, and that from denuded land 1,304 cubic feet, nearly 35 times as much. There were no critical flood conditions on lands, but maximum flow from other lands often assumed flood proportion.

In the rich loessial uplands of the Mississippi Valley, near Holly Springs, Miss., forest cover reduces run-off and erosion. Surface run-off in a cultivated cotton field was 58 per cent of the precipitation and in individual rains amounted to as much as 96

per cent. From barren plots in an old field total run-off was 48 per cent of rainfall and erosion totaled nearly 160 tons per acre. In direct contrast, total run-off in an oak forest amounted to less than one per cent of precipitation.

Tests by burning and raking off the litter from pine-hardwoods plots in the Southern Appalachians, show that removal of the cover increases run-off from 10 to 150 times.

Disastrous Los Angeles Flood

The disastrous Los Angeles flood of January, 1934, which took 34 lives, was due to rain falling on a steep watershed that had shortly before been swept by fire. A great volume of water rushed over the loosened and unprotected earth, carrying 67,000 cubic yards of debris from each square mile of watershed, engulfing everything. Neighboring watersheds, protected by unburned brush forests, yielded clear water, which caused no unusual erosion and no serious damage.

"Studies in this field of investigation so far have been scattered and fragmentary, says E. N. Munns, Chief of the Forest Service Division of Silvics, under whom the studies have been conducted, but are building up an impressive mass of evidence. Large-scale watershed experiments are needed for fuller information."

LONGLEAF PINE NEEDLES FOUND USEFUL

At \$4.00 a ton, the sale of longleaf pine needles for use in filling mattresses and upholstering, is furnishing farmers in Mississippi with a new income from their farm woodlands. The needles are chemically treated and shredded into a fine felt. —Mississippi Forests and Parks.

FOREST FIRES IN CONNECTICUT

Connecticut — Through October, 1935, the Connecticut Department of Forestry had suppressed 1318 fires, burning over an acreage of 6,853 acres. The average area per fire was 5.2 acres. The fire season had become so serious during the latter part of October that Governor Cross placed a ban on hunting and fishing and closed the woods within the state for three days until rain relieved the drought situation.—Wooden Nutmeg.

MAYDELLE C C C CAMP CELEBRATES THIRD ANNIVERSARY

Under the shade of tall pines and beside a lake created by their own hands, the enrollees of the Texas Forest Service CCC camp at Maydelle met recently, with their families, friends, sweethearts, officers, foremen and other visitors, to celebrate the third anniversary of the camp's existence since its establishment in June, 1933.

The day's program included a tour of the Maydelle State Forest to show visitors the work accomplished by the camp; a picnic lunch at Lake Mewshaw; an inspection of the camp; a baseball game with the Jacksonville CCC camp which the inspired Maydelle boys won 15-3 and finally, as the grand finale, a dance in the camp Mess Hall.

The one main impression that guests carried away with them was not alone the fact that the camp had completed during its three years: over 132 miles of road, 162 bridges, 44 miles of telephone lines; or improved over 1,500 acres of the State Forest area; or cut 3,500 cords of fuel wood both for camp use and local sale; or produced 22,000 telephone poles and 2,500 fence posts; or furnished fire protection to some 300,000 acres of timberland, which has resulted in forest fires being reduced to a minimum never before attained in this locality. No, more outstanding, was the fine spirit, enthusiasm, health and laughter that radiated from the boys themselves. Most of them local men, they have applied themselves both physically in their work and mentally in their educational studies conducted at the camp.

As the sun slowly sank behind the forested hills and cars were started toward home, one cannot help but note here the remarks that came on all sides from departing guests: "This CCC is a fine thing. I never before realized just what it meant."

North America, with one-twelfth of the world's people, uses about one-half of all the timber consumed in the world.

The first forest railroad was in Steuben County, New York, for logging white pine in 1852.

—"Logging Transportation," N. C. Brown.

TEXAS NATURAL WOOD RESOURCES EXHIBIT AT CENTENNIAL MOVED

The exhibit on the forest resources of Texas has been moved from the Museum of Natural History to the Transportation Building. This building is the first one on the left as one enters the Centennial grounds from the main gate.

MRS. BOYDSTUN DIES AT DENISON

Mrs. Ben F. Boydstun, Vice-President of the Texas Forestry Association, passed away at Denison on Monday, June 8. For twenty years she has been active in behalf of forestry and her services in this field were greater than those of any other Texas woman.

During 1918 and a number of subsequent years, Mrs. Boydstun was Chairman of the Forestry Committee of the Texas Federation of Women's Clubs and rendered effective services in behalf of Forestry in representing the Federations before the Texas Legislature.

During 1923 and '24 she served on the State Committee on Forestry appointed by the Governor, pursuant to the Resolutions passed by the Senate of the Thirty-eighth Legislature. Since 1920 Mrs. Boydstun also served as Director and Vice-President of the Texas Forestry Association.

While Mrs. Boydstun had great love for trees as such, she was exceedingly well informed on the economic aspects of forestry, the importance of the industries dependent upon forest crops and advisable procedure to facilitate forestry progress in Texas. Her formal addresses and also informal discussions at the annual meetings of the Association constituted a distinct contribution to sound forestry thought and progress. The Texas Forest Service will miss Mrs. Boydstun's contributions and unusually charming personality.

AREA OF FARM WOODLANDS IN EAST TEXAS

The farmers in the East Texas commercial timber belt own 4,147,625 acres of forest land. This figure, compiled from the 1935 Federal Farm Census released by the United States Department of Commerce, represents the latest information on the farm ownership of East Texas and reveals that since 1930 the area of farm woodlands has increased about one million acres.

This expansion has been mainly due to the fact that the total farm area within East Texas has increased by over a million acres in the past five years. Much of this newly classified farm area has not yet been cleared and is still in woods. A minor increase in the farm woodland acreage may also be attributed to the natural reforestation of abandoned land that was formerly in cultivation.

The importance of the farmer-owned timberlands in East Texas is better understood when one realizes that of the 19 million gross acres embraced in our commercial timber region, covering 36 counties, one-fourth of the total area, or 36 per cent of all the actual land in forest is owned by farmers. Significant, too, is the fact that throughout this region approximately half of the area of an average farm is timbered.

Valued at \$8,000,000 annually, the products cut from farm forests in East Texas rank eighth in the list of all farm commodities.

The farm woodlands of East Texas offer excellent opportunities for the practice of forestry. Every farmer should carefully consider the advantages to be gained by keeping land unfit for farming in timber. Though trees take a number of years to mature, a young forest adds cash value to the farm, just as does a young orchard. In a few years it yields small material in the form of thinnings, such as poles and fence posts; later as fuel and pulpwood; and finally ties and sawtimber. Thus, through these increased returns, the farm woodland becomes a saving bank that pays compound interest to its owner.

PRODUCTION AND DISTRIBUTION OF FOREST PLANTING STOCK

(Continued from Page 1, Col. 3)

These trees are sold at the cost of raising them which varies from \$2.00 to \$2.25 per thousand, f.o.b. nursery.

The estimated production of planting stock this coming season in the Kirbyville and Conroe State Forest Nurseries is approximately 225,000 seedlings. This production will consist of the four southern pine species: longleaf, shortleaf, loblolly and slash pine. This is approximately double the average yearly production since the nurseries were established in 1927. The unusual interest as evidenced by numerous requests for forest planting stock during the past winter, was caused not only by the activities of the Federal Government but was due, in part, to the recent attention given by the paper industry to the southern forest regions. In this connection, the establishment of slash pine plantations throughout the East Texas pine region has decidedly increased.

The research which the Texas Forest Service has been carrying on during the past ten years in the introduction of slash pine into Texas indicates that this specie which is native to the south, but not native to Texas, has possibilities in certain sections of southeast Texas, and will perhaps be used, at least to some extent, by private concerns who anticipate managing their forest areas for the production of pulpwood. It should be understood, however, that the native loblolly and shortleaf pines which establish themselves readily, will constitute the major source of pulping raw material.

Two forest nurseries have been established at Lubbock and Chillicothe, for the production of planting stock to be distributed at cost to West Texas farmers and ranchmen for the establishment of windbreaks and shelter strips around cultivated fields and homesteads. Due to growing conditions, which make it necessary to transplant seedlings one or two years prior to distribution for this kind of planting, the number of trees available from these nurseries will be limited for the next two years. Sufficient stock is being seeded this season to make possible a distribution of some

300,000 hardwood and coniferous trees from the two West Texas nurseries each year.

A BIG TREE

All the big trees of Texas are not legendary. As an example, from the 33,000 acre forest tract of the Temple Lumber Company in Red River County, comes the report of a veteran shortleaf pine, which when cut, yielded one log over four feet in diameter and approximately twenty feet long. The log contained 1,820 board feet. The log was so big that it had to be hauled by truck on a specially constructed trailer. Its destination was the big lumber mill operated by the Angelina County Lumber Company at Clarksville, Texas.

FORESTRY EDUCATIONAL WORK (Continued from Page 1, Col. 2)

vice recently purchased two new half-ton Ford trucks, equipped with Delco electric generator portable motion picture projectors, and a specially prepared motion picture screen. This also marks the beginning of the year-long employment of two educational assistants to carry on this important work. During 1935 these pictures were showed and forestry lectures were given before a total of 72,668 people.

The following letter, not "solicited" on the part of the Texas Forest Service, was recently received from J. R. Howard, colored Bowie County citizen. The interest and appeal of this letter is such that it is offered here as received in our College Station office.

Rt. 5, Box 291
DeKalb, Texas
May 16, 1936.

Texas Forest Service
Gentlemen:

We, the colored people of northeast Texas, in Bowie County, are very grateful to you for the service rendered by the Forest Show demonstrations put over in our public schools. Your men furnished us much information; besides their shows were very entertaining.

We live in the piny district where frequent forest fiers do much damage to our forests and farms. We believe these shows and lectures will render great assistance in preventing these forest fiers.

Yours Respectfully,
(Signed) J. R. Howard

OVERCUP OAK (*Quercus lyrata* Walt.)

The overcup oak, sometimes known as the swamp white oak and water white oak, becomes a large tree with small, often pendulous branches. It is found in moist, rich bottomland in East Texas to the Navasota River Valley.

The leaves are 7 to 9 inches long, 1 to 4 inches broad, oblong, wider toward the point, narrowed at the base, dark green above, often whitish beneath, with 7 to 9 distinct pointed lobes. They frequently turn to a bright scarlet or to scarlet and orange in the fall. The bark is rough, flaky, gray tinged with red.



OVERCUP OAK

Leaf and Fruit one-third natural size. Twig, two-thirds natural size.

The flowers open with the unfolding of the leaves. The acorn, or fruit, ripens the first year. It is thoroughly characteristic of the species. The large rounded or somewhat flattened acorn, an inch or more across and one-half to 1 inch high, is nearly covered by the ovate or nearly spherical cup, which is thickened at the base but gradually grows thinner, often irregularly split at the margin of the cup. The name of the tree comes from this characteristic.

The wood is heavy, hard, strong and durable and is used for the same purposes as that of white oak.

The railroads use about ninety-five and a half million new wood ties every year.

—"The Forestry Primer"

Forest fires in the United States during 1934 cost a hundred and twenty-four thousand dollars a day.

—"The Forestry Primer"

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FORESTRY EXHIBIT AT CENTENNIAL OPENS TO THE PUBLIC

The forestry exhibit, sponsored by the Texas Forestry Association and the Texas Mill Managers Association, opened to the public, July 6, 1936. The exhibit is located in the Travel and Transportation Building and is part of the Natural Resources exhibit of the State.

The forestry exhibit tells the story of timber as a natural resource treating it from the growing of the trees in the forest to the utilization of the logs at the mill, and on to the final fabrication in model living rooms and illustrative booths. The model living room shows the proper handling of wood panels to bring out the richness of the grain and the beauty of yellow pine. The hardwood booths of sycamore, red oak, white oak, cypress, red gum, sap gum, and magnolia show the adaptability of these woods for interior trim. The beautiful grain of

See EXHIBIT on Page 4

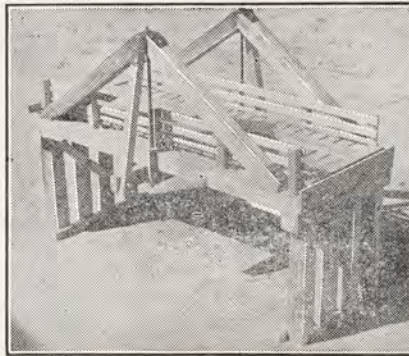
NEGLIGENCE WITH FOREST FIRES BRINGS TWENTY-SIX ARRESTS THIS YEAR

The fire law violation report, released by the Texas Forest Service of A. and M. College, for the first five months of this year reveals that 14 men have been convicted and fined a total of \$349.95. Twelve other such cases are pending and await hearing by the various Justices of Peace Courts in East Texas.

These twenty-six fire law violation cases have arisen through the neglect displayed by certain individuals in wilfully or carelessly setting fires to lands not their own. Such misdemeanor, the Texas Forest fire laws provide, is subject to fine.

Never before has the Texas Forest Service entered into such an intensive fire law enforcement program. However, through the twenty years that the Texas Forest Service has furnished fire protection to the forests

See FIRE VIOLATION on Page 3



Model of a bridge constructed by the C. C. C. camp at State Forest No. 3 near Maydelle. This small model is used as a guide for the Bridge Building class at the camp.

FORESTRY PERSONNEL AID C.C.C. EDUCATIONAL PROGRAM

The results of the educational work conducted by the supervisory force in the eight Texas Forest Service C. C. C. camps show that during the month of June, this year, 42 supervisory men gave 229 hours of instruction to 765 enrollees. The total enrollment in the eight forestry camps during June averaged over 900 men.

The courses taught by the supervisory employees in these camps have included such subjects as Conservation of Natural Resources, Road and Bridge Construction, Mechanics, Leadership, Woodcraft, Forestry, Safety First, Carpentering, Surveying, Black-

See EDUCATION on Page 3

C. C. C. WINS NATION WIDE APPROVAL

The following is a digest of a longer article on the subject recently presented by the American Institute of Public Opinion.

"Are you in favor of continuing the Civilian Conservation Corps?" Ballots bearing this question were sent to every state in the Union in a nation wide poll recently conducted by the American Institute of Public Opinion. From all parts of the country the answer came back "Yes." When the final

See C.C.C. POPULAR on Page 3

FOREST FIRE DAMAGE SEVERE SO FAR THIS YEAR

Figures released by the Texas Forest Service on the forest fire situation, from January 1 to June 1, 1936, reveal that forest fire damage within the 10½ million acres under protection in East Texas has been severe so far this year. The report shows that 5,008 fires burned over 168,854 acres or 1.6% of the area under protection. The average fire was 33 acres in size.

Rainfall Six Inches Below Normal

The spring fire season was notable as one of the driest ever experienced in East Texas. In the timbered portions of East Texas the rainfall during the first five months of the year was six to seven inches below normal. This fact, together with the dry northers which swept through the eastern part of the state in the early spring resulted in creating an excessively

See FIRE DAMAGE on Page 3

NEW CIRCULAR PUBLISHED BY TEXAS FOREST SERVICE

A new circular, Texas Forestry and Forest Products, has recently been issued by the Texas Forest Service in cooperation with the Texas Mill Managers Association.

The new circular is divided into three main parts. The first part deals with forest resources of Texas in which are discussed the forested areas of Texas, the growth of timber in the East Texas pine belt and the present condition of this area. Lumber production and pulpwood possibilities for Texas are also covered in the first part. The second part of the bulletin portrays the activities of the Texas Forest Service, while the third part is devoted entirely to a treatment of the important commercial trees of Texas in which some nineteen important species are described with their uses and production in 1929.

The bulletin has been prepared mainly for distribution at the Texas

See CIRCULAR on Page 3

TAX FREE TERRITORY

In the Jura Mountains near Besancon, France, is a tax free territory. Here twenty-four communes (which in France is the smallest political division and a local self-governing community) with a population of more than 10,000 inhabitants, pay no local taxes. Instead of paying taxes, each inhabitant receives yearly dividends ranging from 100 to 200 francs. In American money, this amounts to over twenty dollars a year.

The question naturally arises how is this possible, and here is the story. Long ago these communes became the owners of the spruce and fir forests in the vicinity of the towns. In the years that have followed, these woods have been so well managed that there is a profit left after all communal expenses have been paid. This profit is divided among the inhabitants.

TIMBER GROWTH IN POLK COUNTY

A timber survey made of Polk County, Texas, in 1931 gave an average annual volume growth for all pine land of 203 board feet. The maximum annual growth averaged 631 board feet on 30,016 acres. The lowest averaged 49 board feet on 28,164 acres. This low average has resulted from the lack of protection from fire and improper management since the land was cut-over. The large average of annual growth made indicates that farm woods and other timberland holdings can easily be made to produce at least an average annual growth per acre of 300 to 500 board feet, if good protection and management methods are followed.

Throughout the Southern states timber makes a remarkably rapid growth. Here saw-timber can be grown in 30 to 50 years if the forests are protected and properly managed, whereas in many parts of the Nation it takes 100 to 150 years to produce saw-timber. It is therefore obvious, that in a region of such rapid timber growth citizens should plan to grow timber as a crop—a crop that will become more and more valuable as the virgin timber supply in other sections of the country becomes exhausted.

"SUSTAINED YIELD"—WHAT DOES IT MEAN?

Since the code days the term "sustained yield" has become quite common among timberland owners and sawmill men. Through common usage it has been loosely connected with various ideas and has even been used to mean adequate forest practices, systems of selective cutting, adequate protection, improved utilization, and to some it even covers, with all its mysteriousness, all the lands within a national forest boundary.

There is nothing mysterious about the term "sustained yield" as used by the forester. It simply carries the idea of a well regulated forest management plan which calls for the periodic cut not to exceed the periodic growth. In other words, from each block of timberland the cut never exceeds the growth. More specifically; if a block carries a stand of 3 M feet per acre and is found to have an average annual growth of 200 feet per acre, at the end of a ten year period, this growth rate would change the stand from 3 M feet per acre to 5 M feet per acre. Sustained yield would demand that the cut at the end of the ten year period be not more than 2 M feet per acre. Theoretically this would always leave a stand of 3 M feet per acre as a reserve or growing stock which would produce another cut within the next ten year period.

A forest, to be handled on a sustained yield plan, must necessarily have a more or less regular distribution of age classes. Such a distribution makes possible the harvesting, at each cutting interval, the allowable amount in the larger sizes and leaves the smaller sizes as growing stock. Thus not all properties, in their present condition, lend themselves to sustained yield management. The first and possibly the second cuts must, through proper selection, put the forest in order and leave a more or less regular distribution of age classes. This is where selective logging enters the picture and is the means by which the forest is put in order.

Our Southern pineries offer ideal possibilities to sustained yield management, not merely because of their rapid growth, but also because of their ability to reproduce themselves naturally, if given half a chance. Repro-

J. E. BARTON ACCEPTS POSITION WITH RURAL RESETTLEMENT ADMINISTRATION

Mr. J. E. Barton, former E. C. W. Inspector, recently resigned his position with the Texas Forest Service to accept the position of Regional Forester with the Rural Resettlement Administration, Dallas. Mr. Barton's new duties will be directed at planning reforestation activities on the four resettlement projects for this region, three of which are located in Texas and one in Oklahoma.

Mr. Barton made many friends while with the Texas Forest Service, and his leaving will be a personal loss to many. The Service joins in wishing him every success in his new work.

Mr. Barton will be located in Dallas. When recently interviewed at College Station, he said: "I have enjoyed the many associations I made while with the Texas Forest Service, and hope that these may be renewed from time to time by visiting me at Dallas."

WOODEN BOAT 137 YEARS OLD, AND STILL GOOD

"What is claimed to be the oldest vessel afloat was discovered recently in the Swedish auxiliary schooner Lisa. She was built in 1799, which means that she has reached the hoary old age of 137. Originally built for the Danish Navy, the veteran schooner was hauled out on dry dock recently and it was found that her bottom needed only a little caulking and painting to put her in shape for service. During the early part of her career she ran in the Greenland and Iceland trade and at times called at American shores, though her loading capacity is only 125 tons. Built of Holm Oak, she is as strong as the day she was launched." Gulf Coast Lumberman.

duction after cutting is essential to sustained yield management since the seedlings of today are the sawlogs of tomorrow.

In many cases it may be necessary to reduce the annual cut to assure a sustained yield, or as a alternative it may be necessary to increase the size of the forest to obtain the necessary amount of growth, but in every case of sustained yield management the annual cut must not exceed the annual growth.

TEXAS FOREST NEWS

3

FIRE VIOLATION

(Continued from Page 1, Col. 1)

of East Texas, incendiary fires have been one of the most serious causes of fires throughout this vast timbered area. Through educational measures, conducted for several years now by the Division of Forest Protection, the destruction and damage wrought by forest fires have been brought to the attention of citizens of East Texas. A world of good has been accomplished along these educational lines, and it is only with great reluctance and careful study that the Texas Forest Service has taken means to apprehend the relatively few individuals who still insist in destroying the property of others through forest fires. This strict fire law enforcement seems to be the only solution in such cases, and it is hoped that this policy will be a means of reducing the number of man-caused forest fires.

EDUCATION

(Continued from Page 1, Col. 2)

smithing, Welding, Saw Filing, and others. It is to be understood that the courses handled by the supervisory men are an integral part of each camp's regular educational program which is conducted by a camp educational adviser. Other courses are also offered the enrollees, but they are handled by trained instructors.

The principal objectives of the vocational program are to instill in the enrollees the principles of Conservation; to develop in the men an appreciation of their work, their civic duties and responsibilities; to offer instruction designed to prepare the boys for definite lines of employment after leaving the camps; to increase the efficiency of groups of enrollees engaged on the various work projects; and finally to meet the needs of those who will, after their discharge from the C. C. C., resume high school and college work.

More than twenty times as much plant food is removed from sloping land by erosion than is removed by crops. It requires about four hundred years for natural processes to build an inch of soil. But that same soil can be washed away by a single heavy rain.

C. C. C. POPULAR

(Continued from Page 1, Col. 2.)

vote was counted, the opinion stood thus:

82% in favor of continuing C. C. C.
18% against continuing C. C. C.

Neither from the Atlantic to the Pacific, nor from the Canadian border south to the Gulf of Mexico, did the vote across the country show much difference. Section by section the opinion was:

	Percentage	
	Favoring	Opposing
New England	85%	15%
Middle Atlantic	82%	18%
West Central	80%	20%
East Central	80%	20%
South	83%	17%
Mountain	83%	17%
Pacific Coast	87%	13%

The poll indicates that the C. C. C. is one of the most valuable of all the New Deal activities. In its early stages, however, the C. C. C. was not acclaimed with such enthusiasm. Many viewed the project as a means of increasing the armed forces of the country to 250,000. Others criticized the dollar-a-day wages the enrollees received as influencing the lowering of wage standards for skilled and unskilled labor in other industries. In general, though, as evidenced in the recent poll, these objections have been withdrawn.

The C. C. C. enrollment reached its peak in August, 1935, with 520,000 men working in over 2,000 camps throughout the country. These enrollees receive \$1.00 a day or \$30.00 a month as their wages, and in addition are furnished with shelter, meals and clothing. The greater part, \$25.00, of their monthly earnings, is sent home to the support of their families.

The Texas Forest Service is vitally interested in the C. C. C. Since 1933 the Service has administered from eight to seventeen camps in East Texas with an enrollment of from 2,400 to 4,000 junior enrollees and local experienced men. The present enrollment in the eight forestry camps nearly totals 1,000 men.

The ability to support and produce plentifully and in variety made America great; it must be sustained if America is to stay great. And it can be sustained only if the fountain of productiveness—the soil—is guarded and preserved.

FIRE DAMAGE

(Continued from Page 1, Col. 3)

dry condition in the woods. With the forests in this hazardous condition, fires had often burned over considerable area before the fire protection personnel could arrive to put them under control. Texas Forest Service officials estimate that had it not been for the better organization of the protection forces together with the help furnished by the C. C. C. camps, losses would have been much heavier than indicated.

Fires Killed Many Small Trees

Most of the fires, fortunately, were ground fires and did not get up into the crowns of the trees. However, the ground fires killed many small trees, the future forests of East Texas and the basis of a pulpwood industry for the eastern part of the State. In addition to killing the younger reproduction, ground fires destroyed valuable fertilizer consisting of dead and decayed grass, leaves and litter and other sorts of plant food which might have been used to increase the rate of growth of the present forests.

Most of the fires during the period were caused by smokers, fishermen, campers, brushburners, and the few people who still start fires intentionally. The greatest danger was, however, not from the accidental or careless fires but from the fires that were set intentionally. The strict law enforcement program carried on this year by the Texas Forest Service in cooperation with county officials has resulted in twenty-six arrests to date and it is hoped that this program will reduce the wilful burning of the woods in East Texas.

CIRCULAR

(Continued from Page 1, Col. 3)

Natural Woods Resources Exhibit at the Centennial. The little booklet should furnish interesting and valuable information to out-of-state visitors who formerly had the idea that Texas was just a country of plains and cowboys. In fact this bulletin might prove enlightening to our West Texas neighbors or other Texans who have not had a chance to travel through the forested areas of the State, an area which by the way is 10,000,000 acres larger than the area in any other forested state in the Union, and which supports an industry of third rank in the South.

EXHIBIT

(Continued from Page 1, Col. 1)

the quarter-saw white oak blends in the rich color of the red gum; and the quaintness of pecky cypress with the beautiful light yellow of the magnolia.

Texas Forestry and Forest Products

As you enter the exhibit you at once feel the friendship of the forest. Large logs from the native commercial timbers bid you to come in. A display of the Texas Forest Service shows the program of conservation and the proper utilization of this great natural resource produced in the forest regions of the state. Need of public support to the program of fire protection is explained to visitors as well as the many other phases of forestry. Conservation by the preservative treatment is shown in one booth, and the manufacture of paper pulp from Southern pines in another. The log cabin tells the story of the pioneer and how he used the native trees to build his shelter and supply the many necessities of life.

These are just a few of the attractions in the forestry exhibit and to really appreciate the exhibit one must pay it a personal visit. The forests of Texas have been moved to the Texas Centennial to show the people of the Nation, as well as the State, that timber is one of the State's richest natural resources and is one of man's most useful friends.

Many Comment on Exhibit

The forestry exhibit has drawn much favorable comment and enthusiasm from the many people who have already visited it. Some people have even expressed their appreciation of the exhibit in letters and below are quotations from two of them.

"The exhibit as a whole, stands out as something distinctly different from anything of its kind anywhere. Just a few days ago I had the pleasure of escorting through the exhibit a gentleman from Chicago who advised me that he had been in the Government Forest Service for something over twenty years and his statement concerning the exhibit was this, 'The most magnificent showing of forestry wood that I have ever seen and much credit is due to those who have conceived the exhibit, as well as the architects who have planned it and carried the plans to completion; no single

SASSAFRAS
(*Sassafras variifolium* (Salisbury)
Kuntze)

This small, aromatic tree is usually not over 40 feet in height or a foot in diameter. It is common in Texas west



SASSAFRAS

Twig, one-half natural size.

Leaf and Fruit, one-third natural size.

to the Brazos River on the drier soils, and is one of the first broad-leaved trees to come up on abandoned fields, where the seeds are dropped by birds. It is closely related to the camphor tree of Japan. The bark of the tree is

detail seems to have been overlooked.' Every mill owner, every mill manager, every wholesale and retail distributor of lumber in Texas especially, should take advantage of the opportunity to visit the Centennial in Dallas and take the time to inspect, firsthand, the forestry exhibit. When they have done this, they will be thoroughly satisfied and enthusiastic.

"The Mill Managers Association, the Texas Forest Service, the Texas Forestry Association, the architects, the Centennial Central Exposition whose cooperation made possible the allocation of the space for the exhibit, each deserves unqualified praise for the part played in making this magnificent forestry exhibit possible. My hat is off to each organization."—Sincerely, L. H. Lewis, Assistant Director, Texas Natural Resources.

A Lumberman Speaks

Selecting a letter from the lumbermen, Mr. R. M. Eagle, Vice President, Saner-Ragley Lumber Company, Carmona, Texas, says this after his return from an inspection of the forestry exhibit at the Centennial.

red-brown and deeply furrowed and that of the twigs is bright green. The leaves are very characteristic. It is one of the few trees having leaves of widely different shape on the same tree, or even on the same time. Some are oval and entire, 4 to 6 inches long; others have one lobe, resembling the thumb on a mitten; while still others are divided at the outer end into 3 distinct lobes. The young leaves and twigs are quite mucilaginous.

The flowers are clustered, greenish, yellow, and open with the first unfolding of the leaves. The male and female flowers are usually on different trees. The fruit is an oblong, dark blue or black lustrous berry, containing one seed and surrounded at the base by what appears to be a small orange-red or scarlet cup at the end of a scarlet stalk.

The wood is light, soft, weak, brittle, and durable in the soil; the heartwood is dull orange-brown. It is used for posts, rails, boat-building, cooperage and for ox-yokes. The bark of the roots yields the very aromatic oil of sassafras much used for flavoring candies and various commercial products.

"Although I had somewhat familiarized myself, through committee work, with what to expect, I really had no imaginative idea of how wonderful this exhibit really is until I made the personal inspection of it. It is impossible to adequately describe it. It must be seen to be appreciated.

"It is my opinion that the foresters and lumbermen have scarcely, if ever, contributed to a program that so well depicts, describes and advertises our forest resources and manufactured and refined products therefrom as does this exhibit. All timber and lumbermen and every private citizen should not fail to see it."

Forest products rank tenth in value of the big ten in farm crops throughout the Nation. Farm woodlands pay their owners nearly \$63,000,000 annually.

Conservation of the soil is largely a matter of using the land in accordance with the dictates of Nature.

Texas Forest News

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STATE F. F. A. CHAPTERS ADOPT FORESTRY PROGRAM

A statewide representation of several hundred Future Farmers of America in a meeting recently held at John Tarleton College, Stephenville, gave formal recognition to the forest resources of the State by adopting a forestry program for their local chapters to follow. R. A. Shaw, supervisor of F. F. A. Area 7 with headquarters at Nacogdoches, served as chairman of the forestry committee of the convention, and he is due much credit for his efforts in formulating the adopted forestry program. Mr. Shaw was assisted, in part, by a representative of the Texas Forest Service. The forestry program as adopted consists of the following:

1. Forest Survey of Community.
2. Establishing F. F. A. Chapter Tree Nursery.
3. Beautification of School Campus and Farm Homestead.
4. Sponsor School in Fundamental Forest Practices for Community.
5. Sponsor Educational Tour to Forest Demonstration Areas.
6. Sponsor Arbor Day Program for Community.
7. Sponsor Forestry Visual Educational Shows for the Community.
8. Sponsor Educational Booth in Forestry.
9. Exhibit Forestry Work Accomplished at Annual Project Show.
10. Sponsor Forestry Improvement Contest.

Several F. F. A. chapters in the piney woods of East Texas have been carrying on forestry activities for some time. The chapter at Zavalla, Angelina County, established a tree nursery last spring for the purpose of producing stock to be used by the members of the chapter and for planting on the school grounds. Through the operation of this nursery, the members of the local chapter learn the methods of propagating and handling nursery grown stock, from the seeding of the nursery beds in the

See F.F.A. PROGRAM on Page 4



Seventy-eight year old longleaf pine home on R. R. Marsh's farm in Polk County. The wood is almost as sound today as when first put into the building back in 1858.

PROMINENT ETEX LUMBERMAN ATTENDS INTERNATIONAL FORESTRY CONGRESS

Mr. E. L. Kurth, vice-president and general manager of the Angelina County Lumber Company, Keltys, Texas, and president of the Southern Pine Association, sailed from New York on August 27 for Europe where he will attend the International Forestry Congress in Budapest. The American delegation of which Mr. Kurth is a member consists of eleven foresters and five lumbermen. The Congress convenes in Budapest on September 10-17 and following the regular session, members will make field trips to interesting forests and scenic regions of Hungary. This is the second meeting of the International Forestry Congress, the first having been held in 1926 in Rome.

Mr. Kurth is also the Forestry member of the Texas Planning Board and during his two months' absence in Europe, Director Siecke of the Texas Forest Service, upon the invitation of Chairman W. M. Massie, will attend meetings of the Planning Board.

OLD HOME DEMONSTRATES DURABILITY OF LONGLEAF PINE

"I believe the wood is as good as it was when the home was first constructed, and should remain so for another seventy-five years at least." Such was the remark made by Mr. R. R. Marsh, farmer of the Bold Springs community, near Livingston, Polk County, in commenting on a seventy-eight year old pine home which still stands today on his farm.

The old home has an interesting background. It was constructed by Mr. Marsh's grandfather, using slave help, in 1858. Foundation timbers, 12 x 12 inches square, were hand hewn out of longleaf pine. In fact, every piece of wood in the house is longleaf pine. Nails were a luxury in those days and consequently all the material had to be held in place with wood pegs. Even the roof of split pine boards was pegged. In the intervening years the old house has been reroofed once; otherwise no other repairs have been made on it. Outside of the fact that the dirt chimney has fallen away causing some of the

See OLD HOME on Page 4

PUBLIC CAN SUPPORT FOREST FIRE PROTECTION PROGRAM

The protection of the forests from fire has been one of the most important advancements made in forest conservation during the past twenty years.

The words "fire protection" in their fullest sense mean not only the suppression of fires, but also the prevention of fires. Prevention, then, is the fundamental factor assuring proper protection. Development in a program of prevention means that a constant program of education must be carried on. Forest education does not mean the development of the uneducated, nor does it in any way refer to class or station in life. Forest education affects the people as a whole, and simply tries to show the importance of the forests. Not only does it tend to enlighten the public concerning the damage done by fires, but it covers the fields of forest utilization, recreational development, forest finance and a host of other fields.

Since forest fire prevention affects the masses as a whole, a concentrated effort has been made to show why fire should be prevented in the forest.

Timber is a creation of Nature, and unsurpassed in its value to mankind. One forest fire can so cripple this handiwork of Nature that many years will pass before the wound is healed. Forests were put here for the service of man, and no other natural resource can begin to compare in its ability to continue its usefulness. A tree cut down and its products used has created a value. Does this space occupied by the cut-down tree cease to be useful; it does not. Nature reseeds this spot and soon a new tree starts to grow. This growth will be rapid, if fire is kept out of the woods.

To you who have lived in the timbered area of East Texas and know the value of timber, stop and reflect a few minutes and ask yourself the question: "Has not the timber at some time aided me in making a living; has it not helped in the development of the community, helped to build churches and schools, as well as pay the bill made necessary by progress?" All through the timber belt, progress and development have been proportional to the forest resources. Trees are one of man's greatest friends; fire is the tree's worst

enemy. Since 99% of all fires are man made, and therefore preventable, we as citizens need to bend every effort to see that less fires are started in the piney wood of East Texas. It is man's solemn oath to protect and conserve those things that Nature has so freely bestowed upon him.

An old forest slogan, "Forest fires are a creator of nothing, and a destroyer of all," is a slogan well said. Future generations will need timber, as well as the past generations needed it. The job is on the shoulders of this generation and we cannot fail. Forest conservation is a public enterprise and needs the whole hearted support of the public.

New uses for wood are constantly being found. Wood chemistry is opening a vast new field for the production of products made from wood. Recent surveys have shown that East Texas is rich in timber resources. It has the soil and the climate so necessary to timber growing. The potential growing power of East Texas timber lands is unsurpassed. Present industries can be sustained, new ones can be created, providing that forest fires are prevented, and our timber wisely utilized. Timber is a crop, a renewable and continuous natural resource. Keep it growing in Texas, and the state as a whole will reap its full share of benefits.

BLUE SAP STAIN OF PINE

Blue sap stain, or blue stain as it is frequently called, is caused by a fungi which attacks the sapwood of pine, imparting to it a bluish color which is considered as undesirable in finished lumber and accounts for the degrading of considerable quantities of lumber annually. It is generally recognized that blue stain does not affect the strength of the infected wood and is permitted in certain types of construction material.

Dr. Charles Herty, famous pulp and paper expert, has found that pulp made from blue stained wood requires less bleaching to produce white pulp than pulp made from non-infected wood. He believes that blue stain acts toward the pulp very much in the same manner as the bluing used by the laundress to wash clothes.

Now comes a further account of an apparent defect being converted into a desirable asset. According to the

TREES, NATURE'S WEATHERMEN, PREDICT DROUGHT NEAR END

The nineteen year drought, which started in 1917, is near an end. This prediction is not made from a weatherman's report, but is based on a thirteen year study of the growth records of trees that date their birth back some 800 years. In other words, it is the tree that is Nature's weatherman.

And here's the proof as evidenced from a study made by F. P. Keen, forest entomologist, Portland, Oregon. The study, stated Mr. Keen, based upon the annual growth rings in trees, shows that trees respond to wet and dry weather differently. During wet seasons the tree makes accelerated growth and the annual rings are far apart, while during dry seasons the growth is limited and the growth rings are nearer together.

A study of the cross section of these trees, many of which were 800 years old, reveals that major dry cycles occur at 100-year intervals, but that the average wet and dry cycles are about twenty-one years in length. On this basis, therefore, our present drought period which is nineteen years old now should be about over.

The value of such long range prediction of general weather conditions is far reaching. Should this method prove reliable its use and application in long time planning for agriculture, soil conservation, and such like, would remove many of the uncertainties and risks involved.

August, 1936, issue of "The Timberman", Mr. William Zosel, a sawmill operator in Oregon, is saving blue stained lumber which he converts into window and door casings and sells under a trade name of "blue trim" pine. This material is sold at about a cent a foot more than the best clear items.

"After sanding, the material is rubbed with kerosene, followed by an application of shellac, and afterward a coat of varnish, which brings out the blue effect with startling results."

Thus Mr. Zosel claims he is able to recover a considerable amount of material which otherwise would suffer the sting of the degrader's mark, or would be left in the woods to be destroyed by bugs and decay.

THE HIGH COST OF EROSION

The Nation incurs a loss mounting into millions of dollars annually from floods and erosion. Part of this loss is incurred to property and crops and is the loss most of us are familiar with. Equally as great, but little realized, is the loss of plant foods in the soil through erosion.

This fact has been emphatically but sadly proven in recent experiments conducted by the University of Georgia. The studies were made on an acre of hardwood forest as compared to an acre of bare land. During a year's time, the loss through erosion on the forest area amounted to only 112 pounds of soil, while on the bare land amounted to 112,316 pounds (56 tons) of soil or over 1,000 times as much! The experiment was carried even further to determine the amount of plant food washed away on each acre. Here the results were more surprising.

It was learned that based on the prices of commercial fertilizers needed to replace the plant food carried away in the eroded soil, the cost of replacing plant foods on the woodland acre would be just five cents a year, whereas such an annual replacement on the bare tract would amount to \$59.15. These plant foods, had they not been washed away, would have been sufficient to make an acre of land yield 50 bushels of corn for four separate seasons.

The above experiment demonstrates Nature's method in controlling erosion by provision of a forest cover and the corresponding fatal result when man upsets this balance. Man can well follow Nature's example. A close integration of forestry, engineering and agricultural interests working towards a coordinated land use is needed, for land is life itself.

**WISCONSIN "FIRE-BUG"
GIVEN PRISON SENTENCE**

Because he set two fires which burned over more than two thousand acres of forest land and caused a \$40,000 loss, Herman Berry, Wisconsin fire warden, was sentenced recently to serve from one to three years in the state prison for his misdemeanor. Berry admitted that he set the fire in order to obtain work.

**ASSISTANCE TO TIMBERLAND
OWNERS**

In order to assist timberland owners interested in inaugurating practical forestry measures, the Texas Forest Service is in a position to make reconnaissance surveys of timber tracts and submit suggestions for the guidance of the timberland owner. This type of work is not entirely a new line of activity as the Texas Forest Service has, from time to time during past years, assisted timberland owners in making growth studies, offering practical management suggestions, and recommending provisions for protection from fire. It is considered important that all possible assistance be rendered to place timberlands on a sustained yield basis so as to build up permanent wood using industries and permanent payrolls. It is obvious that permanent industries such as saw mills, pulp manufacturing units and numerous other wood using activities must rest upon a permanent source of raw material, which in turn can be insured by the production of timber as a crop on timber growing land.

**MISSISSIPPI FIRM UNDER-
TAKES FORESTRY PROJECT**

The Masonite Corporation with headquarters at Laurel, Mississippi, has recently entered into an agreement with the Mississippi Forestry Commission for the carrying on of a forestry project within a twenty-five mile radius of Laurel, and embracing some 1,000,000 acres. The project is unique in that the work will not be done upon the Corporation's land alone, but on lands of farmers and other timberland owners.

The main project the first year will be forest fire control management, utilization, and land use. An effort will be made to get 300 farmers to plant 1,000 trees each, the trees being furnished free from the nurseries of the Masonite Corporation. A forester has been hired by the Corporation to supervise the work which will be under the direction of Mr. Fred Merrill, Mississippi State Forester. The Masonite Corporation will pay two-thirds of the cost, and the Mississippi Forestry Commission one-third.

NACOGDOCHES SLASH PINE

More recent investigations of various slash pine plantations established by the Texas Forest Service in the winter of 1931 and '32 in cooperation with landowners, indicate that this valuable, fast-growing species of southern pine, not native to Texas, can be planted and successfully grown in certain portions of Nacogdoches County.

Proof of this fact is evidenced in the results of a slash pine plantation established in cooperation with the Texas Agricultural Experiment Station, on its Substation No. 11 near Nacogdoches in December, 1931. These 4½ year old pines when measured in June, 1936, averaged over 7½ feet in height, and this height includes trees planted in 1932 to fill in gaps caused by the loss of some trees from the original planting, which would tend to lower the average height. The tallest tree in the plantation is 11 feet high.

Mr. H. F. Morris, Superintendent of Substation No. 11, who had charge of setting out these pines, in commenting on the plantation, stated:

"From general observations and comparisons of trees growing at the Station we have secured a more favorable rate of growth from our slash pine than from our loblolly pine, a species which is native throughout this section. The fact that but a low percent of insect and disease damage has occurred in the plantation during the five-year period is very encouraging toward increasing the slash pine plantations throughout East Texas."

TALLEST TREE IN THE WORLD

The following is quoted from the August, 1936, issue of "The Timberman":

"The Redwood Empire Association has established definitely that the tallest tree in the world grows within the redwood empire.

The tree is the "Founder's Tree", a great redwood in Bull Creek Flat, near Dyerville, Humboldt County California. It is 364 feet high.

Only one other tree is known to have ever exceeded this height. This was an eucalyptus at Victoria, Australia, which attained a height of 375 feet. According to existing records that have just been brought to light, it was destroyed in 1880."

F. F. A. PROGRAM

(Continued from Page 1, Col. 1.)

early spring to the transplanting operations in the late fall.

It is gratifying that such an organization, the Future Farmers of America, has taken this progressive step in formulating a forestry program. With this move, Texas now falls in line with many of the other southern states where forestry has been an integral part of the vocational agricultural program for years.

**CARELESS BRUSH BURNING
DIFFICULT WITH FOREST
PATROLMEN ON THE JOB**

Occasionally there is even a humorous side to the serious job of protecting the piney woods of East Texas from forest fires. The following incident of what happened in northeast Texas is offered as an illustration.

A friend of one of the patrolmen was traveling along a road when he saw two neighbors burning brush. He started toward them with the intention of visiting for a few minutes. Upon seeing him approach, the two brushburners picked up a couple of long poles and started dancing wildly around the fire. Puzzled by these queer antics, the man asked the reason. The answer came, "Oh, we thought you were the forest patrolman and were going to stand you off long enough to burn this brush."

Incidentally, this same patrolman, upon hearing of a man living several miles from him making the remark that he had not seen the "fire fighter", immediately got into his car and went to visit the farmer and talk fire protection. "You are the only man I know of that I have missed," said the patrolman.

This is the type of patrolman it takes to make the work of the Texas Forest Service a success.

**YALE'S COLLECTION OF WOODS
OF WORLD LISTS 32,500 KINDS**

A world-wide collection of wood specimens made by the Yale Forest School of the Yale University of New Haven, Connecticut, now contains over 32,500 specimens, representing more than 10,400 named species of 2,548 genera and 225 families.

**BLACK LOCUST (Yellow Locust)
(Robinia pseudoacacia L.)**

The black locust is not native to Texas, so far as known, but has been widely planted here and has escaped



Leaf and Fruit, one-third natural size.
Twig, two-thirds natural size.

from cultivation to a limited extent. It grows well in all soils and conditions of moisture except in swamps. In the past it was the most common and most successful tree planted in the high plains country. Of late years it has been almost completely wiped out by the locust borer and is not generally recommended for planting.

The twigs and branchlets are armed with paired straight or slightly curvey sharp strong spines, sometimes as much as one inch in length which remain attached to the outer bark for many years.

The leaves are pinnate, or feather-like, from 6 to 10 inches in length, consisting of from 7 to 19 oblong thin leaflets.

The flowers are fragrant, white or cream-colored, and appear in graceful pendant racemes.

The fruit is a pod from 3 to 5 inches long containing 4 to 8 small hard seeds which ripen late in the fall. The pod splits open during the winter, discharging most of the seeds. Some seeds usually remain attached to each half of the pod.

The wood is yellow, coarse-grained, very heavy, very hard, strong and

OLD HOME

(Continued from Page 1, Col. 3)

boards to sag the wood in the home is in practically as good condition now as when first put into use those seventy-eight years ago.

Silent, abandoned, now used mostly for storing tools and other farm implements, the old home stands today, on the one hand, as a monument to the efforts of the early settlers of Texas, and, on the other hand, as a monument to the durability of long-leaf pine when properly used in home construction.

FARM LUMBER REQUIREMENTS

The average farm in the United States used 400 board feet of lumber a year during the past five years. Such were the figures contained in a preliminary report by the U. S. Forest Service on a study made of farm buildings during 1933 and 1934 in some thirty representative counties throughout the country.

However, while the average farm now uses 400 board feet of lumber annually, the estimated normal need per farm more nearly approximates 1,000 board feet yearly. This estimated normal need is based on a depreciation factor of 2½ per cent which considers needed repairs and replacements to farm buildings.

In commenting on the annual lumber requirements for farm buildings, Frank J. Hallauer, Principal Engineer, U. S. Forest Service, states, in part: "These data indicate that for the Nation as a whole the annual farm lumber market for repair and replacement might normally be 2½ times what it was during the 1930 to 1934 period. For 6½ million farms, lumber used annually for the last five years was approximately 2.6 billion board feet, compared with the estimated normal use of 6½ billion board feet. If the delinquency can be so considered, it constitutes at present a pent-up demand of something like 3,000 board feet per farm, or over 19 billion board feet for 6½ million farms."

very durable in contact with the soil. It is used extensively for fence-posts, poles, tree nails, insulator pins and occasionally for lumber and fuel.

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FORESTRY SHORT COURSE TO BE HELD ON STATE FOREST, MONTGOMERY COUNTY

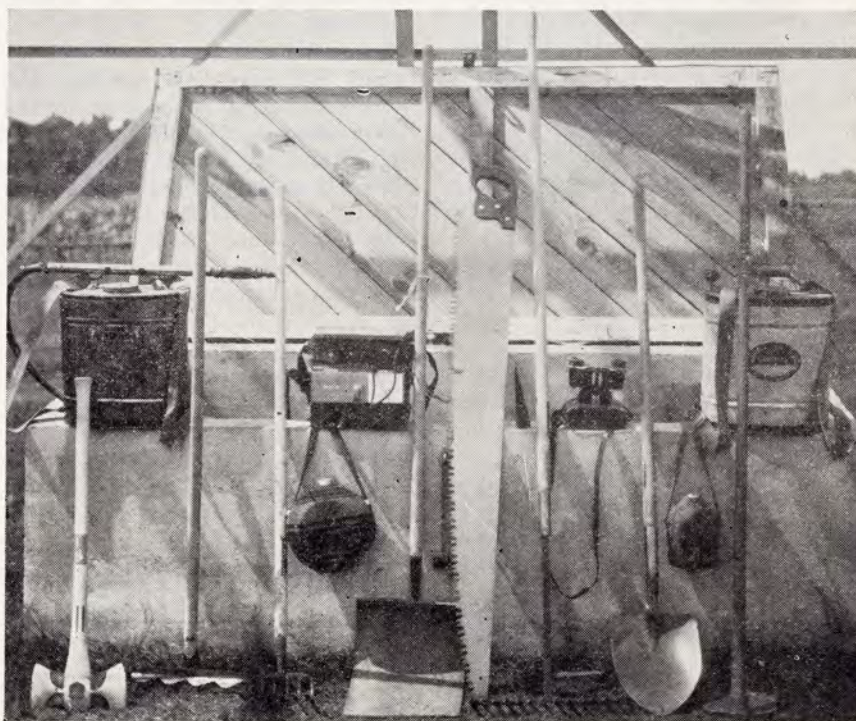
There has been a marked increase of interest among Montgomery County citizens in the management of forest lands for the growing of various forest products such as saw logs, poles, pulpwood and railroad ties. This interest has no doubt been stimulated by the establishment of a large paper pulp mill in Houston, which is only a short distance from the Montgomery County forests. Timberland owners especially desire information on how to manage their forest lands so as to obtain the greatest possible amount of pulpwood and other materials.

At the request of and with the cooperation of the Conroe Chamber of Commerce, the Texas Forest Service will hold a one-day Forestry school for timberland owners of Montgomery and adjacent counties on October 28. The Short Course will be held on the 1634-acre State Forest, 6 miles south of Conroe, where the Texas Forest Service has been conducting forestry research, management and demonstration work during the past eight years. The County Agent of the Extension Service is taking an active interest in the Short Course, and is working with the Conroe Chamber of Commerce on this project.

FORESTRY EXHIBIT AT SOUTH TEXAS STATE FAIR

At the South Texas State Fair, to be held at Beaumont, October 15 to October 25, the Beaumont Chamber of Commerce, cooperating with the Texas Forest Service, will sponsor a Forestry exhibit reflecting the various forestry activities in East Texas.

A miniature forest with fire detection towers and necessary telephone lines will give Fair visitors an idea of the equipment and methods used in promptly detecting and suppress-



Fire fighting tools and other equipment used by the Texas Forest Service in fire protection work in East Texas. Such tool boxes are placed under many of the more recently constructed lookout towers.

NEW JACKSONVILLE TOWER ATTRACTS MANY VISITORS

The new Texas Forest Service fire lookout tower, located at Love's Lookout, five miles north of Jacksonville on the Tyler highway, is attracting many visitors these days.

The tower, which was erected in the early summer by the Texas Forest Service, is one of a system of lookout cabs maintained throughout East Texas for the purpose of detecting and reporting forest fires.

In thirty-five days, covering a period from August 19 to September 23, 1,380 registered visitors have braved the dizzying heights of the 100-ft. climb to gain a better view of the beautiful expanse of forest and field the tower overlooks. Sunday, August 30, saw the greatest

ACTION TAKEN IN FIRE LAW VIOLATION CASES

Tom Burnett of Call, Texas, pleaded guilty to setting forest fires on November 16, 1935, and December 24, 1935, in Newton County. This case was continued five different times, due to failure of defendant to appear. The Texas Forest Service had Mr. Burnett put under a \$300.00 appearance bond. The case was then called on Friday, September 11, 1936, in Justice of the Peace E. C. Rollins' court. Mr. Tom Burnett then pleaded guilty and was fined \$10.00, with costs, \$20.05, total \$30.05.

On March 20, 1936, O. B. McCalley, farmer, fired the woods south of Center in Shelby County. This case was set for September 11 in County Court at Center. County Attorney N. B. D. Bailey was in charge of this

See EXHIBIT on Page 4

See NEW TOWER on Page 4

See FIRE VIOLATION on Page 3

FOREST TYPE MAPS OF EAST TEXAS TIMBERLANDS PLANNED

The need for use of accurate fire control maps in protecting private forest lands of East Texas from fires may result in the Texas Forest Service undertaking an extensive forest type mapping project of the commercial timberlands in the eastern part of the State.

Other states in the southern forest region have already started such a project. Georgia has type maps covering eight million acres of private forest lands. Florida is type mapping 225,000 acres of forest land per month and expects to double this figure in a short time. The project has also been started in North and South Carolina, and other states in the region are rapidly organizing type mapping crews.

Under the present set-up, in other states, C.C.C. enrollees, in crews of two, run strips through the forest at intervals of one-quarter to one-half miles apart, obtaining information on the important forest types, roads, railroads, streams, fire breaks, and topographical features. Other information, such as cultivated lands, various fire hazards, settlements, dwellings, etc., is included in the map.

The procedure of gathering accurate information for these type maps will be of much value in forest fire control. The project, if started in Texas, will be conducted by the Texas Forest Service, using C.C.C. enrollees, in cooperation with the U. S. Forest Service.

LUMBERMEN PROTEST STEEL-ROOFED FREIGHT CARS

Steel-roofed freight cars have been shown by recent investigation to be the cause of serious damage to lumber in transit.

Each summer since the coming of steel-roofed freight cars shippers have been compelled to pay heavy claims to their various customers because of the fact that much of their lumber would become crooked and twisted in transit, due to the intense heat created by this type of equipment.

During the cold winter period, moisture condenses on the ceiling of the steel-roofed car causing a constant

dripping of this moisture upon the lumber while in transit, resulting in serious damage especially to the upper grades.

The investigation revealed that such damage did not occur in shipments made in steel-roofed cars which had been properly sealed with wooden roof lining.

The Southern Lumber Manufacturers' Exchange has notified the railroads serving them that in the future when they are forced to allow any claims on lumber damaged in transit they shall expect the railroad to reimburse them for their loss.

In this connection, the Baltimore and Ohio railroad has issued instructions that cars coming into its shops for repairs, that are not properly lined with wood underneath the roof, must be so treated before being put back into service.

WOOD FOR FUEL AND POWER

German scientists have apparently perfected a method whereby sawdust, charcoal or chipped wood can be converted into gas and used as a substitute for gasoline in internal combustion engines.

The apparatus for the generation of wood gas is placed on the running board or a trailer of the motor vehicle. In its present form the apparatus is rather bulky and inconvenient to handle in heavy traffic; however, a future possibility is the establishment of centrally located generating plants to supply the gas compressed in suitable containers.

It is claimed that three and one-eighth pounds of wood will run a Class B army truck a mile and that any form of wood not exceeding a moisture content of 25 per cent can be used.

Another development is that of heating stoves equipped to burn wood gas. The stoves are no larger than ordinary stoves and the heating efficiency is practically double that of the ordinary methods of burning wood in heaters. It is said that one charge of the wood is sufficient for from 12 to 24 hours depending of course upon the weather.

It is possible that the chemical engineer will cause future generations to value each twig of the forest just as the sawlogs are valued today.

SHELTERBELT TREE PLANTING HIGHLY SUCCESSFUL, REPORT SHOWS

A recent inspection of trees planted in the Shelterbelt zone of the Great Plains region reveals that in spite of adverse drought conditions approximately 20 million trees out of 23,700,000 planted by the U. S. Forest Service in the past two years have survived.

Besides the high percent of survival, many thousands of the trees set out during the 1935 season are now six feet high and are already bringing about a lessening of wind movement within their protective range.

Final figures reported by the Forest Service, United States Department of Agriculture, show that in the years 1935 and 1936, a total of 1281 miles of shelterbelt strips and 6415 acres of farmsteads has been planted with approximately 24 million trees. A total of 4364 farmers participated in these plantings.

SOUTHERN PINE USED IN ROAD CONSTRUCTION

Mr. W. G. Drummond of the Rainier Pulp and Paper Company of Seattle and New York City predicts unlimited prospects for the southern pine and hardwood industry because of wide-spread use of certain wood derivatives for improving unpaved roads.

Wood chemistry has found a new process whereby the natural cement of the tree is recovered from the by-products in making rayon pulp and combined with clay-gravel road soils to form a smooth riding, dustless roadway. The new material is not a substitute for cement and bituminous paving materials but is a binder or stabilizer for improving dirt roads.

During the last summer, approximately 750 miles of roadway were treated in British Columbia, Washington, Idaho and New Jersey. The new material, called raylig, is said to control dust and mud and at the same time materially reduce exorbitant maintenance costs.

Without markets private forestry cannot be justified and public forestry cannot put forest land to economic use.

TEXAS FOREST NEWS

3

FORESTRY PROGRAM ADOPTED
BY VOCATIONAL TEACHERS

No vocational agriculture teaching program in the piney woods of East Texas is complete unless such program includes forestry. This was the opinion expressed by the Conservation Committee at the recent meeting of Vocational teachers at the Stephen F. Austin State Teachers College, Nacogdoches, Texas. With this thought in mind, the Committee drew up the following forestry program which is to be taught by the Vocational teachers of Area 7 during the coming school term:

1. Principles of forest survey.
2. Forest protection methods.
3. Methods of improving farm woodland.
4. Timber estimating and marketing.
5. Nursery practices.
6. Planting methods.
7. Selection and identification of species of trees best suited for farm usage.

In addition to the above forestry subjects to be taught, the Committee adopted a program of forestry activities to supplement the teaching program as follows:

1. Sponsor forestry visual educational shows for the community.
2. Sponsor educational booths in forestry.
3. Sponsor farm forestry improvement contests.

It is particularly fitting that Area 7, of which Mr. R. A. Shaw is supervisor, should be the first to adopt forestry as one phase of its teaching program. Situated as it is in the heart of the pine region of East Texas, Area 7 includes representative schools in the following counties: Panola, Rusk, Cherokee, Shelby, Nacogdoches, Angelina, San Augustine, and Sabine.

A representative of the Texas Forest Service attended the meeting and worked with the Conservation Committee in formulating its program. As the first step in this program the Service has agreed to conduct a Forest Short Course to train Vocational teachers in the forest principles they will use in their various schools. November 7 has been tentatively agreed upon as the date to hold the Short Course.

MEMORIAL FOREST HONORS
AUTHOR OF "TREES"

TREES

*I think that I shall never see
A poem lovely as a tree;*

*A tree whose hungry mouth is pressed
Close to the earth's sweet flowing breast,*

*A tree that looks at God all day
And lifts her leafy arms to pray;*

*A tree that may in Summer wear
A nest of robins in her hair;*

*Upon whose bosom snow has lain,
Who intimately lives with rain.*

*Poems are made by fools like me,
But only God can make a tree.*

It is very fitting that as a tribute to the late Joyce Kilmer, nationally known as the author of the above poem, "Trees", a Memorial Forest has been set aside within the boundaries of the Nantahala National Forest in North Carolina. The Forest comprises approximately 3,840 acres, and embraces within its boundaries one of the outstanding examples of virgin timber in the East.

Establishment of the Joyce Kilmer Memorial Forest was the result of cooperated efforts on the part of the Veterans of Foreign Wars and the Catholic Writers Guild of America with the U. S. Forest Service to honor the memory of Alfred Joyce Kilmer as an outstanding lover of trees.

FIRE VIOLATION

(Continued from Page 1, Col. 3)

case, and the defendant pleaded guilty and was fined \$10.00 and costs, \$25.00, or a total of \$35.00. The defendant was unable to pay, and consequently was sent to jail.

R. C. Helms, on March 20, 1936, set fire to the woods south of Center, Shelby County, said fire being approximately 200 acres. Mr. Helms offered to plead guilty to the Justice of the Peace at Center, but did not have the money to pay the fine. The Court would not accept his plea of guilty, and he was placed under a bond of \$200.00. On September 14 his case was called and he could not be found, consequently the Court ordered that his bond be forfeited.

HUNTING SEASON AND FALL
FIRES

With the advent of fall, and the hunting season, the Texas Forest Service once again calls to the attention of the public the necessity of preventing forest fires. As fall advances and the ground cover becomes drier, the fire hazard increases proportionally. Past records compiled by the Texas Forest Service show that 57% of all forest fires are caused from carelessness, and for that reason a special appeal goes out to the public from the Texas Forest Service to be very cautious with fire in or about forest lands.

The Texas Forest Service has under protection 10,500,000 acres of land throughout which have been erected 73 lookout towers, connected by some 1,200 miles of telephone lines. The field organization responsible for the fire prevention and fire suppression work uses these towers for its headquarters. Watch your local newspapers for the location of the tower in your county as well as the addresses and telephone numbers of the fire fighting personnel. The Texas Forest Service urges the public to cooperate in the prevention of forest fires.

SAFETY FIRST PROGRAM FINDS
TEXAS FOREST CCC CAMPS
IN FIRST RANK

With only 5.9 accidents per thousand men for April, May and June, 1936, and with only one accident per thousand enrollees during July, CCC Camps administered by the Texas Forest Service in East Texas ranked first for the four-months' period over other CCC Camps operated by State and Federal agencies in Region 8, which includes the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas.

Texas Forestry camps have always held a commendable place in observance of safety regulations to enrollees. Much credit for this record is due to the supervisory personnel for training the enrollees in their work in such a manner that the number of accidents is held to a minimum, while at the same time the boys have become more proficient in performing their duties.

EXHIBIT

(Continued from Page 1, Col. 1)

ing forest fires. Material and information from the State Forests will present a picture of the nursery research demonstration and forest management activities conducted on these areas. The section devoted to forest utilization, in addition to samples of numerous forest products, will show a paper pulp exhibit obtained through the cooperation of Dr. Charles H. Herty, Savannah, Georgia, recognized for his outstanding research and development work to stimulate the use of Southern pines in the manufacture of various paper products, including white newsprint.

The booth as a whole is for the purpose of educating and showing the people the necessity of forest conservation. Regional Forester R. F. Balthis, will be in charge to answer questions concerning Texas forestry.

TOWERS AND TELEPHONE**Lines Constructed****IN NORTHEAST TEXAS**

The 100-ft. towers near Hallsville and Beckville have recently been erected, and during the first week of September were connected up by telephone line. The Soil Conservation camps at Bogata, Mt. Pleasant, Marshall, Nacogdoches and Jacksonville, cooperated most heartily with the Texas Forest Service by furnishing 375 men for the construction of necessary telephone lines.

Up to September 7, fifty miles of telephone line have been constructed, and in addition to this, eighty-three miles of rights-of-way have been prepared and are ready for putting in the poles and wire. The work is being done under the supervision of the Texas Forest Service.

During the latter part of 1935 the Texas Forest Service added several northeast Texas counties to its protective area. These new towers and telephone lines are erected for the purpose of quickly and accurately locating forest fires. These towers are open to inspection and the Texas Forest Service extends a cordial invitation to the public to visit and inspect the towers.

PINION (Nut Pine)*(Pinus edulis Engelm.)*

The Nut Pine, or pinion, is found scattered over the uplands and can-

**PINION** (natural size)

yons in western parts of the state. It is a small tree found on warm slopes

or in sheltered locations, and forms a bushy top with orange-colored branch-lets.

The leaves occur in clusters of two needles (rarely 3), and are stiff, stout, curved, dark green in color, and about an inch in length. Each year's crop of needles remains on the tree from 5 to 8 years.

Like all the pines, it has male and female flowers separate on the same tree. The cone, or burr, is rounded, about 1 to 2 inches across, and produces large seeds or "nuts", from one-half to three-fourths inch long. The seeds are rich in food values and form an important article of diet for the Indians. They are gathered and sold widely as fancy "nuts" in many larger towns and cities.

The wood is light, soft, close-grained, and pale brown, used for fuel and

sometimes for fencing. A close relative *P. cembroides* is found scattered in the Texas cedar brakes.

NEW TOWER

(Continued from Page 1, Col. 2)

number of visitors when 260 climbed to the cab.

So far, men and boys have accounted for the greatest number of registrants, but the fairer sex is by no means shy of the climb, and all told make up 35 per cent of those signing in the visitors' book in the cab.

During the period, there have been an additional 800 estimated "would-be" climbers who have started the long journey to the top but on reaching the second or third landing have thought better of the idea. Quite often a "George, you come right down from there," has quieted many a shaking knee and brought "George" to the ground. "George" is only too willing to oblige on such occasions.

Not all of the visitors to the tower have been local citizens. People have registered from many parts of Texas. Out-of-State visitors are not uncommon, either. States represented so far are Oklahoma, Arkansas, Louisiana, Kansas, New Mexico, Alabama, Florida, Missouri, Iowa, Indiana, Ohio,

Michigan, Illinois, California, and New York.

The tower is located on the Love's Lookout Park. The view from this site is inspiring, but when one tires of the inspirations offered by Nature's landscape, he has but to look down upon the new swimming pool, operated across the highway from the tower, to refresh his waning interest.

Forest patrolman William M. Smith, who is on duty at the tower, finds his visitors very much interested in the work of the Texas Forest Service and says that many of them had never realized before just how the Service operated. They leave with a new respect for forestry in Texas. Mr. Smith also stated that many of his visitors are children but that, "I class them as men and women after they have made the climb to the cab."

In the United States 21,000,000 acres have gone entirely out of cultivation because of destructive erosion. This area exceeds the total area of arable land in Japan proper.

Texas Forest News

Vol. XVI, No. 11

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TEXAS FOREST SERVICE

November, 1936

WHY PREVENT FOREST FIRES

(This is the first of a series of articles on, "Why and How to Prevent Forest Fires".)

The commercial forests of East Texas cover an area of approximately 12½ million acres. Shortleaf, loblolly and longleaf pines grow predominantly on 10½ million acres, while southern hardwoods are the most important trees on the other 2½ million acres. This vast timber area comprises one of the State's most valuable natural resources which, unlike minerals, is renewable. The utilization of this forest is playing a large part in the economic development of the State, and particularly the local region in which it occurs. Sound land use policies recognize the fact that a large area of East Texas must support tree growth. If forest fires and over-utilization are held to a minimum East Texas will continue to produce a vast amount of timber.

Fire is considered as a natural enemy of the forest. Every year throughout the United States millions of acres are burned over. In the western states lightning starts many fires, but in East Texas the records indicate that 96 percent of all fires are man caused. In the West lightning fires cannot be prevented and consequently fire protection organizations aim at quick discovery and suppression of them. In Texas, the situation is the reverse and the fire program is directed towards prevention and then suppression.

Fire destroys all of the seed that might be on the ground, as well as all the seedlings, many of the saplings, and often large mature trees. Trees of all sizes may escape but the fire has left its mark. Cat-faces result from fire, and through these scars, disease and insects enter the tree.

After a fire has burned through a pine forest, not many days pass until the needles turn brown and start falling off. These needles manufacture the food that sustains the tree.

See FOREST FIRES on Page 4.



Over 2,000 acres of forest land on State Forest No. 3, near Maydelle, have received stand improvement treatment by the CCC. Here is a typical view of the Forest after such cuttings, which shows the products from the operation, in this case fuelwood, piled for seasoning.

FORESTRY SCHOOL HELD AT CONROE STATE FOREST

Cold, rainy weather failed to halt the one day forestry school held by the Texas Forest Service in cooperation with the Conroe Chamber of Commerce on the State Forest near Conroe, recently.

Timberland owners, manufacturers of timber products and others interested in the timber industry attended the session and studied sample plots marked to show the most desirable method of harvesting. It was pointed out that when a woodland owner harvested his crop, each individual tree should be considered as a unit and should be marketed in the product or products which will yield the greatest return. Complete utilization of the tree was also emphasized and it was shown how poles, sawlogs, ties and pulpwood could be harvested to-

See SHORT COURSE on Page 4.

FOREST STAND IMPROVEMENT WORK ON MAYDELLE STATE FOREST

One of the major projects conducted by the CCC on the Texas State Forests has been what foresters term "Stand Improvement". Stand improvement is, as its name implies, an operation directed at improving the conditions of the forest and generally aims to increase the rate of growth of the trees left after the operation.

On State Forest No. 3, at Maydelle, Texas, much of this type of work has been done in the three years the CCC has been functioning. The Forest has been put in a much better condition by removing the defective trees of little value which were depriving the surrounding trees of soil moisture and sunlight, both elements so essential to growth in trees.

All usable material and products were salvaged as the improvement

See STATE FOREST on Page 4.

PULPWOOD IMPORTS

Figures recently published by the United States Tariff Commission reveal the enormous quantities of both pulpwood and pulp imported into the United States annually.

Preliminary figures for 1935 show that from Canada alone the United States bought 831,065 cords of spruce pulpwood at a cost of \$8.04 per cord or a total of \$6,682,993. This amount is only 3035 cords greater than is shown for 1934, when the average price was \$8.01 per cord. Other species such as poplar, fir, etc., raised the total imports of pulpwood from Canada to 1,037,281 cords for a total value of \$7,760,446, and came into the United States free of duty.

Besides the pulpwood, the United States is also a heavy importer of pulp. For 1935 the figures given show that we bought 1,933,249 tons of pulp at a total price of \$70,734,887 or \$36.59 per ton, which also entered duty free.

The pulp imports include mechanical sulphite, both bleached and unbleached, sulphate, bleached and unbleached, and soda. The largest imports are of the sulphite type which accounts for 1,122,450 tons, of which nearly 700,000 tons are unbleached.

The countries receiving the greatest benefit from these imports were: Austria, Czechoslovakia, Finland, Germany, Poland, Norway, Sweden, and Canada.

TEXAS EBONY EXCELLENT FOR PISTOL STOCKS

Commenting on the use of Texas ebony in the manufacture of pistol stocks, a fire-arm firm in Massachusetts in a letter recently sent to the Texas Planning Board said, in part, "The wood machines excellently and makes an extremely handsome pair of pistol stocks."

The fire-arm firm has completed several sample stocks from samples of Texas ebony and has sent one pair to the Board as a gift.

Texas ebony is considered the most valuable tree species in the lower Rio Grande valley, where it is chiefly used as fence posts and for making buttons and ornaments for ladies' apparel. Its use in pistol stocks should open a new market for the wood.

KNOTTY PINE FOR PANELING

There has been an increased demand recently for knotty pine for interior finish. The popularity of knotty pine may well be attributed to its depth of color-tone, richness and beauty, which never fades. Pine, because of its low density, has good insulating qualities and its permanence and freedom from expensive upkeep make its use for interior finish very desirable.

One of the earliest known houses still standing in this country is the old Fairbanks House, built in 1636 at Dedham, Mass., and is a testimonial to the lasting qualities of pine. The early settlers used pine boarding on the walls and wide planks on the floors. Many of these earliest types of interiors can still be seen today in New England.

Knotty pine stains easily to soft shades of red-browns, tans and yellows. Color is a matter of individual taste but for knotty paneling the popular treatment is to have the wood approximately the color unfinished pine acquires on long exposure to the air. The richness of these shades becomes even more beautiful as the wood mellows with age. Photographic reproductions lack intrinsic character and cannot be considered as substitutes for the real pine paneling.

The initial cost of knotty paneling need not be expensive and when one considers it finishes and partly furnishes a room at the same time, it is within reach of the average home owner. It is always practical and attractive and when once installed all future decorating expense is over. It imparts a warmth and character to a room that grows in beauty and charm as the years roll by.

A recent release through the Division of Forest Pathology, United States Department of Agriculture, states that for the past several years close observation has been maintained for any evidence of injury to young tree seedlings in the seed bed due to watering in bright sunlight. All indications are that no damage results from such watering; in fact noon or just before noon is probably the best time to water to prevent heat injury.

RAGING FOREST FIRES ON WEST COAST UNDER CONTROL**Towns Wiped Out; Hundreds Made Homeless**

Fierce forest fires starting suddenly in Southern Oregon in the vicinity of Coos Bay brought great damage to several communities. The towns of Banden and Prosper were practically wiped out, with the exception of the mills located there. Several logging camps were destroyed.

About 1500 people were made homeless in Banden and Prosper. The Red Cross and other relief bodies went to the rescue and cared for the homeless people. Plans are already under way for rebuilding the towns. The sawmills escaped and it is reported that there will be no trouble to continue employment of the people.

CAN BIRDS START FIRES?

Many fires are started from no traceable cause, and when the fire report is made it is marked "cause unknown". The *American Lumberman*, in its issue of September 12, 1936, under the subject of "Birds and Cigarette Butts", tells of a probable new cause.

"Forest rangers in the California region are wondering if cigarette smoking birds are to be added to the list of fire hazards. They are worried over the discovery of four cigarette stubs found in the remains of a bird's nest in the eaves of a burned building in Dorris, California. Rangers hope it is only a queer bird."

HOMESICK FOR THE PINEY WOODS

Bright lights, tall buildings, paved streets and advantages of cities have lured many folks from the old homestead, but there is always a longing to go back and retrace boyhood steps.

A negro was heard to exclaim, while looking at a forestry exhibit, "Dis smells jist like Jasper County whar I wuz bawn. Um, Um, but dat pine tree sho smells good, and dat turpentine, just like dey used to do around de ole home place. This sho make me homesick for de pine trees and Jasper County." Then with a long sigh and a far away look he went on.

EXPERIMENTAL PLANTINGS OF 30 EXOTIC SPECIES SHOW SLASH PINE BEST SO FAR

During the past ten years, the Texas Forest Service has made experimental plantings of some thirty odd exotic species of conifers and hardwoods. Among the foreign countries from which these exotic species have come are France, Italy, India, South Africa, Japan, Cuba, British Honduras, Yugoslavia, China, Finland, and Austria. The species indigenous to this continent but not found in Texas have come from neighboring countries, such as Mexico, and several of our states from the Atlantic to the Pacific coast.

The only exotic species which has so far shown any promise in these trial plantings is the slash pine (*Pinus caribea*), which grows native along the Gulf coast east of the Mississippi River. Slash pine has many of the good qualities of longleaf pine, producing lumber and naval stores. In some respects, it is superior to native longleaf pine since it is not bothered by "razorback" hogs when young, and further, because it makes a rapid growth during its first few years of life while the longleaf pine is still sending down its taproots and making no height growth.

Slash Pine On State Forest No. 1

The 1.3 acre tract of slash pine planted on the Kirbyville State Forest in 1926 was one of the first plantations of this species in Texas. Today, with a survival of some 50%, or 445 trees per acre, the plantation has an average height of over 24 feet, with an average diameter of 4.5 inches (d.b.h.). The tallest tree is better than 33 feet in height and 6.5 inches in diameter. There are 124 dominant trees over 27 feet tall whose average height is better than 29 feet, and which have grown approximately three feet in height growth each year since planting.

"Why Not Plant More Slash Pine?"

With such an excellent example of rapid growth over a period of ten years, one might well ask, "Why doesn't the Service advocate the widespread planting of slash pine throughout East Texas?" Although slash pine is today the most promising exotic tree which the Service has introduced, it is still too early to predict what it will be like 20 years

hence. In the introduction of exotics it is a fairly common occurrence to have trees make exceptionally rapid growth during the first two or three years and then gradually or suddenly stagnate, becoming stunted and merely holding on to life or dying out completely. In other words, the introduction of exotic plants is at best a slow process, quite often involving many years. This seems to be particularly true of exotic tree species.

However, one thing has been definitely proved; that is, that slash pine will produce an abundance of pulp material in twelve to fifteen years' time in the extreme southeastern portion of the pine region of East Texas where the rainfall is from 45 to 50 inches per year.

For the purpose of more accurately determining the commercial adaptability of slash pine throughout the pine region, the Texas Forest Service has cooperated with landowners in the establishment of 42 plantations of one-half to five acres each. These experimental plantations are well distributed throughout the pine region from the Red River to the Gulf Coast. Present indications show that slash pine planted in Northeast Texas is severely damaged by freezing weather during its early years.

SHIPMAST LOCUST

Long Island, N. Y.—Propagated extensively by the Quakers as early as 1700, shipmast locust, a newly described variety of the locust family, has been found to possess some better qualities than its nearest relative, the black locust. Shipmast locust, unlike the shorter twisted trunks of the common locust, grows tall and straight and as a result makes better fence posts. The wood is more durable and reports of posts being in good condition after 80 years in the ground are not uncommon. Because shipmast locust seldom bears seed pods, it does not reproduce readily, and as a result its range is restricted to the vicinity of Long Island.

The United States Forest Service reports fires have been known to burn for a mile or more at a rate faster than a man can walk. A recent fire burning on the Ocala National Forest, in Florida, ran a stretch of almost 20 miles in a period of about six hours.

NETWORK OF TELEPHONE LINES RAPIDLY SPREADS THROUGH- OUT NORTHEAST TEXAS

Like so many huge spiders, the Soil Conservation Service camps at Mount Pleasant, Bogata, Marshall, Jacksonville and Nacogdoches, and the forestry CCC camp at State Forest No. 3, Maydelle, are rapidly spreading a network of telephone lines over northeast Texas, which, when completed, will connect all lookout towers and personnel of the Texas Forest Service in the protection area there.

From the early part of June to October 12 of this year, these camps have constructed 111 miles of creosoted-pole telephone lines, and have prepared an additional 154 miles of telephone line right-of-way. Approximately 200 miles more of the line remain to be strung to complete the project.

The telephone lines above noted now connect the 100-ft. lookout towers located near Tatum and Deadwood in Panola County, Scottsville and Hallsville in Harrison County, Jefferson in Marion County, Appleby in Nacogdoches County and Timpson in Shelby County. The towers at Maydelle and Neches in Cherokee County also have telephone connections, and it will be but a short time before they are connected with the tower at Jacksonville.

WINDBREAKS REDUCE FUEL COSTS

Trees can be something more than a source of firewood or shade; they can also reduce winter fuel costs in the home around which they are planted.

This was demonstrated through a recent study made by the U. S. Forest Service to determine just what effect windbreak trees had upon the temperature in the houses they sheltered.

The study showed that an unprotected home needs three times the heating requirements of a house protected by trees when both are subjected to cold winds reaching a velocity of twenty miles or more per hour.

The stockmen of Texas have long been aware of the value of trees on the range for protecting their stock from the sharp, cold northers. Many of them have taken steps to provide windbreak shelters by planting trees on selected parts of their range.

DIRECTOR SIECKE ATTENDS STATE FORESTERS' ANNUAL MEETING IN WISCONSIN

Director E. O. Siecke attended the Association of State Foresters' annual meeting held in Madison, Wisconsin, October 28-30. The open meetings were held in the Wisconsin State Capitol. A two-day tour of State forests, forest protection districts, secondary ranger stations, State forest nurseries and the plantations of the Nekoosa-Edwards Paper Company were made on the 29th and 30th.

FOREST TREE PLANTING TIME IS NEAR

One-year old loblolly, shortleaf, longleaf and slash pine seedlings, grown at the two forest tree nurseries maintained by the Texas Forest Service on the State Forests at Kirbyville and Conroe, will be ready for shipment about the first of December.

Planting stock is produced in these nurseries for distribution at cost to landowners desiring to establish forest plantations. The quantity of planting stock available this season will be somewhat limited as it is anticipated that a large percent of the trees will be used in the establishment of a number of demonstration plantings throughout the pine region of East Texas. All requests for pine seedlings should be mailed immediately to the Texas Forest Service, College Station, Texas.

Announcement will be made in the December issue of the Texas Forest News concerning the distribution of trees from the two West Texas tree nurseries, located at Chillicothe and Lubbock.

SHORT COURSE

(Continued from Page 1, Col. 2)

gether from the same tract to the financial advantage of the owner.

At noon a barbecue was given the visitors by the Conroe Chamber of Commerce, which was also attended by the Rotary Club of Conroe. After the lunch the various problems of forestry which concerned those present were discussed and the value of forest fire protection was clearly pointed out by recalling the appearance of the Conroe State Forest in 1924 and comparing it to its appearance today.

DOGWOOD (*Cornus florida* L.)

Dogwood, or flowering dogwood, grows in the forests of eastern Texas, usually under the larger forest trees. It is a small tree, up to 30 feet high and 12 inches in diameter, occasionally larger, with a rather flat and spreading crown and short, often crooked trunk.

The bark is reddish brown to black, and broken up into small 4-sided scaly blocks.

The leaves are opposite, ovate, 3 to 5 inches long, 2 to 3 inches wide, pointed, entire or wavy on the margin, bright green or grayish beneath.



Dogwood

Leaf and Fruit, one-half natural size
Twig, two-thirds natural size

The flowers, which unfold from the conspicuous, round, grayish, winter flower buds before the leaves come out, are small, greenish yellow, arranged in dense heads surrounded by large white or pinkish petal-like bracts, which appear like large spreading flowers 2 to 4 inches across.

The fruit is a bright scarlet "berry", one-half an inch long and containing a hard nutlet in which are 1 or 2 seeds. Usually several fruits, or "berries," are contained in one head. They are relished by birds, squirrels and other animals.

The wood is hard, heavy, strong, very close-grained, brown to red in color. It is in demand for cottonmill machinery, turnery handles and forms. Persimmon has quite similar wood.

With its masses of early spring flowers, its dark-red autumn foliage and bright-red berries, dogwood is probably our most ornamental native

STATE FOREST

(Continued from Page 1, Col. 3)

operations progressed. Over 3,600 cords of wood were cut, of which 3,000 cords were sold as fuel wood, and the remaining 600 used by the Maydelle CCC camp situated on the forest. Also 22,000 telephone poles, 17½ feet long and from 3 to 5 inches in diameter at the small end, have been taken out for use in the Texas Forest Service's new forest protection improvements in northeast Texas. 1,500 posts, 7 feet long, were also removed in the cutting.

In all, over 2,000 acres of forest land on the Forest have received careful "grooming" by this stand improvement work. Gone are the old defective trees that acted as parasites on the better trees. With these removed, the Forest is now in a healthy condition and should make a much more rapid growth in the future.

FOREST FIRES

(Continued from Page 1, Col. 1)

A chemical process, in which carbon dioxide (from air) and water are made to unite in the presence of light and the green coloring in the leaves, called chlorophyll, produces the food upon which trees live. Fire kills the needles and not until these needles grow out again does the tree start to grow. Trees, like humans, must have food to live on and in case they do not get enough, decrease in growth or even die. Therefore, if a forest is to grow at a maximum rate, and be fully stocked, fires must be prevented. Pine needles are the manufacturing plant and must be kept in good condition, and be supplied with the essential raw materials if the tree is to produce a quality product, at a maximum rate and a minimum of cost. By prevention of forest fires the public will make it possible for nature to keep her industries running at full time.

The next article, which will appear in the December issue, will deal with forests as soil builders and fires as soil destroyers, and also show how trees equalize temperatures and reduce erosion.

tree. It should be used more extensively in eastern Texas for ornamental planting.

Texas Forest News

Vol. XVI., No. 12

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TEXAS FOREST SERVICE

December, 1936

JOINT FORESTRY MEETING

Twenty-First Annual Meeting Texas Forestry Association and Dedication of Forestry Division Office Building Scheduled for Lufkin on December 12.

The annual meeting of the Texas Forestry Association and the dedication of the recently completed Division Office building of the Texas Forest Service will take place at Lufkin on Saturday, December 12, according to Association President J. W. Oliphint of Huntsville. The meeting this year will have special significance since it marks the twenty-first year of activity for both the Texas Forestry Association and the Texas Forest Service. The Association was largely responsible for the enactment of the basic forestry law initiating State Forestry work in 1915.

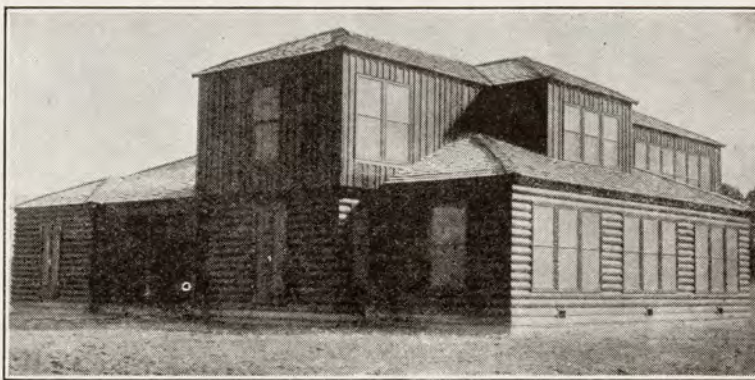
Forestry is rapidly assuming a more important part in private and public activities in Texas. Factors of vital interest to the entire State will be discussed at this meeting. The forestry responsibilities to be administered by the State and those to be administered by the Federal government will undoubtedly be treated in considerable detail together with a discussion of advisable legislation.

One of the pertinent addresses will be that of Mr. E. L. Kurth, President of the Southern Pine Association, who will discuss European Forestry practices and policies and to what extent such procedures are practicable under conditions prevailing in Texas and the Southern Pine region.

The general headquarters of the Texas Forest Service is at College Station. The new office building will serve as quarters for the Division of Forest Protection. Ten of the fourteen rooms are finished in different Texas wood paneling, donated by operating lumber companies of East Texas. The citizens of Lufkin, through the activities of the Chamber of Commerce, provided a splendid building site for the office and two warehouses on the Houston highway one

(See JOINT MEETING on page 4)

NEW FORESTRY DIVISION OFFICE



The new fourteen-room Division of Forest Protection office building at Lufkin is a combination of beauty and efficiency in modern office construction. Texas woods are featured throughout the structure. The new home is to be officially dedicated on December 12 through appropriate ceremonies.

PROGRAM

DEDICATION, DIVISION OF FOREST PROTECTION BUILDING, TEXAS FOREST SERVICE

11:00 A. M.—Division Headquarters, two miles south of Lufkin, on Houston Highway (No. 35).

CHAIRMAN—Senator John S. Redditt, Lufkin

WELCOME—Curtis Fenley, President, Lufkin Chamber of Commerce.

FEDERAL COOPERATION—H. J. Eberly, Regional Inspector, U. S. Forest Service, Atlanta, Ga.

DEVELOPMENT OF TEXAS FOREST SERVICE—E. O. Siecke, Director, College Station.

ACCEPTANCE OF BUILDING—Dr. T. O. Walton, President, Agricultural & Mechanical College, College Station.

LUNCHEON

TWENTY-FIRST ANNUAL MEETING TEXAS FORESTRY ASSOCIATION

2:00 P. M.—Ball Room, Angelina Hotel

PRESIDENT'S ADDRESS—J. Wm. Oliphint, Huntsville

IMPRESSIONS OF FORESTRY IN EUROPE—E. L. Kurth, President, Southern Pine Association, Keltys.

NATIONAL FOREST PROGRAM IN TEXAS—L. L. Bishop, Forest Supervisor, Houston.

PUBLIC RESPONSIBILITY IN FORESTRY—Hon. Edward Clark, Secretary of State, Austin.

IMPORTANCE OF FORESTRY IN CONNECTION WITH WATER CONSERVATION DISTRICTS—C. K. DeBusk, Managing Director, Sabine-Neches Conservation District, Jacksonville.

THE MYSTERY OF THE CROSS TIMBER REGION

Extracts from pages 48 and 49, "OLD HICKS THE GUIDE", by Charles Webber, Harper & Harper, 1848.

January 16, 1839—"Sand-rat country again today. I am more and more convinced that the Cross Timber is a work of art. The growth, since we entered these sterile sand-ridges, is the same we observed as peculiar to it while its course lay through rich bottoms and across level prairie. It is not quite so tall nor so large here; but the trees are the same, nearly all of them the peculiar growth of low lands along the margin of streams.

"It looks as unnatural to me, and as much contrary to the order of vegetation exhibited everywhere else in this country, to see these trees growing here on soil like this, as it would be to see a stream running up hill.

"They must certainly have been planted and nourished by some lost and far-remote nation which peopled this mighty plain, and desired to establish a permanent line of defense or demarcation between its own territory and that of a restless neighbor. How natural such an idea in a country destitute of stone!"

The doctor thought the sand-rats must have planted it, if they were any more numerous in those days than now. The solution of this mystery may well puzzle more sober brains than his.

TEXAS PURCHASE UNITS GIVEN PERMANENT STATUS UNDER U. S. FOREST SERVICE

The four Federal purchase units established in East Texas by the Government in 1934 were proclaimed National Forests by President Roosevelt, October 15. The new National Forests include 1,714,000 acres, of which about 631,000 acres already have been purchased and placed under the administration of the U. S. Forest Service.

Most of the four National Forests are within the fire protection area of 10½ million acres established by the Texas Forest Service. Management of these new areas is expected to furnish practical demonstrations of good forestry practice to the timberland owners and farmers of the eastern part of the State.

NATIONAL FOREST INCOME INCREASES \$774,363

The U. S. Forest Service recently released figures showing a total net income from National Forests of \$4,062,963 for the fiscal year ending June 30, 1936. This amounted to \$774,363 more than was realized for the previous fiscal year.

Authorized timber sales accounted for a total of \$2,161,671 which was an increase of 28 percent over the 1935 figure. Grazing fees, amounting to \$1,433,715, were collected as board for cattle, horses, sheep and goats. This is \$290,280 more than this item produced during the previous year.

The third largest income came from "Special Uses" such as rentals from summer homesites, service stands, and hotels. This group accounted for \$327,982. An additional \$32,556 was collected from the sale of miscellaneous forest products such as Christmas trees, pine cones and seeds, reindeer moss, decorative boughs and gum for production of turpentine and rosin.

In lieu of taxes, twenty-five percent of the total net receipts is distributed to the counties in which the National Forests are located for road and school purposes. An additional ten per cent of the receipts is used by the Forest Service for building roads in the National Forests. In this manner the National Forest communities receive 35 per cent of the total net receipts.

There are approximately one hundred and seventy million acres in National Forests in the United States.

"G" MEN OF ARKANSAS FOREST SERVICE DEAL MISERY TO FIRE BUGS

Members of the Arkansas Forest Service detailed to fire law enforcement duties are rapidly becoming recognized as "G" men. And well they may be, for in a program aimed at reducing forest fires in the state, these men have worked incessantly to apprehend those careless with fire in the woods. In eight months' time this year, 218 fire law violation cases have been filed. Of these, convictions have been secured on 193 and a total of \$1240 collected in fines. Nine cases are still pending and only 16 cases have been lost.

NEW PULP AND PAPER MILLS FOR THE SOUTH

During the past year there has been a remarkable shift of the pulp and paaper industry to the South. Over \$50,000,000 has been allocated for pulp and paper mills in the region.

Georgia, South Carolina and Florida will each be the home of two mills, while Arkansas and Texas will get one each. Another corporation which contemplates the erection of a 500-ton daily capacity board mill has sites in Virginia and North Carolina under consideration.

All of the concerns responsible for this development, with but one exception, have had long experience elsewhere in the manufacture of pulp and paper. For this reason, it is not believed that any demoralization of the industry should result from this unusually rapid expansion.

In Texas, the new plant of the Champion Paper and Fibre Company, now under construction at Pasadena, near Houston, it is understood, will be ready for operation about February, 1937. This project will give employment to about five hundred men and will produce daily 300,000 pounds of bleached kraft of the highest quality. About 300 cords of pine from the piney woods north and east of Houston will be required each day. Pine cordwood will be delivered to the plant by truck, rail and barge.

MASSACHUSETTS PASSES BILL TO ACQUIRE HALF MILLION ACRES OF STATE FORESTS

Massachusetts has recently been authorized by its General Court to acquire 500,000 acres for State forests by 1956 at a cost not exceeding 2½ million dollars. Although the money was not appropriated, authorities feel that the Bill in itself will be a great help in securing the necessary funds.

Massachusetts already has 162,000 acres in State forests. When built up to the proposed 662,000 acres, she will own 22% of all the forest land in the State.

The willow tree is believed to have furnished material for Swiss lak-dwellers to weave the first baskets ever made on earth, between 7,000 and 5,000 B. C.

WHY PREVENT FOREST FIRES

(This is the second of a series of articles on "Why and How to Prevent Forest Fires.")

Forests As Soil Builders

Forests have long been recognized as one of Nature's most efficient soil builders. The ground litter is created from falling leaves, needles, twigs, limbs, bark, grass and small undergrowth. This litter is decomposed into humus and the plant foods made available by an intricate process involving bacteria and soil fungi, in the presence of ample moisture and warm air. Conditions for the decomposition of litter into humus are very favorable in East Texas. The building of forest soil is a long continuous process, and in order to supply the trees with plant food this process must work unharmed.

Nature can work for years in building up a rich forest soil, one that will support a heavy stand of timber and grow strong forage plants. But fire can burn through the same area a few times and completely destroy the humus cover and all the organic material it possesses. The destruction of humus, which is so essential to soil building, by fire is the same as growing a crop of cotton or grain and just before harvesting set fire to the field. All labor and expense of producing and the benefits from selling the crop are lost.

Forests Help Prevent Erosion

Forests have long been recognized as an effective agent in preventing and controlling erosion. The effectiveness is apparent in both surface and sub-surface erosion.

Surface erosion is controlled where the land is supporting ample tree growth by breaking up the direct impact of rain with the surface of the ground. The canopy of leaves, needles, twigs and limbs breaks the direct fall of rain drops. The ability of trees to break the impact is of course proportional to the number of trees per acre, and the season of the year. One need only get under a large tree during a rain storm to prove the point.

After the rain comes to the ground, the litter on the forest floor starts to do its work. Vast quantities of water are absorbed by this mat, thereby reducing rapid runoff. The ability of this mat of litter and humus to absorb rainfall is of course proportional to its depth. Again the impact of rainfall has been broken and the possibilities of soil erosion held to

a minimum because the surface mat has absorbed vast quantities of water.

From surface erosion comes the loss of the surface soil which is the life blood of plant growth. On areas where water is eroding the surface, the runoff is loaded down with soil particles. While erosion carries away the soil, fire burns up the humus. Both are enemies to the soil and economic development and conservation of this resource, depend on conquering the enemies.

The root systems of trees running deep into the soil act as binding agents in holding soil particles together. The binding effect of root systems will go a long way to stop sub-surface erosion in hilly country. The root systems of live trees are far more effective than the root systems of dead trees. When the tree has been cut, rot soon destroys the roots, especially the small ones.

Forests Help Equalize Temperature

Temperatures in a forested area are not subject to quick changes like temperatures in open country. In the winter time the trees break the cold winds and aid in preventing sudden changes. Since the wind cannot reach the forest soils so easily to cool them off, temperature changes in the winter time are more nearly equalized. In the summer time, forests shade the ground and keep the soil cool, thereby equalizing the temperatures in timberland areas.

The next article in this series will deal with forests as a valuable natural resource in Texas and the growing of timber as a crop when forest fires are prevented and suppressed.

TREE PLANTING RECORD MADE IN SOUTH

The U. S. Forest Service recently completed the largest annual tree planting program ever undertaken in the South. In the period from December 1, 1935, to May 1, 1936, over 48,000,000 seedlings were planted on cut-over forest lands acquired by the government. Louisiana was the largest benefactor from this program, in which approximately 22,000,000 trees were planted in the State. Mississippi ranked next by planting 20,000,000 trees. Extensive reforestation was also carried on in Texas, Arkansas and the other Southern states in which National Forests are located.

LOG BUCKING CHAMPIONSHIP

Paul Searls of Longview, Washington, successfully defended his international title of Log Bucking Championship which he gained at Vancouver, British Columbia, in 1935. The contest was held at the twenty-seventh Pacific Logging Congress at Eureka, California, October 9.

Mr. Searls' title was challenged by Allen Heyd of Duncan, British Columbia. Searls raced through the 32-inch Douglas Fir contest log in 2 minutes and 57.1 seconds which was faster than his winning performance last year when he bucked a log of the same diameter in 3 minutes and 26.8 seconds.

The trophy, a handsome plaque with the coat of arms of British Columbia and a logging scene done in raised silver, is symbolic of the championship and was donated by the British Columbia Loggers' Association of Vancouver, British Columbia. Space is provided on the trophy for inscribing winners' names for the next twenty years. The trophy is to rest with the duly accredited association as determined by the winner and a replica is given each year to the winner.

FOREST MOVIE USEFUL IN EDUCATION OF YOUTH

Forestry educational training is recognized as essential in teaching the youth to protect and properly use the forests of the State. In carrying on the educational program, the Texas Forest Service recognizes the necessity of reaching both white and colored schools. The following is a note of appreciation received at College Station from the teachers of Granger Hall rural school (colored) in whose school a forestry movie was recently shown by one of the two motorized motion picture units operated by the Service in East Texas:

"We the teachers and pupils and patrons of Granger Hall Rural (colored) School wish to express our profound appreciation for the 'forest movie' your hired man, Mr. Long, gave us on the 19th inst.

"We enjoyed it immensely and the educational value is inexpressible. Also the high ideals to which our youths will be led to inculcate for themselves. Thanks!"

JOINT MEETING—

(Continued from page 1)

half mile south of the Lufkin city limits. One of the warehouses was constructed with Federal CCC funds.

Senator John S. Redditt, who, together with other legislators, was instrumental in securing funds for the construction of the office building, will preside at the dedication program.

A cordial invitation is extended to Texas citizens to attend the Lufkin meeting and participate in the dedication of the Division headquarters and the proceedings of the Association. Membership in the Association is not necessary. The program will be found elsewhere on this page.

AUSTRALIA'S ANCIENT TREES

An article appearing in the October issue of the "Timberman" under the above title would really be a scoop for Mr. Ripley.

"Queensland, Australia, boasts of possessing the oldest living thing in the world. It is a macrozamia tree about 20 feet in height and estimated to be more than 12,000 years old.

"In the Tamborine Mountain reserve, Queensland, there is a grove of macrozamia trees, the youngest of which, only three feet in height, is 3,000 years old. Accurate scientific date on the macrozamia trees of Australia has been collected and established by the University of Chicago."

We should never complain about the growth in our Texas forests.

RIVIERA MAPS WAR TO CURB FOREST FIRES

Citizens of Nice, France, appalled by the terrific loss incurred through forest fires which have swept the Riviera in recent years, are making plans to curb the menace.

The program includes cutting fire lanes along roads and through the woods, and forming syndicates which will organize fire fighting units to cooperate with civilian and military authorities.

The forest area of France is 24,420,000 acres.

PERSIMMON

(Diospyros virginiana L.)

Persimmon is a well known tree throughout its range. It is small, rarely exceeding 50 feet in height and 18 inches in diameter, occurring in the state as far west as the Colorado River. It prefers dry, open situations, and is most abundant in old fields,



Persimmon

Leaf and fruit, one-half natural size. Twig, three-quarters natural size.

though it occurs on rich bottom lands.

The bark of old trees is almost black and separated into thick, nearly square blocks, much like the black gum.

The leaves are alternate, oval, entire, 4 to 6 inches long, dark green and shining above, paler beneath.

The small flowers, which appear in May, are yellowish or cream-white, somewhat bell-shaped, the two kinds occurring on separate trees; the male in clusters of 2 or 3, the female solitary. They are visited by many insects.

The fruit is a pulpy, round, orange-colored or brown berry, an inch or more in diameter and containing several flattened, hard, smooth seeds. It is strongly astringent while green, but often quite sweet and delicious when thoroughly ripe. It is relished by both man and animals, especially after a few frosty nights.

The wood is hard, dense, strong, the heartwood brown or black, the wide sapwood white or yellowish. It is particularly valued for shuttles, golf stick heads, and similar special uses, but is not of sufficient commercial use to warrant its general encouragement as a timber tree.

LUMBER MANUFACTURES BENEFIT FROM FIRE PROTECTION

Lumber grades are directly proportional to log grades. Oftentimes the large butt logs are degraded from fire scars.

When fire burns through timber, a loss is sustained, regardless of size and age. Trees that have been boxed for turpentine suffer a heavy degrade by fire. Trees that have been tested for "board trees" are also severely degraded. Insects enter the tree through these scars, and channel their way around through the wood. A "fat" place is often the result of a fire scar. Rich streaks and insect channels always degrade lumber and timbers. Where a mill is cutting high grade timbers, often its very choice logs have suffered from fire and cannot be cut into timbers. Whenever a log is cut for timbers, and then because of a hidden fire damage defect, is salvaged as lumber, the mill operator loses. Fire scarred timber may often change an operation from what looked to be a profit, to a loss.

Fire passing through virgin or mature second growth timber has not been looked upon by many as a forest evil. But careful survey shows that fire takes its toll in any class of timber, regardless of age, density or species. Timber operators throughout the South have suffered tremendous losses due to fire. By protecting timber from fire owners will be repaid by maximum volume growth, full stocking of lands and high grade sound saw logs. Timber is a crop. When properly logged and protected, it will reward the owner with a continuous income. Protect timber; it is the heart of the lumber industry.

NEW ACREAGE LISTED FOR COOPERATIVE FIRE PROTECTION

The Long Bell Lumber Company, with sawmill at Doucette, has just listed 1946 acres for cooperative fire protection with the Texas Forest Service, in Protection Unit No. 8. The Unit is located in southeast Tyler County and at present has 85,363 acres of forest land signed up for cooperative protection. Timberland owners recognize that in order to grow high grade timber at maximum rate and keep their lands restocking, forest fires must be excluded.