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TEXAS FOREST FIRES DECREASED IN 1938

Despite the fact that rainfall was considerably below normal in the most hazardous fire months last year and that the area protected was increased by over 300,000 acres, a fewer number of forest fires occurred in the East Texas piney woods in 1938 than in 1937, according to the annual forest protection report of the Texas Forest Service. The number of fires totaled 5,985, which was 458 less than in 1937 and over 800 less than in 1936. The total area burned last year was 149,485 acres, or 1.6 percent of the gross area protected.

The East Texas protection area was increased by 324,853 acres during the year. A total of 20,717 acres were added in Hardin County and 210,970 acres, never before protected, were added in Harris County just north of Houston. An additional 93,166 acres of private land within national forest boundaries were turned over to the State for protection by the Federal Forest Service. At the end of 1938 the gross area being protected in East Texas amounted to 11,284,271 acres.

At the end of the year eleven companies were contributing towards fire protection on 573,145 net acres in five protection units lying in portions of ten counties. The contributing acreage was increased by 46,680 acres during the year. By cooperative agreement these companies contribute to the State one-half the total cost of protecting their lands. The balance of the protection unit funds is provided by the State and Federal governments.

Increased support from the East Texas public was gained during the year. Over 5,000 citizens helped of their own free will in fighting forest fires. The value of this assistance has been conservatively estimated to amount to several thousand dollars if the State had paid for their time. In addition a total of 1,424 volunteer

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GROUND BROKEN FOR NEWSPRINT MILL

In January, 1939, E. L. Kurth, president of the Southland Paper Mills, Inc., broke the ground to start construction of the first mill in Texas and the nation to manufacture newsprint from southern pine. The mill site has been named Herty in honor of Dr. Charles Herty, who developed the process of making newsprint from southern pine on a commercial scale and, as a result, visioned a new era of industrial expansion for the South. Herty is located about four miles northeast of Lufkin, in Angelina County. It is expected that the construction work on the mill will be completed by the end of 1939.

Test Run of Texas Pine Made

Early in February, Mr. Kurth and Albert Newcombe, treasurer of Southland Mills, were in Savannah witnessing a test run of newsprint from Texas pine being manufactured at the Herty Laboratory. Fifteen cords of pine, selected at random from the holdings of the Southland Company, were sent to the laboratory for the test, producing about 20 tons of newsprint. After the run, officials said: "The conversion of Texas pine pulp into newsprint is no longer a problem."

PLANS MADE FOR NEXT YEAR'S FOREST FESTIVAL

Jean Shotwell, president of the Texas Forest Festival Association at Lufkin, announced that at a meeting of the directors and stockholders plans were laid to hold the second annual Texas Forest Festival for six days in 1939, dates to be October 9-14.

Commenting on the results of the first Texas Forest Festival, Ed. C. Burris, former managing director of the Association, recently resigned to accept a position as manager of the

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CONGRESSIONAL COMMITTEE ON FORESTRY MEETS IN SOUTH

A dominant note of private ownership initiative characterized hearings before the Joint Congressional Committee on Forestry at Jacksonville, Florida, late in November. Landowners from seven southern states, whose holdings range in size from several hundred to more than 200,000 acres, impressively described their faith and their accomplishments in forest growing in the South, notwithstanding numerous problems, chief of which is the hazard of loss by fire. With but two exceptions, they opposed federal regulation of private timber management.

The hearings were held before Representatives Hampton P. Fulmer, of South Carolina, Wall Doxy, of Mississippi, and Walter M. Pierce, of Oregon, with Representative Fulmer presiding. Of the 300 people attending the hearings, sixty testified before the Committee, including, in addition to landowners, representatives of forestry and related fields of conservation, industry, and various organizations and groups interested in land management in the South. Among them were F. A. Silcox, chief of the Federal Forest Service; T. Guy Woolford, president of the Georgia Forestry Association; Representative Millard Caldwell, of Florida, and William P. Good, of the American Pulpwood Association.

Outstanding in the testimony were the reports and recommendations of state foresters of seven southeastern states. These recommendations, presented to the Committee by State Forester Frank Heyward, Jr., of Georgia, called for an increase of Clarke-McNary authorization to $9,000,000 a year—$6,500,000 to be immediately appropriated—for cooperative forest fire protection, half of which would be expended in the

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FOREST RESOURCES REPORT FOR NORTHEAST TEXAS RELEASED

The forest survey report for northeast Texas has just been released by the Southern Forest Experiment Station, New Orleans, Louisiana. The release is based on a field survey made April 13, 1935, to August 24, 1935. Three field canvasses of the forest industrial plants to determine forest drain have been made and the last one was completed in January of 1938. The counties included in the northeast Texas report are Red River, Bowie, Cass, Morris, Titus, Camp, Franklin, Wood, Upshur, Harrison, Marion, Gregg, Smith, Panola, Rusk, Cherokee, Henderson, and Shelby. The total land area covered by the survey is 8,622,100 acres, of which 46 percent or 3,946,200 acres is forest.

Land in small farms is the leading type of ownership. According to the 1935 census, there were 79,000 farms in the unit containing 6,165,000 acres or 72 percent of the land area. These farms average 78 acres each, 26 acres of which were wooded. The total acreage of these farm woodlands amounts to 2,068,000 acres or 62 percent of all the forest lands. Cotton is the principal cultivated crop. Between 1924 and 1937 the cotton acreage was reduced by 35 percent or 556,000 acres. The survey report states that a large part of the 700,000 acres of idle or abandoned land should be used for timber production.

Description of the Forests

The forests of northeast Texas are largely second-growth, typically found in small tracts intermingled with cultivated land. Of the forest area, 78 percent is in the rolling uplands, 10 percent in the swamps and small stream bottoms, and 12 percent in the main river bottoms. Shortleaf and loblolly pine mixed with hardwoods form the characteristic forests of the upland, while red gum, red and white oak, and various other hardwoods occur in the river bottoms. The two pine species are well distributed throughout the upland pine area although shortleaf is much more abundant, particularly upon the higher hills and ridges. Along the western and northern edges of the unit, the pine-hardwood stands are replaced by nearly pure hardwood, chiefly scrub-by post oak. The river bottom hardwoods are found mainly in the bottoms of the Red, Sulphur, Sabine, Angelina, Neches, and Trinity Rivers.

Ninety percent of the total forest area is stocked with second-growth timber, two-thirds of which is of sawlog size. Less than 100,000 acres of old growth pine remain and most of this is in small, widely scattered tracts often only a few acres in extent.

Volume Estimates

The estimate of volume in board feet contained in sound, sawtimber trees, as measured by the International ¼-inch Rule, which very closely approximates green lumber tally, was 8,715,900,000 board feet on January 1, 1937. To be included in this estimate, hardwoods must be at least 13 inches in diameter at breast height (d.b.h.) outside the bark, and pine and cypress 9 inches. Also, all trees must contain at least one 12-foot butt log or have 50 percent of their gross volume in sound material. Top diameters vary with the limits of usable material, but no hardwood logs less than 8.5 inches in diameter at the small end or any pine logs less than 5.5 inches were included. It is estimated that the annual growth in board feet by the International ¼-inch Rule in 1937 was 553,500,000 board feet. During 1937 the wood requirements of the various forest industries and local users amounted to 645,000,000 board feet of trees of sawlog size, which exceeded growth by 91,500,000 feet, or 17 percent. This left a net volume on January 1, 1938, of 8,623,800,000 board feet.

Cordwood Volume

The estimated cordwood volume, as of 1935, includes the entire stand of sound trees at least 5.0 inches, d. b. h., outside bark, and in addition the net sound volume in cull trees 5 inches, d. b. h., or larger. In 1935 the net volume in all sound material was estimated to be 54,311,200 cords. Of this amount 32,512,400 cords were classified as pulping species, of which 22,991,500 cords were pine and 9,520,-900 cords were hardwood.

Pine Poles and Piling

The pine trees suitable for poles and piling occur singly or in scattered groups throughout the forest. From 20 feet on up there were estimated to be 12,808,000 trees suitable for poles or piles, of which 38.6 percent were 20 feet in length, 26 percent 25 feet, 20.1 percent 30 feet, 7.5 percent 35 feet, 5.5 percent 40 feet, 1.6 percent 45 feet, and 0.7 percent 50 feet or over.

Forest Industries

In 1937 there were at least 330 sawmills operating in the unit. Only five of these mills had a capacity of more than 40,000 board feet a day. Although small portable mills, sawing 1,000 to 19,000 board feet daily, were more numerous, nearly half of all the lumber produced in 1937 was cut by the 24 mills having a capacity of 20,000 to 39,000 board feet per day. The total lumber production was 331,000,000 board feet, of which 87 percent was pine and 13 percent hardwood. Logs cut within the unit furnished 292,000,000 board feet of the total, while logs imported into the unit for manufacture of lumber furnished 39,000,000 board feet. Logs shipped to sawmills outside the unit amounted to 61,000,000 board feet. The survey found about 300 sawmills having a board foot capacity of less than 20,000 feet per day. Nearly 100 of these were located in Smith, Anderson, Cherokee, and Nacogdoches Counties in the southwest part of the unit. Also a concentration of about 50 small mills was found in Red River and Bowie Counties in the extreme northern part of the unit. The majority of these small mills are extremely mobile, moving frequently from one tract to another. About 70 percent of them are powered by tractors and old automobile engines, while 30 percent use steam power. The cut of the individual mills varies greatly, but the average for all mills in this class was 364,000 board feet during 1937. Their total cut was 109.6 million board feet, equal to 33 percent of all lumber produced in the unit.

During 1937 there were 16 veneer plants operating in the unit manufacturing veneer, baskets, boxes, etc. The 16 plants consumed slightly over 23,000,000 board feet of wood during 1937, of which 9 percent was pine, 72 percent red gum, 8 percent black gum, 9 percent cottonwood, and 2 percent other species.

Shingle mills are numerous in this part of Texas, especially in Cass, Harrison, Morris, Marion, Shelby, and Upshur Counties. In 1937 there were at least 50 of these small plants producing shingles, chiefly from second-

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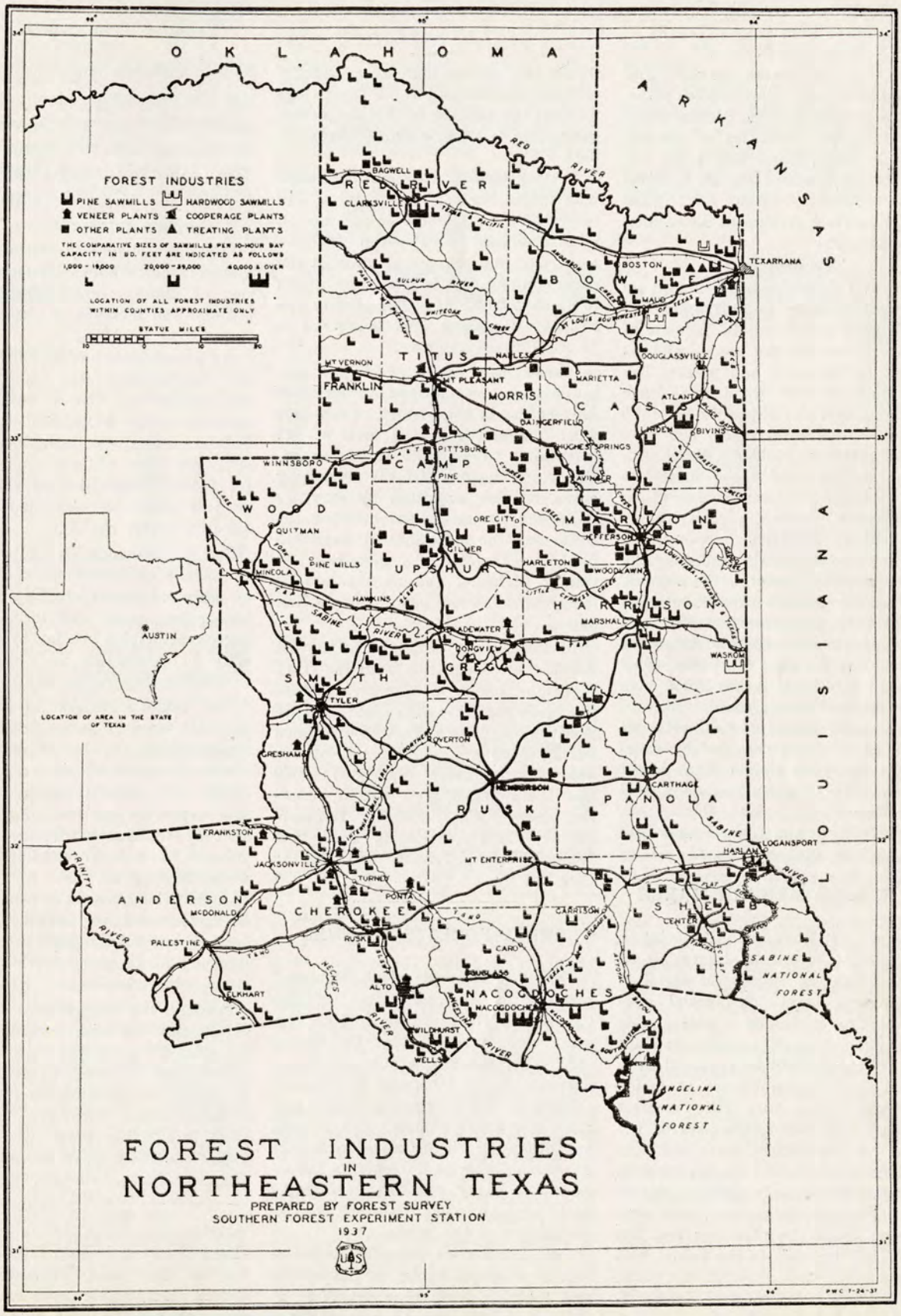

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RESOURCES—

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growth pine. There was one stave and heading mill and one handle plant. There are three treating plants which purchase large quantities of lumber, crossties, poles, piles, and posts for preservative treatment, which is mostly pine secured throughout East Texas as well as from Arkansas, Louisiana, and Mississippi.

Employment

The total employment furnished by the forest industry in 1937 amounted to 2,885,000 man-days; 67 percent of this work was in the woods and 33 percent in the mills and plants. The production of fuel wood and fence posts required the expenditure of 45 percent of the total labor, but very little of this work yielded a direct cash return, as most of these materials were produced for home consumption. Employment yielding a cash income amounted to 1,578,000 man-days, of which 63 percent was provided by the lumber industry. Based on the requirements of the present forest industries, it is probable that forest employment will approximate 3,000,000 man-days per year for the next ten years, equivalent to 12,000 man-years if 250 days are considered a full year.

A complete report of the northeast Texas unit can be obtained by writing the Southern Forest Experiment Station, New Orleans, Louisiana, and requesting Forest Release Survey No. 40, or writing to the Texas Forest Service, College Station, Texas.

A. F. A. TO MEET IN MARCH

The American Forestry Association will hold its 64th annual meeting on March 22 at the Mayflower Hotel in Washington, D. C. A special one-day meeting launching a nation-wide forest fire protection program is planned. This event will be featured by a special Forest Fire Dinner at which will gather not only the foremost foresters and conservationists of the nation but legislators, state and government officials, and representatives of organizations interested in forest fire prevention, protection, and suppression. Both the meetings and the dinner will be open to the public, and members of the Association, along with their friends, are cordially invited to attend.

1938 FIRES—

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forest fire guards signed agreements to help prevent and fight fires. This brought the number in this unique organization to slightly over 3,000 members.

The educational work was continued with increasing effort. A total of 517 combined forestry lectures and motion picture shows were given by two motorized motion picture units in the rural communities in the piney woods to an attendance of 85,000 people. The forestry programs were presented in 23 East Texas counties.

Investigation of forest fire law violation cases was pushed harder than ever before in the history of the Service. During the year a total of 122 complaints were filed with 68 convictions being secured. Of the remaining cases, 2 were acquitted by jury, 14 dismissed by agreement between the State and the defendant, 3 dismissed due to technicality, 8 dismissed by county officials, and at the end of the year 27 were pending, awaiting action.

In the spring of 1937 the Forest Service, in cooperation with the C. C. C. camps, began making an accurate fire map of the area protected in East Texas. This work was continued during 1938 and at the end of the year approximately 4,000,000 acres had been mapped, lying within Anderson, Bowie, Cass, Hardin, Houston, Jasper, Liberty, Newton, Polk, San Jacinto, Tyler, Trinity, and Walker Counties.

HERTY FORESTS PLANNED

"Herty Demonstration Forests," planned by the associates of Dr. Charles H. Herty in slash pine forestry and approved by Dr. Herty before his passing, are to be designated as Herty Memorial Forests according to the Mississippi Forest and Park News. Individuals, club groups, and others are being asked to establish these living monuments as tributes to Dr. Herty, and to give forestry training and demonstrations to individuals and the public.

The Mississippi forestry commission is cooperating in the movement and supplies slash pine seedlings at production cost. At the December 2 meeting of the commission, consideration was given to supplying a suitable marker for each memorial forest placed along public roads in the slash pine section of Mississippi.

MEETING—

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South; authorization under the same Act for an annual appropriation of $1,000,000 for research in, and control of, insects and tree diseases; and other cooperation under the Clarke-McNary Act to include authorization and adequate appropriations for work in aiding non-farmer landowners to manage their timber lands, distribution of planting stock to non-forest owners, and increase of authorization therefor to $500,000.

An appropriation of $2,500,000 under the Norris-Doxy Act was also recommended, as was an annual appropriation of $5,000,000 under the Fulmer Act, with stipulation that fifty per cent of any appropriation for federal acquisition of $10,000,000 or less shall be expended for acquisition under the Act.

The recommendations further called for the establishment of a system of adequate forest credits for forest landowners, small and large, operating on principles similar to and possibly in connection with the Farm Credit Administration set-up.

The state foresters advocated, in general terms, a unification and strengthening of the forestry provisions under which farmers may receive ACP benefit payments. They also supported the idea of the extension of community forests. On the subject of federal regulation, they were definite in their recommendation that Congress defer consideration of government regulation of timber cutting on private lands until public agencies have gone further in fulfilling obligations.

Among the suggestions made to supplement the program advanced by the state foresters was a proposal that the federal government lend money to states for distribution among the counties to tide them over the necessary income shortages which might follow modification of the ad valorem property tax.—American Forests.

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CUTTING TREES OF SMALL DIAMETERS FOR SAW TIMBER UNPROFITABLE

In growing timber as a crop one of the most important factors to assure a fair average profit on investment is to eliminate the cutting of trees with small diameters, unless their removal is necessary to open up the stand or cut out crooked, limby, or otherwise defective trees.

Many timberland owners, when making timber sales, permit the cutting of all pine timber down to 8 inches in diameter at the stump. Such a procedure is contrary to good forestry practice and results in low returns for trees of small diameters and a long period of time between harvests.

The following table shows by comparison the actual results from cutting trees of different diameters into sawlogs and how volumes and values increase by adding two inches in growth to present diameters.

Volume and Value of Pine Trees of Different Sizes

Diameter Breast High (inches)	Total Age (years)[1]	No. 16-ft. Logs	Volume, Bd. Ft. Doyle Rule[2]	Value per Tree At $5 per M	Value Added By 2" Increase In Growth	% Increase In Value Added By 2" Increase In Growth
8	26	1	10	$ .05	——	——
10	33	2	30	.15	$ .10	200
12	40	2	60	.30	.15	100
14	46	3	124	.62	.32	107
16	53	3	178	.89	.27	43
18	60	3	250	1.25	.36	40
20	66	4	370	1.85	.60	48
22	73	4	480	2.40	.55	30
24	80	4	620	3.10	.70	29

[1] Total Age is based on a diameter increase of 3 inches in 10 years.
[2] Board foot volumes are approximations.

The table indicates that when a tree 8 inches d. b. h. (diameter breast high) is cut into sawlogs, its stumpage value, at $5.00 per thousand board feet by the Doyle Rule, is only 5 cents. The same tree cut when it is 10 inches d. b. h. is valued at 15 cents or a value increase of 200%. The same tree cut when it is 12 inches in diameter has increased in value 500% or an average of 125% for each additional inch of growth. And again, if the 8-inch tree is permitted to grow to a 16-inch tree, the value has increased from 5 cents to 89 cents, or 17½ times. This 84-cent increase occurred over a 27-year period or one year longer than it took to actually grow the 8-inch tree.

Such results indicate that the timber owner should set his minimum diameter limit as high as possible and in most cases no trees under 14 to 16 inches in diameter 4½ feet from the ground should be cut. However, the limby, crooked, defective, and slow growing trees should be removed regardless of diameters, leaving the high-quality fast-growing trees for future harvesting.

Timber is a long time crop, but once a stand has been placed under intensive management by practicing selective logging and making periodic light cuts, it is possible to make a harvest every 5 or 10 years, and sometimes oftener. Timber growing is a business, and the application of hit and miss methods is just as disastrous as in raising cattle, banking, or running any other type of industry.

PRUNING HELPS CLEAR LUMBER PRODUCTION

Pruning stands of young pine trees will greatly improve the quality of the lumber they produce. A study along this line has been made by the Forest Products Laboratory of Madison, Wisconsin, on northern white and red pine in the North and loblolly, shortleaf, slash, and longleaf pine in the South, and showed that artificial pruning materially increased the amount of clear wood produced.

Under natural conditions in the more closely stocked stands the death of the side branches from lack of sunlight is the first step in the process of producing clear lumber. Through a period of disintegration and decay, frequently exceeding the lifetime of a man, the dead branches gradually weaken and break off, leaving irregular stubs of varying lengths that often protrude from the trunk for many years before they are grown over. Later, when the trees are cut for lumber, these persistent branch stubs appear as knots and sometimes cause serious degrade in the lumber produced. The dead branches which are the primary cause of degrade in lumber persist in the northern and red pine much longer than in the southern pine. The average length of time required for branches to fall off from the first 20 feet of white pine trees is twenty-seven years, while that of slash and longleaf is but six years. By removing these dead lower branches earlier in the life of the tree artificial pruning increases the amount of clear high-grade lumber produced.

No figures are available on what can be expected in Texas from pruning pine stands. However, the Texas Forest Service has initiated a pruning project on State Forest No. 2, Conroe, in order to determine the advisability of pruning pine stands. Whereas no definite recommendation can be made as yet, it is felt by officials that the small owner may be able to properly prune his pine trees and produce a better quality lumber.

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FEBRUARY HOTTEST MONTH

February may have been the coolest month in 1937 according to the thermometer, but it was the hottest according to the forest patrolmen of the Texas Forest Service who report that more fires occurred then and a greater area burned over than during any other month of the year. Approximately one-third of the area burned by fires all year in East Texas was burned then. The area amounted to 43,292 acres.

The reason for the heavy loss in acreage in February has been attributed to an excessive period of dry weather which lasted twenty days. Dry north winds, sweeping in heavy dust storms, increased the hazard on the 16th and 17th of the month and climaxed the disastrous spell with 226 fires which burned over nearly 20,000 acres on those two days alone.

Of the twelve months in 1937, January was the most favorable showing only a total area burned of 2,881 acres. May, which in the past has been the month that offered forest fire fighters a breathing spell, was unusually severe, and over 15,000 acres were burned. The month was marked by a lack of rainfall, amounting to over 3½ inches below normal.

The summary by months for 1937 follows:

Month	Area Burned, Acres
January	2,881
February	43,292
March	14,277
April	7,206
May	15,444
June	4,434
July	10,061
August	12,074
September	3,510
October	5,130
November	4,617
December	7,122
Total	130,048

1938 SOUTHERN PINE CONE CROP POOR

The 1938 cone crops of the southern pines are for the most part poor or a failure; those of slash and shortleaf pines are particularly scanty, the Southern Forest Experiment Station of New Orleans announced late in November after receiving and compiling reports gathered throughout the South by a number of cooperating agencies.

The longleaf cone crop is fair to medium in southeast Mississippi and light to medium in central Louisiana, but poor in northeast Florida and up the Atlantic coast into North Carolina, and very poor in west Florida. Inland throughout the longleaf pine type (including Texas) the crop is poor to light, with small, isolated spots of better production.

The loblolly pine cone crop is fair in central and southwest Georgia and apparently also in north Alabama. One reporter notes an excellent crop on the east shore of Maryland, especially on young trees. In southeast Virginia, the Carolinas, and south Alabama and Mississippi, the crop is light to poor, but small areas show a fair local production. The crop is generally poor or a failure in west central Alabama, south central Mississippi, northwest Louisiana and Texas.

A fair crop of shortleaf cones is reported in New Jersey, and there is a moderately large area of light to fair production in northeast Georgia. There is a slight spotty production in the west half of North Carolina, northeast Alabama, and east Tennessee, and apparently also in Oklahoma. Throughout most of the shortleaf range, however, the crop is poor or a failure.

TIMBER AS CASH CROP IN POLK COUNTY STRESSED

The importance of timber as a cash crop in Polk County was stressed in the annual report given by County Agent W. S. Childers. In 1938 the total cash value of the cotton crop, including government payments, was $379,080, or an average of $198.26 for each grower.

The timber crop, representing sale of logs to mills, yielded $478,332, a difference of $99,252. The county agent pointed out that while revenue from cotton stops after the cotton is sold, timber brings its greatest profit to the county after the logs are sold. The 1,480 people employed by mill companies were paid $1,073,844.48 during 1938. The average wage of the mill hand for the year was $725.57, as compared to $198.26 derived from cotton.—Houston Post.

FESTIVAL—

(Continued from Page 1, Col. 2)

Shreveport, Louisiana, chamber of commerce, has this to say: "The Forest Festival rendered a definite service to timber dependent industries of East Texas, calling to the attention of the people the vital need for preserving Texas timber. Texas Forest Service officials report an increased consciousness on the part of the people of the value of timber and a new desire for its preservation. Thus the work has just started and must be carried on for a number of years. It was reported by old timers that the largest crowd ever to visit Lufkin came here during the Festival."

CITIES DEVELOP TAX DELINQUENT FOREST PROPERTY

Many towns and some other groups can make good use of tax delinquent submarginal lands to develop valuable forest properties that pay for themselves and serve as work reservoirs for city and rural areas.

The idea of community forests is not new as there are already 1,097 towns and counties in twenty-seven states that have such forests covering an area of 2,889,605 acres. They produce timber and fuel, protect watersheds, and provide recreation and wild life refugees. A town in Europe without a forest is an exception, and many continental cities have depended upon community forests for income and employment for generations. These forests offer a splendid opportunity to develop unskilled labor in nurseries. The use of unskilled labor has yielded good returns from timber stand improvement. In periods of unemployment, cities with forests can put men to work and be reasonably certain of obtaining returns to cover labor costs.

States that have enacted legislation authorizing the acquisition of town or county forests include Massachusetts, Wisconsin, New York, New Jersey, New Hampshire, Vermont, Pennsylvania, Indiana, Ohio, and Minnesota.

Forestry departments in these states act in a supervisory capacity, provide planting stock from state nurseries, assist in fire protection and technical supervision, and select timber to be marketed by local authorities.

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1939 NAVAL STORES PROGRAM APPROVED

Conservation of timberland resources, encouragement of their economic use, prevention of wasteful exploitation, and improvement of fire protection are among the objectives of the 1939 naval stores conservation program. This program, which has been approved by the Secretary of Agriculture, was developed by representatives of the American Turpentine Farmers' Association, the Agricultural Adjustment Administration, and the U. S. Forest Service, and will be administered by the Forest Service.

Gum naval stores farmers in North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas may participate in the program and may earn payments for working only the larger trees. Through the 1939 program, turpentine farmers are being encouraged to obtain a sustained yield from their turpentine farms. Provisions of the program require minimum cutting operations and the leaving of seed trees for restocking purposes.

The conservation requirements of the naval stores program, which have been in operation for three years, are based upon research and experiments made over a period of many years by the Forest Service, the Bureau of Chemistry and Soils, and other agencies.

NEW STATE FORESTER

According to recent announcement in "American Forests," Don J. Weddell, formerly in charge of forestry experiments at Alabama Polytechnic Institute, has been appointed as state forester of Georgia to succeed Frank Heyward, Jr., who becomes southern conservation director for the American Pulpwood Association. At the same time Governor-Elect Arthur H. James of Pennsylvania announced the appointment of G. Albert Stewart, a Clearfield publisher, to succeed Dr. J. F. Bogardus as secretary of the State Department of Forests and Waters.

RADIO TO AID IN DISASTERS

A wireless system over which word of approaching danger could be flashed throughout the state will be developed by Pennsylvania as a protective measure against forest fires and disastrous floods, according to an article in the "American Forests" magazine.

Centering in Harrisburg, the network will embrace short-wave low-power transmitters located in each of the state's 242 fire towers, with automatic relay transmitters at numerous strategic points.

It is said that the network will bring reports from the department's weather instruments along the various watersheds to be used in forecasting rising waters. In addition the system would be used for reporting outbreaks of forest fires, issuing special fire warnings and reporting the approach of serious fire weather.

NEW DISEASE IN ELM TREES

America's most esteemed shade tree, the American elm, is now beset with another epidemic killer—a virus disease. Pathologists in the Federal Bureau of Plant Industry find it has killed thousands of elms in the last few years in the middle and lower Ohio Valley. First indications of the disease are a slight shriveling and brittleness of the leaf. This is accompanied by a rotting of the roots and the inner bark of the trunk. Within a few months the tree may be dead.

This is the first time a virus disease has become an epidemic killer on forest or shade trees in this country. Three years ago it appeared in Chillicothe, Ohio, where it has killed more than 1,000 out of about 1,800 elms on city streets and parks. More recently it has become severe in Columbus, Ohio. It was at first thought to be a "city" disease, but it has already been found in the forests of West Virginia. The disease also is known in northern Kentucky and southern Indiana and Illinois.

The disease may have gained a foothold elsewhere. Citizens can be of help by reporting suspected trees —giving locations and symptoms— to the Division of Forest Pathology, Department of Agriculture, Washington, D. C.

NEW MEMBERS ON COMMITTEE

Senator John H. Bankhead of Alabama has been elevated to the chairmanship of the Joint Congressional Committee on Forestry, succeeding former Senator William G. McAdoo of California. Representative Hampton P. Fulmer of South Carolina continues as vice-chairman. The two new members of the Committee were named as Senators W. J. Bulow of South Dakota and D. Worth Clark of Idaho. They succeed former Senators McAdoo and James P. Pope.

COLORING WOOD FLAMES IN FIREPLACE

For those who have fireplaces in their homes and love to sit and watch the flames, scientists have figured out ways of making flames different colors by adding certain chemicals.

Powdered strontium nitrate gives a red color to the flame and copper chloride burns with a green light. These have proved satisfactory either singly or in mixture. Other chemicals sometimes used are barium nitrate or copper sulphate for blue, calcium chloride for orange, and lithium chloride for purple. The powders may be thrown directly on the burning fuel. Pleasing results are achieved by soaking wood or tree cones in a solution of one pound of chemical to one gallon of water dissolved in a wooden tub or earthen crock, after which the fuel should be spread out to dry for a day or two before burning.

FUEL VALUE OF WOOD AND COAL

To the commonly asked question, "What is the fuel value of white oak and hickory as compared with a fair grade of soft coal," the answer is this:

White oak when air dry is about ninety-two per cent as efficient as coal, and the several hickories are from ninety-three per cent to one hundred per cent as efficient. Of the hickories, mockernut ranks highest in fuel value, and water hickory is lowest.

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FORESTRY IN CONGRESS

Early in the Seventy-sixth Congress, which convened on January 3, a proposal to amend the Clarke-McNary Act so as to increase the authorization for cooperative forest fire protection under Section 2 from $2,500,000 to $9,000,000 will be introduced. This increase is in accordance with estimates that complete protection of all forest lands in state and private ownership will cost $18,000,000 and the belief that the federal government should assume one-half the necessary expenses. Another amendment may be included to authorize continuing appropriations of $1,000,000 for preventing and combating attacks from forest insects and forest diseases. This would compare with Senator McNary's bill, S. 2180, which included federal cooperation and financial assistance to state foresters, that they may encourage owners of forest lands to undertake plans for sustained yield production and more efficiently harvest and utilize their timber crops.

Bills introduced in the last session by Senator McNary and Representative McSweeney of Ohio will be reintroduced to remove appropriation limitations and authorize continuation of McNary-McSweeney appropriations for the nation-wide forest survey. An increase in the annual appropriation from $250,000 to an amount comparable with the actual needs is contemplated.

Other matters of importance include a revival of the plan to offer federal credit to the forest industry, and an amendment to the Clarke-McNary Act to increase the authorization for cooperative production of forest planting stock, and to permit distribution of the stock to landowners other than farmers.

SILCOX PRESENTS FOREST REGULATION PLAN

"Federal forest regulation that clearly fits within the democratic pattern in its relation to the various states, and to private timberland owners," was foreshadowed by F. A. Silcox, chief of the U. S. Forest Service, in a paper he delivered at the annual meeting of the Society of American Foresters, held in Columbus, Ohio, in December.

On the principle that if democracy is to work, authority must be focused rather than diffused, Mr. Silcox visioned a system of state-wide committees working in close contact with state foresters and their staffs in which "the authority for decisions would definitely rest with the authorized administrative agency." This in turn would be "subject to check by individuals, groups, county boards, and the like. Every process would be used through meetings and discussions to arrive at mutually agreed upon enforceable regulations before putting them into effect. The minority would be provided with first the right of appeal to arbitration and later to the courts."

Thus, he concluded "forest regulations must come as a result of standards openly arrived at. They must reflect local needs and conditions. They must be flexible and fair. They must protect both local and nation-wide values and services; conserve public interests; safeguard those of dependent communities and the private owner; and provide for decentralized and understanding applications."

BLACK WILLOW
(Salix nigra Marshall)



BLACK WILLOW
Leaf, two-thirds natural size.
Fruit and Twig, natural size.

The black willow is found along streams throughout the State. It rarely grows taller than 50 feet and is frequently found growing singly or in clumps along the water courses. In winter the easily separable, bright reddish-brown or golden, naked twigs are quite conspicuous.

The **leaves** are from three to six inches long and less than one-half inch wide; the tips are very much tapered and the entire margin finely toothed. The leaves are bright green on both sides, turning pale yellow in the early autumn.

The **flowers** are in catkins, the male and female on separate trees.

The **fruit** is a pod bearing numerous minute seeds which are furnished with long silky down, enabling them to be blown long distances.

The **bark** is deeply divided into broad, flat ridges which separate into thick plate-like scales. On old trees it becomes very shaggy. In color it varies from light brown, tinged with orange, to nearly black.

The **wood** is soft, light and not strong. A high grade of charcoal, used in the manufacture of gunpowder, is obtained from willow wood, and it is the chief wood used in manufacture of artificial limbs.

A variety, **altissima Sarg.**, perhaps more common in East Texas, is distinguished by more pubescent branchlets, leaves and leaf stems, and by later flowering and taller growth.

TEACHERS COLLEGE OFFERS FORESTRY INSTRUCTION

The Stephen F. Austin State Teachers College, located at Nacogdoches, Texas, is giving forestry instruction to two extension classes during the present semester.

Mr. W. C. Royle, teacher trainer in Agriculture, is conducting a course at Lufkin, Texas, and Mr. V. R. Glazener, assistant professor of Agriculture, is in charge of similar work at Timpson, Texas.

A course in forestry will be a part of the regular curriculum at the college during the second semester of the 1938-1939 term and will be taught by Professor Glazener.

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NEWSPRINT FROM TEXAS PINES

By E. L. Kurth, President, Southland Paper Mills, Inc.

When Dr. Charles H. Herty spoke at Beaumont three years ago at a wood-use conference held under the auspices of the forestry committee of the Beaumont Chamber of Commerce he said, "My chief interest in the whole situation is to now see mills built in the South, preferably with southern capital, which would take the pine tree, convert it into the final product and keep the profits here at home." This, he declared, would have an inestimable effect in reducing unemployment and raising standards of living in the South.

How unfortunate that Dr. Herty isn't with us today. It has been largely through his work that some $125,000.00 in new pulp and paper mills has been invested in the South in the past two years. Today we are also happy to announce that plans are completed for the first newsprint mill in Texas and in the South.

I have just returned from Savannah, Georgia, where at the Herty Foundation Laboratory, named in honor of Dr. Herty, I saw newsprint made out of Texas pines. This newsprint was processed from a special shipment of 15 cords of pine cut in Polk County.

Development of Forest Resources

The establishment of a newsprint mill in East Texas is another step in the natural development of Texas forest resources. As the Texas Forest Service will point out in this publication, East Texas forest resources are ample. Production of newsprint also requires, besides an abundant supply of timber, cheap and adequate sources of other materials such as water, some chemicals, and oil and gas for cheap power. Texas has an abundance of these secondary resources and the development of any pulp and paper industry in the State affords direct and indirect benefits to the industries that mine and manufacture these materials into forms suitable for use. It may be added also that Texas has extremely adequate transportation facilities.

Finally, there is the employment consideration. Labor is available in more than ample quantities. We figure that we will employ 800 to 1,000 men on a permanent basis. This number of men of themselves is quite an army and when their families and then the indirect industries and establishments operating to supply the needs and wants of human beings are figured in, the aspects of this employment situation become more and more significant. Applying this

(Continued on Page 2)

SOUTHERN NEWSPRINT ISSUE

This issue of the "News" is printed on paper made in the South of southern trees. Pages 1, 2, 7, and 8 are printed on newsprint made of pine trees that grew in Polk County, Texas. This section contains 80 percent pine groundwood and 20 percent semi-bleached pine sulphate pulp. Pages 3, 4, 5, and 6, are printed on newsprint made of 80 percent black gum groundwood and 20 percent semi-bleached pine sulphate pulp. The pine newsprint section is part of the test run of paper manufactured for the Southland Paper Mills, Inc., now erecting a plant near Lufkin, Texas, which will be the first in the South to make newsprint from southern pines. The paper was furnished through the courtesy of Mr. E. L. Kurth, president of Southland, and the Herty Foundation Laboratory at Savannah, Georgia, where it was made.



Symbolizing a new forest industry for East Texas, the above picture shows an area of second-growth pine timber selectively thinned for pulpwood. The overlay picture of the roll of newsprint is an actual photograph of the original roll of pine newsprint on which this sheet of the "News" is printed.

This sheet made from 80% pine groundwood and 20% pine sulphate pulp

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NEWSPRINT FROM TEXAS PINE

(Continued from Page 1)

same yardstick to the rest of the South, which we may rightly do, it is evident that development of the pulp and paper industry will do much to elevate the South from the No. 1 economic problem section of the Nation.

Dr. Herty visualized these benefits when he said, "Development of this industry is going to mean the elimination of one-room houses for families, better food for those who are living on cornbread and occasional meat, and better clothes for those who go in rags today. On the great coastal plains a great mass of the population in the midst of the finest paper material has for generations endured the bitterest sort of poverty. Use of southern pine will change this."

Requirements of Newsprint Mill

In order to help you visualize what the newsprint industry will mean to East Texas, let me present a few of the requirements of a 150-ton-a-day newsprint mill. The amount of wood needed annually is not less than 70,000 cords. Slightly more than one cord of wood is needed per ton of paper. Besides the wood, there is also required to produce each ton of newsprint, approximately 100 horsepower, or about 25,000 horsepower a day. Such a mill will use 8,000,000 to 10,000,000 gallons of water daily, which must be clean, pure and free of chemicals.

Eighty percent of the pulp used in newsprint is prepared by mechanical means, by grinding the wood. The balance is produced by the sulphate process which reduces the wood to pulp by chemical cooking. The chemicals required for each ton of finished pulp amount to about 270 pounds of sulphur and 300 pounds of limestone.

The chemical and mechanical pulp is accurately mixed and when it reaches the paper-making machine consists of 99 percent water. It takes less than one minute from the time the pulp passes on to the rapidly moving wire screen and leaves a thin ribbon of pulp, until it passes off a 300-foot long 2,000-ton paper-making machine composed of a series of hollow rotating drier rolls, as finished newsprint. The finished paper has a moisture content of about 8 percent and comes off the falls at a rate of 1,000 to 1,250 feet per minute.

U. S. Newsprint Imports High

In 1937 approximately 77% of all newsprint stock used by newspapers in the United States was imported. This amounted to more than 3,000,000 tons. We hear a great deal of unsettled conditions in Europe and rumors of war. Should war occur in Europe, we would find a very serious situation for the newspaper industry in this country. This should be an additional urge to our citizenship to increase production of newsprint at home and in the South generally. In addition to the newsprint imported, as has been stated, there was imported something like 2,400,000 tons of foreign pulp into the United States, and, as I understand it, this importation was greater in tonnage than the entire production of kraft mills in the South today. We, of course, have had a remarkable development in the kraft and board industry during the past three or four years, but there is still room for a healthy growth.

I made the statement in Beaumont three years ago in an impromptu talk before the meeting that Texas should do the job of developing the newsprint industry. Thanks to the cooperation of Texas publishers, as well as southern newspaper publishers throughout the South and Southwest, to three lumber companies operating in the vicinity of Lufkin and to local Texas investors, as well as to the wholehearted assistance of my New York associates, the mill has been financed.

Texas Newsprint Consumption

It should be interesting information to you that Texas itself consumes more than 110,000 tons of newsprint annually, or more than twice as much as the capacity of the planned mill at Lufkin. That newsprint can be made of southern pine has been proven in the southern paper manufacturing industry.

I quote from an article by Mr. E. A. Charlton, now of Crossett, Arkansas, and formerly an executive of one of the largest paper companies in the United States, printed in "Paper Mill," November, 1938 issue, before southern paper manufacturers at Monroe, Louisiana, these words: "That the South should not only make all the pulp this country imports, but that it also should and could make newsprint, that newsprint can be made in the South with new equipment which will be superior to much of the machinery installed in the older Northern and Canadian mills. We have cheaper power, steam and wood costs, and the North cannot compete with a well-planned southern newsprint industry." Coming from such an eminent source and with such a positive statement, there should be no further doubt as to what can be done with southern pine and other woods in this respect.

Much Cooperation Received

In mentioning those who have very materially assisted in making our newsprint mill a reality, you, of course, also know that the R. F. C. gave substantial and appreciated assistance. Dr. Charles H. Herty of Savannah, Georgia, first appeared before the directors of the R. F. C. in the interest of this development in Texas, and in my opinion did more to convince them of its soundness than any other one person. Therefore, we have an additional reason to be loyal to the memory of this great Georgian, and I truly hope that Texas will recognize its obligation toward the Herty Foundation at Savannah, in the modest way that it has been requested to cooperate. Further, cooperation was secured from the Champion Paper and Fibre Company, one of our great, new pulp companies in Texas. They are to furnish the chemical pulp for our newsprint plant at a satisfactory price to Southland, and this will enable us to make a reduction of one million dollars from the original specifications.

It was a great gratification to me to sink the spade up there at Herty (the name we have given to our newsprint mill site up near Lufkin) in January to start construction on the plant. It's just a big open field now, with the pine woods closing in on it from all sides. Those same pine woods stretch clear to the Atlantic Ocean and form the southern pine region, one of the richest and finest in the Nation. We hope to be turning out about 50,000 tons of newsprint annually within the next year from Texas pine. I feel as if this is just the start, and that soon over the South other "Hertys" will be springing up. What could be a better monument to the man who visioned such an era from the small confines of his laboratory?

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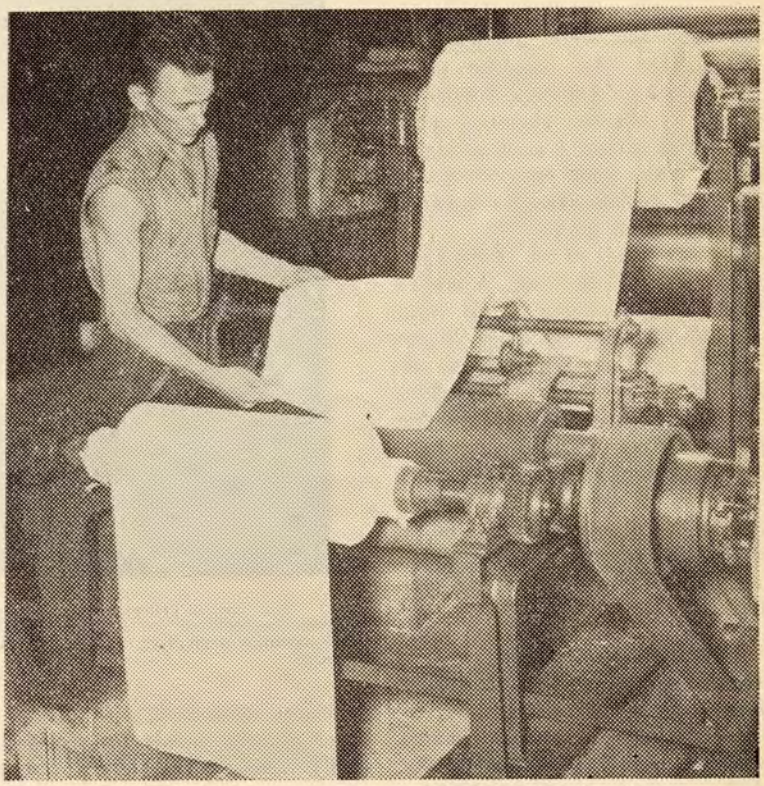
THE HERTY FOUNDATION LABORATORY - - A SOUTHWIDE ENTERPRISE

By Donald R. Brewster, Field Director

In his unselfish desire to improve the impoverished condition of the rural population in the South, the late Dr. Charles H. Herty recognized, as early as the year 1927, the great industrial possibilities of using second-growth pine and hardwood timber for the manufacture of newsprint and other white paper products. Knowing that this country was importing vast quantities of such products, he foresaw the creation of widespread new markets for southern farm timber and farm labor—if wood pulp suitable for white paper could be made from southern woods.

A native Georgian, Dr. Herty was deeply interested in the welfare of the southern people. After a colorful career as a scientist and industrial chemist of international achievements, he gave up an established position in New York in order to spend the later years of his life in helping to raise the standard of living in the South through the development of a southern white paper industry.



Finished pine newsprint paper as it looks coming off the paper-making machine at the Herty Foundation Laboratory at Savannah, Georgia.

Laboratory Established at Savannah

Preliminary studies convinced Dr. Herty that young southern pine trees were free from excessive resin and that pine pulps suitable for newsprint paper could be made by standard processes. He determined to investigate and demonstrate these possibilities on a semi-commercial scale. Obtaining funds from the Chemical Foundation of New York and the State of Georgia, he established an experimental pulp and paper mill and testing laboratory at Savannah, Georgia, on January 1, 1932.

During the first seven years of operation, more than $450,000 has been invested in the equipment and maintenance of this plant. About 60 percent of this amount has come from the Chemical Foundation. The State of Georgia has provided a substantial part of the operating expenses, supplemented by contributions both in cash and in kind from numerous suppliers of equipment and materials and services and from the Industrial Committee of Savannah, the City of Savannah, and the Savannah Electric & Power Company.

Such outstanding results had been achieved, by the end of the sixth year, that it was decided to place the work on a permanent basis. In February, 1938, the General Assembly of Georgia passed an act creating the Herty Foundation. The five trustees of this Foundation are appointed by the Governor. They are entrusted with the funds and property of the institution under supervision of the State Auditor and are empowered to accept contributions from other southern states and from any public or private agencies or individuals.

A Board of Directors is responsible for the conduct of the Foundation's work, including the operation of the laboratory and distribution of its results. This includes the five Trustees, acting for Georgia, with one additional Director from each other contributing state. Results and services are available to the citizens of contributing states and to all other contributors, as well as to engineers and business men interested in building new pulp and paper mills.

Southern Pine Newsprint Made

Concentrating on newsprint during the earlier years, the Herty Laboratory has worked out improved methods of pulping southern pine for both mechanical and chemical pulps. It has proved that a satisfactory quality of newsprint paper can be made from the principal kinds of pine found in the South. To demonstrate this commercially, three carloads of pine pulp were made and shipped to a large newsprint mill in Canada. This pulp was made into paper of good quality meeting every commercial requirement. It was run on a high speed machine without any mechanical difficulties. The paper was then used with entire satisfaction by nine Georgia dailies in the printing of their regular editions on November 20, 1933.

Later work on newsprint has developed improvements in the grinding of mechanical pulps and in the cooking and bleaching of chemical pulps. This has produced fibers of greater strength and pulps with bet-

This sheet made from 80% black gum groundwood and 20% pine sulphate pulp

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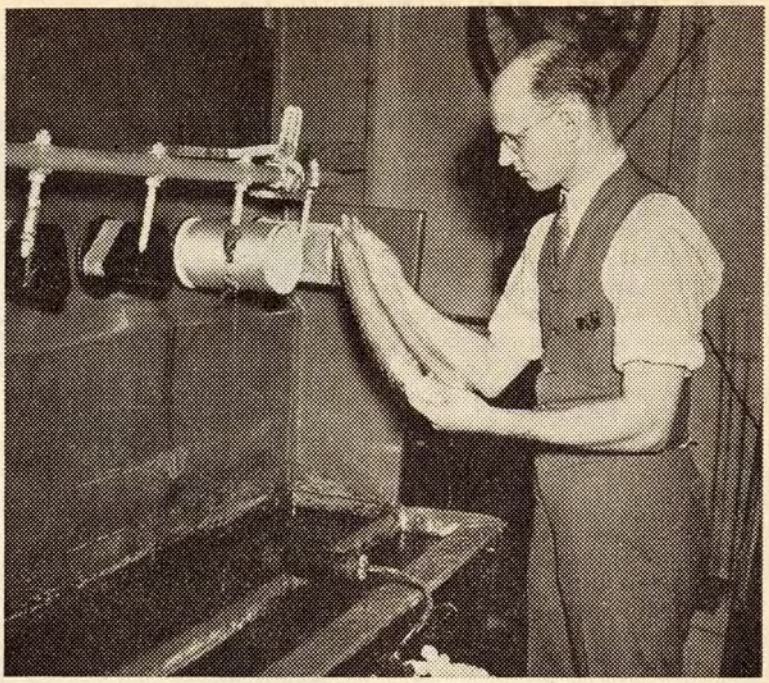
ter paper-making properties. Coarse stones have been shown to be better for the grinding of pine than the fine stones used for spruce. Sulphate pulps made from pine containing considerable heartwood were found to be interchangeable with sulphite pulps made from young sapwood timber in providing a suitable chemical pulp for use in newsprint. A good grade of newsprint was made by combining black gum and cottonwood groundwood with pine chemical pulp.

As a direct result of the Herty Laboratory's work, the first southern newsprint mill is now being built near Lufkin, Texas. Its daily output will supply only one-tenth of the requirements of southern newspapers and for which publishers are paying about $25,000,000 yearly. The Laboratory has cooperated closely with the sponsors of this project in furnishing technical information and in making satisfactory demonstration runs of paper made from Texas pine wood.



It's hard to believe that anything as sheer and delicate as a pair of rayon stockings can be made out of a piece of wood. Yet it's true. Here a chemist at the Herty Foundation Laboratory examines a skein of viscose rayon manufactured from southern pine.

Pulping Hardwoods

Extensive experiments with southern hardwoods have shown that excellent grades of bond, book, magazine and tissue papers can be made from bleached sulphate pulps obtained from black gum, tupelo gum and red gum. Preliminary tests indicate that the same methods will produce similar papers from several other important species of hardwoods, including cottonwood, willow, oak, and pecan. Groundwood pulps of black gum have been found satisfactory for making cheap book and magazine papers, in combination with pine or gum chemical pulps.

Viscose rayon pulps of standard commercial quality have been made from southern pine by the sulphite process. One of the largest manufacturers of viscose rayon yarns in the country found this pulp to compare favorably in every respect with five commercial pulps used in this plant. A plant to make 150 tons per day of sulphite rayon pulp from pine is now being built in Florida.

Much additional experimental work will be necessary in finding the answers to the many technical questions involved in making high quality pulps and papers from southern pine and from the dozens of hardwoods available for pulpwood. Northern laboratories have been studying similar problems concerned with spruce and other pulping woods for many years and still have a full program of work.

Plan Tests of New Species

The Laboratory is now working on a 5-year program of research work laid out by Dr. Herty before his untimely death in July, 1938. This includes a large amount of additional study of chemical and mechanical pulping of both pine and hardwoods. It also covers the bleaching and purification of chemical pulps, paper mill stock preparation and machine operation, chemical studies of waste liquors and residues, and work on air and stream pollution problems resulting from pulp manufacture. Manufacture of high-grade white papers from the South's vast store of low-grade hardwood timber of pulpwood quality will receive particular attention. Work is needed on species of low value such as Texas post oak, overcup oak, black jack oak, water oak, bitter pecan, black gum and tupelo gum. By such work it is hoped that available pulpwood resources can be largely increased, possibly to the extent of hundreds of millions of cords.

The South needs her own pulp and paper laboratory, not only for such research and experimentation but also to supply a continuing need for demonstrating to business men and engineers that southern pulps will serve their purposes as well as imported pulps and will save them money. Without such demonstration the building of new mills will be seriously delayed or curtailed.

Another valuable function of a southern laboratory is for the training of young chemists and engineers in the art of making pulp and paper from southern woods. Technicians with such training are needed both in new mills and those now operating. Fellowships providing for a year of instruction at the Laboratory are to be offered to one candidate from each contributing state each year. The work can be applied toward a Master's degree from cooperating state-supported universities and technical schools.

In order to avoid unnecessary duplication and to develop technical knowledge of the pulping of southern woods as rapidly as possible, the Herty Laboratory is cooperating with other research agencies in this field, including the U. S. Forest Products Laboratory at Madison, Wisconsin, and the pulp and paper laboratories connected with educational institutions

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and manufacturing enterprises. Such cooperation includes comparison of technical procedures and current programs of work, as well as a discussion from time to time of progress and of additional work to be done.

Southern forests contain hundreds of millions of cords of mature pulpwood in the form of low-grade trees of little value for other uses. Such trees should be cut and utilized for the good of the better trees and to make room in the forests for younger and more valuable trees to grow. Other forest industries will benefit from such harvesting. The income from pulpwood will assist landowners to pay taxes and cost of fire protection while the better trees are growing to maturity for such high-quality purposes as sawlogs and poles and piling. Unless cut for pulpwood in the form of thinnings and improvement cuttings, many of the low-grade trees will be lost entirely. All forest industries need a pulpwood market.

New Prosperity for the South

To replace present imports of pulp and paper products to a value of more than $200,000,000, from 40 to 50 new pulp mills would be needed. Southern forests will provide an ample supply of pine and hardwood timber for these mills, particularly if the new mills can be distributed in the many desirable sections where present pulpwood demand is insufficient to furnish a market for current growth. There is a particular need and opportunity for inland mills to make newsprint and other white paper products. Such mills will provide a much needed market for farm timber and a demand for farm labor in districts where there is a crying need for additional farm income.

Steady expansion of both domestic and world consumption of paper products may be expected to reduce the supply available for imports and increase the future demand for southern products. Favorable conditions for low-cost production in the South and for an increased timber production sufficient to supply any conceivable pulp and paper demand indicate that the southern states should eventually be able to replace most of present imports and produce a substantial surplus for export. Such a development will go far toward replacing the shrinkage in the production of cotton and other farm crops which has left so much poverty and unemployment in its wake.

With a pulpwood market, farmers will have an incentive to protect their timberlands from fire and to reforest idle areas not needed for agricultural crops. A competitive market which permits possible shipment to two or more mills is most desirable in creating a fair price for wood and an opportunity to cut it at the right time. More pulp mills are needed to provide this active competition and farmers can be expected to grow the wood to supply them.

All southern states have suitable sites and sufficient pulpwood for one or more new mills. All states have much the same kinds of timber so that research for one serves for all. For this reason the Herty Foundation Laboratory deserves the support of all the states. With such support it will be able to carry on its research work at an insignificant cost compared to the values created and will become, as it should be, truly a South-wide enterprise.

BLACK GUM IN EAST TEXAS

Part of this issue of the Texas Forest News being printed on newsprint composed of 80 percent black gum focuses considerable attention on a tree species which up until recently had been more or less considered as a "weed" tree in East Texas forest stands.

The forest survey of the United States Forest Service has estimated that there is a total volume of 864,100,000 board feet of black gum timber in East Texas. This comprises 24 percent of the total pulping hardwood species volume and 13 percent of the total hardwood volume of both pulping and non-pulping species. Only red gum exceeds black gum in total volume among the ten hardwood species adapted to pulping in East Texas.

Black gum is found as far west as the Brazos River valley, usually on swampy wet soils but sometimes on dry slopes mixed with oaks. The wood is very tough, cross-grained, not durable in contact with the soil, and warps easily. Its chief uses are for basket veneer, box boards, and paper pulp.

TIMBER PRICES MORE STABLE THAN THOSE OF OTHER FARM PRODUCTS

Prices of both standing timber and sawlogs not only have been more stable than prices of other farm products since 1900, but have shown a distinct upward trend, according to a report by the U. S. Forest Service.

Although the price records for different species vary somewhat, hardwood prices have generally increased to a greater extent than softwoods and remained at higher levels during the depression. Softwoods are used principally in building and general construction work, the field in which there is a keen rivalry of substitutes. The decline in softwood stumpage, log and lumber prices from the middle 1920's to 1932 resulted largely from inter-regional competition, reduction in building and construction, and the use of substitutes.

Poor selling methods and lack of knowledge of the markets are among the reasons given for the lack of interest in timber sales by some owners. It is explained that the timberland owner must choose between two methods of handling. Either he can treat the body of timber as a mine to be exhausted by clear-cutting or he can handle the timber as renewable crop which will make the land produce a maximum yield and the largest returns.

Markets for quality products usually can be found readily. It is common to ship veneer and other high-grade logs hundreds of miles. In some instances, choice veneer has been shipped in excess of 2,000 miles.

FIRST STATE FOREST

New York was the first state to undertake public forest administration. The Act of May 15, 1885, established permanent forest preserves in the Adirondack and Catskill regions. The same Act provided for a state system of fire protection and encouraged the practice of forestry on private lands.

This sheet made from 80% black gum groundwood and 20% pine sulphate pulp

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VOCATIONAL AGRICULTURE CLASSES INSTRUCTED IN FORESTRY

The Texas Forest Service cooperated with R. A. Shaw, area supervisor of Area 7, Department of Agricultural Education, in conducting a series of seven county meetings in the area for the vocational agriculture classes during the period of February 13 to 21. The purpose of the meetings was to provide information that would assist the classes in their participation in the annual Forestry Contest for the chapters of Area 7, and to serve as an incentive to additional forestry projects by the individual students on their home farms.

There were 21 schools represented at the meetings by a total of 844 vocational agriculture students. A number of local farm woodland owners were also present at each of the meetings. The complete itinerary and the attendance by counties were as follows: February 13, at Center in Shelby County, 270 students; February 15, at Garrison in Nacogdoches County, 60 students; February 16, at Gary in Panola County, 75 students; February 17, at San Augustine in San Augustine County, 79 students; February 20, at Rusk in Cherokee County, 95 students; and February 21, at Huntington in Angelina County, 214 students.

The theme of the instruction centered on the fact that timber is a crop and that with proper forestry practices the farm woodland will produce a steady and profitable cash income. This theme was developed in a lecture and discussion period that gave a detailed consideration to the growth of the individual tree and the relationships of all the trees that comprise the woodland area.

With this instruction as a working basis the question of what information is needed in order to prepare a farm woodland management plan was studied. Attention was given to such factors as the size and location of the timberland, description of the site, description of the size, kind, amount and condition of the tree growth, and the possibilities for marketing the different products of the timber crop that is to be harvested.

The entire morning was devoted to the foregoing discussion and was followed by a field inspection of one of the local farm woodlands during the afternoon period. At this time the actual composition of a typical farm timberland area was observed. The use of practical forestry tools that can be made at home and the collecting of the information that will enable the farm woodland owner to plan the management of his forest property on a permanent cash crop basis were practiced during this outdoor period.

The day was brought to a close by summarizing the instruction and practice that had been given with the purpose of showing how to make a practical application of the instruction in forest methods toward conducting a woodland management project on the home farms of the vocational agriculture students who attended the meetings.



Almost 300 vocational agriculture students from five Shelby County rural schools attended the one-day forestry course held for them near Center on February 13 by the Texas Forest Service and the Department of Agricultural Education of Area 7. Six other similar meetings were held in other East Texas counties.

LUMBER PRODUCTION OVER BILLION FEET IN 1937

Lumber produced in Texas in 1937 surpassed the billion board feet mark for the first time since 1930. The actual amount produced was 1,125,760,000 board feet, which was 16 percent greater than in 1936 and 34 percent greater than in 1935. Production figures were based on reports from 369 mills as compiled by the Bureau of Census, Department of Commerce.

Texas ranked eighth among the lumber producing states in the Nation and fifth among the southern pine states. The first eight states were as follows: Washington, Oregon, California, Louisiana, Alabama, Mississippi, North Carolina, and Texas.

A total of 959,016,000 board feet of soft wood lumber was sawed in the State, accounting for 85 percent of the total amount of lumber produced here in 1937. On a softwood basis, Texas ranked fifth in the Nation and second in the South.

Hardwood lumber production totaled 166,744,000 board feet or 15 percent of the total, which gave Texas a rank of eleventh in the Nation and sixth in the South.

The Nation as a whole evidenced a considerable increase in employment, wages and value of products in the lumber and timber products industry for 1937. The total lumber cut for the country amounted to 25,996,857,000 board feet, a gain of 6.7 percent over 1936 and a gain of 33.1 percent for 1935.

MICHIGAN WOMEN PLANT TREES

The Michigan State Federation of Women's Clubs is sponsoring a "One Million Pines" campaign and members have nearly reached their goal of reforesting 1,000 acres of Michigan land. This is said to be the biggest project of its kind in conservation ever attempted by women anywhere.

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PULPWOOD ESTIMATES FOR EAST TEXAS

The East Texas commercial timber belt, which includes 36 counties with a gross area of 18½ million acres and a net productive forested area of 10½ million acres, is estimated capable of yielding 67,348,500 cords of pine wood suitable for pulping, according to recent estimates released by the Southern Forest Survey, operating under supervision of the U. S. Forest Service. In estimating this pine cordwood volume, the survey crews considered all sound pine trees 5 inches or over in diameter, outside the bark at breast height. The volume is expressed in standard cords (4 x 4 x 8 feet) containing 128 cubic feet of stacked wood or 90 cubic feet of solid wood including bark.

Average Volume Per Acre Low

The survey has classified the timber growing area where pine is predominant into three broad forest types, including the longleaf type, shortleaf-loblolly type, and the shortleaf-loblolly-hardwood type. It is on these three predominant types, comprising an area of 7,256,500 acres, that 97.7 percent or 65,827,500 cords of pine timber occurs. The average volume per acre for the three typical pine types is approximately 9 cords per acre, which is less than half of what the area under proper forest management is capable of supporting. The failure of many timberland owners to recognize timber as a crop, along with forest fires, taxation, etc., have all contributed to the present understocked condition of the pine stands. However, vast areas of timberlands are being rehabilitated through effective fire protection and the intense desire of the owners to practice good forestry and grow timber as a crop.

Growth Can Be Increased

The average growth per acre per year based on the present volume of 9 cords of pine pulpwood per acre is estimated to be approximately one-half cord. The total estimated growth for the 7,256,500 acres of pine type land is approximately 3,918,510 cords per year. By the application of practical cutting methods and fire protection it is altogether possible to increase the pine volume from 9 to 20 cords per acre and the growth from one-half cord to one and one-half cords per acre per year. In these depleted stands there must, of course, be a building-up period which in many cases will require several years with no income, while on other areas it will be possible to harvest crops of poles, ties, logs, pulpwood, etc., during the time the stand is being built up. It is necessary, however, to so regulate the cut as to leave a good margin of growth over drain. Stands having an average of 9 cords per acre have many crooked, low-grade trees that should be cut into pulpwood, as well as vast quantities of trees ready for poles, logs, ties, etc. While the average acre for the pine types may contain only 9 cords, there are, however, vast areas in the shortleaf and loblolly types that through effective fire protection and conservative logging are approaching a normal stocking and in many cases are overstocked and in need of thinning. The whole forestry situation simply requires sound planning, which if properly developed and intelligently applied will not only support our present forest industries, but through larger supplies, support additional ones.

Other Species Suitable

The Survey classification for hardwoods breaks them down into two groups, non-pulping and pulping species. Since pine is not the only species growing in East Texas it is well to briefly consider the hardwoods. Included in the list of pulping species are sweet gum, black gum, tupelo gum, bay, magnolia, cottonwood, willow, and maple, and on the 10½ million acres of forest land in East Texas there are 19,502,600 cords of hardwood classified in this group. The non-pulping hardwoods are oaks, ash, hickory, beech, elm, hackberry, pecan, walnut, and sycamore. Even though the latter list is classified as non-pulping species, one pulp mill operating in East Texas is, at the present time, supplying about one-fourth of its pulpwood requirements from oak. The volume of non-pulping hardwoods, according to the Survey, is 32,820,900 cords or 27 percent of the total cordwood volume of 119,678,000 cords, which includes all species for the entire commercial timber belt of East Texas.

Supporting Resources Available

In addition to the timber resources Texas has an abundance of other materials required for pulp and paper production such as water, sulphur, salt, lime, clay, resin, and fuel.

Diversified Industry Necessary

For a healthy development of forestry it is necessary to have a diversified wood-using industry. Included in the pulpwood estimate is timber that will not be available for pulp production because a portion of the volume must be allocated to other wood-using plants. In any progressive forestry program there must be a diversification of industries, because through diversification a market is created for trees of all species, sizes, and qualities, which is a fundamental factor in growing timber as a crop. Sawmills, creosoting plants, pulp mills, veneer mills, handle factories, hewn tie producers, miscellaneous wood working shops, furniture factories, etc., are all an integral part of the timber business. Then there are the requirements on the farm such as posts, fuelwood, building timbers, etc., which are important outlets for farm grown timber in addition to the industrial markets. All of these many timber requirements are included in the pulpwood estimate.

GULF STATES SECTION OF S. A. F. TO MEET IN LUFKIN

The Gulf States Section of the Society of American Foresters will hold its annual spring meeting in Lufkin on April 28 and 29, W. E. White, chief of the Texas Forest Service's division of forest protection and chairman of the committee on arrangements for the meeting, announced.

Field trips and discussion will center around the following subjects: forestry work on State forest lands; timber cutting on National Forest lands; private forestry operations of the Angelina County Lumber Company; and Soil Conservation Service activities.

In addition to the forestry part, the meeting will also include a banquet and business meeting with the election of officers. The Angelina Hotel at Lufkin has been designated as official headquarters.

This sheet made from 80% pine groundwood and 20% pine sulphate pulp

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TEXAS FORESTRY DAY TO BE PROCLAIMED APRIL 23

Sunday, April 23, will be proclaimed as "Texas Forestry Day," by Governor W. Lee O'Daniel. This is the first time that a Texas governor has set aside such a special forestry day for the State, although in the past several governors have taken similar action pertaining to the recognition of special forestry occasions being proclaimed throughout the Nation.

Governor O'Daniel was urged to designate April 23 as forestry day, mainly through the efforts of the East Texas Chamber of Commerce, which will open its annual convention at Beaumont on that day with forestry as one of the main themes.

Forestry and livestock will also be the two main topics of discussion at the agricultural group meeting to be held on Monday afternoon, April 24, in the City auditorium in Beaumont. This special meeting is being sponsored by the Texas Forestry Association, Coastal Cattle Association, Gulf Coast Council of Agriculture, and the Texas Forest Service. The following addresses will be delivered: "Timber Farming as a Source of Cash Income," O. M. Stone, Jasper, chairman, forestry committee, East Texas Chamber of Commerce; "Value of Livestock Breeder-Feeder Movement to East Texas," Frank Holland, Jr., Dallas, president, Texas Breeder-Feeder Association; "Farm Chemurgic Research and Cash Dividends," Dr. E. P. Schoch, Austin, director, Industrial Chemistry Bureau, Texas University. A color film, "Power of Chemurgy," and films on Texas forestry and livestock will also be shown. The meeting begins at 2:00 P. M.

From 4:30 P. M. to 6:00 P. M. a Farm Chemurgic Symposium will be held at the Edson Hotel with Victor Schoffelmayer, Dallas, agricultural editor of the Dallas Morning News, presiding, assisted by P. F. Lawson, secretary of the Beaumont Chamber of Commerce, and Elmore R. Torn, Longview, agriculture and forestry director of the East Texas Chamber of Commerce.

DID YOU KNOW?

One 24-inch pine tree is equal in wood volume to 24 trees of 10-inch diameter.

SCALY-BARK OR SHAGBARK HICKORY

(Hicoria ovata Britton)



SCALY-BARK HICKORY
Leaf, one-third natural size
Twig, one-half natural size
Fruit, one-fourth natural size

The scaly-bark hickory is found from eastern Texas to Florida and north to the St. Lawrence River. Its edible nut is an article of commerce. It is a large tree of commercial importance reaching 100 feet in height and two to three feet in diameter. It thrives best on rich, damp soil.

The **bark** of the trunk is rougher than on other hickories, light gray and separating into thick plates which are only slightly attached to the tree. The terminal winter buds are egg-shaped, the outer bud-scales having narrow tips.

The **leaves** are alternate, compound, from 8 to 15 inches long and composed of 5, rarely 7, obovate to ovate leaflets. The twigs are smooth or clothed with short hairs.

The **fruit** is borne singly or in pairs and is globular. The husk is thick and deeply grooved at the seams. The nut is pale, the shell thin, and the kernel sweet. The **flowers** are of two kinds, opening after the leaves have attained nearly full size.

The **wood** is heavy, hard, tough and very strong. It is used in the manufacture of agricultural implements, tool handles, carriages, and wagons.

SUMMARY SHOWING THE OCCURRENCE OF FIRES AND AREA BURNED OVER WITHIN THE COUNTIES UNDER PROTECTION BY THE TEXAS FOREST SERVICE
(PERIOD JAN. 1, to DEC. 31, 1938)

Counties	No. of Fires	Acres Burned Over	Average Size Fire	Percent of 5,985 Fires Occurring	Percent of 149,485 Acres Burned
Anderson	161	3,828	23.8	2.7	2.6
Angelina	411	4,005	9.7	6.9	2.7
Bowie	128	6,284	49.1	2.1	4.2
Camp	-	-	-	-	-
Cass	341	9,213	27.0	5.7	6.2
Cherokee	286	7,005	24.5	4.8	4.7
Gregg	-	-	-	-	-
Harris	16	452	28.5	.3	.3
Harrison	136	2,065	15.2	2.3	1.4
Houston	109	2,823	25.9	1.8	1.9
Hardin	253	11,446	45.2	4.2	7.6
Jasper	405	13,542	33.1	6.7	8.9
Liberty	21	124	5.9	.4	.1
Montgomery	305	4,132	13.5	5.1	2.8
Marion	219	6,475	29.6	3.6	4.3
Morris	5	106	21.2	.1	.1
Newton	506	22,759	45.0	8.4	15.2
Nacogdoches	281	2,732	9.9	4.7	1.9
Panola	185	2,654	14.3	3.1	1.8
Polk	467	12,547	26.9	7.8	8.4
Red River	72	2,979	41.4	1.2	2.0
Rusk	95	1,386	14.6	1.6	.9
Sabine	173	5,334	19.3	2.9	2.2
San Augustine	158	5,845	37.0	2.6	3.9
San Jacinto	172	1,709	9.9	2.9	1.1
Shelby	69	878	12.7	1.1	.6
Trinity	125	3,406	27.2	2.1	2.3
Tyler	755	16,058	21.3	12.6	10.7
Upshur	5	757	151.4	.1	.5
Walker	150	1,087	8.4	2.2	.7
TOTAL	5,985	149,485	25.0	100.0	100.0

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MR. W. R. HORSLEY
LANDSCAPE ART DEPARTMENT
CAMPUS

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FORESTRY TO BE TAUGHT IN SUMMER CONSERVATION COURSES

Forestry will be taught at ten Texas colleges this summer as one of a series of courses in conservation being arranged by Dr. B. B. Harris of the North Texas State Teachers College. The conservation courses will be given over a period of six weeks and are expected to reach 6,000 students and a minimum of 25,000 visitors.

"Texas Forests and Forestry" will be discussed by W. R. Horsley, College Station, representing the Texas Forest Service. His talk will be supplemented with a special motion picture made in Texas by the Service.

Horsley's schedule will be as follows: June 21, Denton, North Texas State Teachers College; June 22, Commerce, East Texas State Teachers College; June 23, Nacogdoches, Stephen F. Austin State Teachers College; June 24, Huntsville, Sam Houston State Teachers College; June 27, College Station, A. and M. College; June 28, Kingsville, Texas College of Arts and Industries; June 29, San Marcos, Southwest Texas State Teachers College; June 30, Waco, Baylor University; July 1, Alpine, Sul Ross State Teachers College; July 5, Canyon, West Texas State Teachers College.

Other forestry lecturers include Dr. H. N. Wheeler, Washington, D. C., chief lecturer of the U. S. Forest Service, and P. F. W. Prater, Houston, forest supervisor, Texas National Forests.

Texas Newsprint Mill Dedicated



The above plaque was unveiled at the official dedication of the newsprint mill at Herty, near Lufkin, on Saturday, May 27, by E. L. Kurth, president of Southland Mills, Inc. It is the work of Miss Allie Virginia Tennant of Dallas. Over 200 attended the exercises. G. B. Dealey, publisher of the Dallas Morning News, was the principal speaker.

CHIEF FORESTER SILCOX TO SPEAK IN TEXAS

F. A. Silcox, chief forester of the United States Forest Service, Washington, D. C., will be the principal speaker at the twenty-fifth anniversary meeting of the Texas Forestry Association to be held in Nacogdoches on July 26, D. C. Kenley, Lufkin, president of the Association, announces.

Mr. Silcox was urged to come to Texas through the efforts of Mr. Kenley, E. L. Kurth, Lufkin, president of Southland Paper Mills, Inc., Lacy Hunt, president of the Nacogdoches Chamber of Commerce, H. M. Seaman, Houston, vice-president and general manager, Kirby Lumber Corporation, and E. O. Siecke, College Station, director of the Texas Forest Service.

The Nacogdoches Chamber of Commerce is handling the local arrangements and promises that everything possible will be done to make the meeting a success.

The Texas Forestry Association was organized in 1914 at Temple, and was largely responsible for the passage of the law creating the Texas Forest Service in 1915. Through the years the Association has made possible increased State support and interest in forestry.

VISITORS FROM MEXICO

Senor Pedro V. Rodriquez Triana, governor of the State of Coahuila, the governor's secretary, and Senor Luis de la Fuento, agricultural engineer and member of the Legislature, visited the Texas Forest Service office while on the A. and M. College campus during the first part of June. Governor Triana and Senor Fuento were especially interested in the type of forestry work being conducted in Texas and how the field work was carried on, as well as the educational activities.

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HARDWOOD AREAS OF THE U. S.

Nearly every State east of the prairies produces hardwood timber. In the West, however, hardwoods are less abundant, being found only in small quantities, mostly in the river bottoms and valleys of the Pacific Coast States.

The U. S. Forest Service reports a total stand of hardwood saw timber of 182 billion board feet, of which 98½ percent is in the East. Hardwood lumber production during the past 35 years has varied from a high of over 10½ billion board feet in 1909 to a low of less than 1½ billion board feet in 1932. In 1936 it was slightly over 4 billion board feet. In addition to lumber it is estimated that approximately an equal volume of other forest products is normally harvested from saw timber size trees.

Hardwood stands comprise about twice as much second-growth saw timber as old growth saw timber, which means that two-thirds of the saw timber stands is increasing rapidly in volume and value. In addition there is a volume of smaller hardwood timber of nearly a billion cords. A mature forest is static whereas a second-growth forest is dynamic. Thus, the hardwood forests of America present a splendid opportunity for the forester to grow hardwood timber for future commercial use. Possibly his greatest problem will be to find adequate market for the potential production. It seems apparent on the basis of incomplete current data that if proper forest practices were applied, our hardwood forest lands could not only meet permanently our domestic requirement but in addition, produce substantial amounts suitable for our export trade.

East Texas Hardwoods

In the East Texas timber region it is estimated that there are approximately 3,300,000 acres in hardwood, of which 1,400,000 acres are in the upland hardwood type and 1,900,000 acres in the bottomland hardwood type. The net hardwood saw timber volume for East Texas (based on the International one-quarter inch rule) has been estimated at 10,092,300,000 board feet. On a cordwood basis, estimates show 52 million cords, of which 19 million cords are pulping hardwood species and 33 million cords non-pulping species.

NEW USES FOR HARDWOOD WASTES

Mr. Carlile P. Winslow, Director, Forest Products Laboratory, Madison, Wisconsin, in an address before the annual convention of the National Hardwood Lumber Association held in Chicago, September 22 and 23, 1938, had as his subject "Some Recent Developments Affecting Hardwood Utilization." Mr. Winslow points out that forest landowners, producers, and distributors of forest products, the hardwood and softwood interests of the United States, are faced with many technical problems involved in retaining and widening the uses and markets for their forest products.

Plastics From Hardwood Wastes

The following is what Mr. Winslow has to say concerning the utilization of hardwood wastes for processing into plastics:

"As you are all aware the hardwood forests are encumbered with defective trees that won't pay their way when manufactured into standard lumber and should be harvested to make room for a new crop of timber of desirable species; we also have the ordinary sawmill wastes, such as sawdust, slabs, and edgings. Anything that would aid in the utilization of such material would be of advantage to timber growers. With that concept in mind, you should be interested in the recent plastic material that has been developed at the laboratory for the purpose of aiding in the utilization of the foregoing wastes.

The essentials of the process are simple. Sawdust or other wood waste in the form of small chips is mixed with dilute sulphuric acid and heated in a metal container for about 30 minutes. The heat raises steam and acid vapor inside, and changes the chemical nature of the sawdust—"hydrolizes" it, as the chemist says. When the container is opened again, the sawdust as such is gone and in its place there is a dark fibrous residue in a bath of dark syrup. The water and the acid have changed part of the sawdust into a mixture of several different kinds of sugar—that accounts for the syrup. This has its own chemical possibilities, but for the moment it is the dark fibrous residue in which we are interested. The syrup is next drained off, leaving the fibrous residue, which is then washed, dried, and ground, to form, with the addition of furfural and aniline, a molding powder. By pressing the molding powder at a temperature of 150° C. under a pressure of 4,000 pounds per square inch for from 3 to 5 minutes a dense, impervious sheet material is formed that offers wide possibilities of use as floor tile, wallboard, switchboard panels, and a variety of other products, at a cost per square foot estimated to be equivalent to the general price level of lumber.

The finished material receives a high polish in the mold. Its natural color is an opaque black. Other colors can be produced only as a surface covering. This has been done by painting, enameling, lacquering, and by incorporating some decorative material, such as paper, cloth, metal powders, or wood veneer, as an integral part of the finished material by inserting it in the mold before pressing. Attractive products have been made by incorporating figured veneers in the surface.

The sugars that result from the hydrolysis of wood in making the plastic may be used as a cattle food or they may be converted to ethyl alcohol by fermentation if economic conditions warrant.

The demand for plastic materials is evidenced by the fact that during the year commercial production was begun of this wood plastic. A factory in northern Wisconsin using low-quality aspen as raw material is making a molding powder for this purpose."

CONSERVATION TAX-FREE IN NORTH CAROLINA

The 1939 Legislature of North Carolina has adopted a tax policy which forbids tax assessors to increase tax valuation of real estate as a result of the owner's enterprise in adopting any one or more of the following progressive policies:

Planting and care of lawns, shade trees, shrubs, and flowers for non-commercial purposes.

Terracing or other methods of soil conservation, to the extent that they preserve values already existing.

Protection of forests against fire.

Tree planting for reforestation purposes (for ten years after planting).

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SLASH PINE IN TEXAS

A Summary of 13 Years Research With Valuable Tree

The first slash pine plantation in Texas was established in 1926 on State Forest No. 1, near Kirbyville, in Newton County. Previous to this, scattered trees had been planted but not of a sufficient extent to draw any conclusions as to the growth of the species in the State.

The natural range of slash pine extends from the coast of South Carolina, near the city of Charleston, southward and westward to southeastern Louisiana. Its growth is extensive in the lower areas and rolling hills in sandy loam soils, which are poorly drained. It makes an excellent growth, particularly rapid during the first 20 years, and the heartwood is the heaviest, hardest, and strongest of all the pines in the United States. The yield of crude turpentine is the largest from any of the native pines. Second-growth slash pine in its natural range readily spreads over lands formerly dominated by longleaf pine. Without experimentation this would lead to the conclusion that it should prove a good species for planting in the cut-over longleaf areas of East Texas.

Knowing this natural background for the species, three plantings were made on State Forest No. 1 in the spring of 1926, but two failed because the roots of the seedlings had dried out before planting. The third, which has been designated as plantation 26-C, has been basic in the further study and experimentation with slash pine throughout East Texas from the Gulf on the south coast to the Red River on the north.

The seedlings for plantation 26-C were good one-year-old stock and were obtained from a nursery at Woodworth, Louisiana. The planting site is low with a sandy clay soil containing iron ore gravel. The ground cover was wire grass and sedge with the typical rough found in East Texas. The trees were planted on an area of 1.3 acres in spots, cleared of the rough, spaced 6 x 8 feet apart. Approximately 900 were set out to the acre. While the mortality of the seedlings was relatively high during the first few years of the plantation and may have had a slight influence on the growth of the surviving trees, the present stand indicates that it may now be favorably compared with average stands in other states. In two years a better comparison can be made, as the available comparative data is based on 15-year and older stands.

The accompanying chart shows the growth by two-year periods for the thirteen years since the plantation was started. It is particularly interesting to note that, since planting, the trees have averaged approximately one-half inch in diameter increase and over three feet in height growth each year. Also, the volume of cord wood has increased on the average of 1.2 cords per year when figured over the entire life of the plantation.

Other Experimentation

The introduction of slash pine to Texas has been entirely dependent on the importation of seedlings or seed from the native range of the species. With the exception of this early planting, the seed has been secured and the seedlings raised in the Texas State Forest nurseries.

Up to the present time about 25 areas on the State Forests have been planted with slash pine. The planting has been on varied sites and with seed secured from different states. At the present no marked difference has been apparent in the seed sources tested as to the resulting survival and growth, and the trees are still too young to draw any specific conclusions on site factors.

Some experimental work has also been done in the nursery by raising seedlings in both shaded and unshaded beds. The latest check, five years after the seedlings were taken from the nursery and placed in the plantations, indicated that seedlings from the unshaded beds were the most vigorous.

Cooperative Plantations

The study of slash pine in Texas has not been limited to the State Forests. The Texas Forest Service has

(Continued on page 4)

Tall Pines From Little Seedlings



Thirteen years ago the above area on State Forest No. 1, near Kirbyville, was stumpland except for 1,200 one-year-old slash pine seedlings that had just been planted and barely showed in the grass. In 1938, the trees averaged 41.5 feet in height and 6.3 inches in diameter at breast height. The above picture was made in May, 1939. Forest patrolmen inspect plantation.

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SLASH PINE—

(Continued from page 3, Col. 3)

cooperated with private landowners in establishing small plantations on many areas in the East Texas pine belt. Growth and survival records are now being kept on plantings in twenty-three different counties. The most of the planting was done in 1931, 1936, and 1937. Additional plantations are being established at the present time in cooperation with schools and vocational agriculture classes.

Late in 1938 an inspection of all the cooperative plantations was made by a member of the Texas Forest Service. While the data has not been completely analyzed as yet, a preliminary summary indicates that in many instances slash pine surpasses the native pine species for use in reforestation in Texas, though recommendations for its use must be qualified by the limitations of experimentation over a relatively short period of years on small areas. The results of measurements on 44 cooperative plantings are given below:

Cooperative Slash Pine Plantation Results

(Last measured October, 1938)

	1931	1936	1937
Area Planted (acres)	27.5	7.0	32.4
Survival (percent)	38.1	50.3	53.9
Average Height (feet)	18.6	3.5	2.0
Average Diameter* (inches)	4.0	—	—

* Diameter measured at 4½ feet from ground.

In considering these figures there are many points that do not explain themselves numerically. For example, the 1931 survival was affected by a root disease that apparently developed due to the heating of the seedlings in transit from the nursery to the planter. Also, experience of the planters, care of the trees between shipment and planting, the site, weather conditions, and care of the trees following planting must all be properly considered in the final analysis.

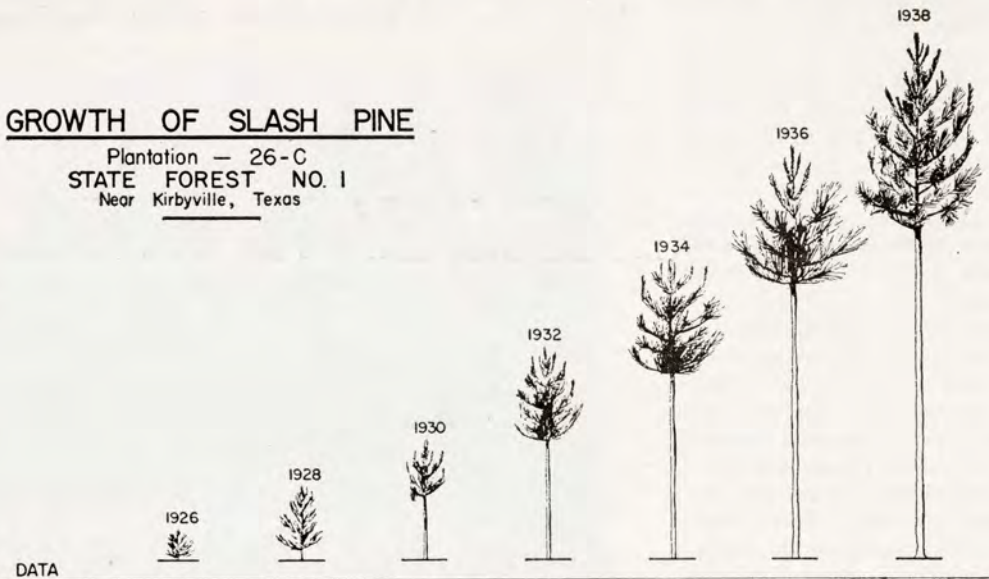
Conclusion

The experimental planting of slash pine both cooperatively and on the State Forests has, as far as it has progressed, surpassed any expectation for species not native to the State. The outlook is exceedingly bright for it to become the leading tree to be used in reforesting those areas of East Texas, which can be returned to their original forested condition only by planting. The future is further brightened by the increasing use of southern pines for pulping, with slash pine the leading species for this purpose.

If plantations are made on suitable sites, are properly planted, and are protected from fire, and if the species shows the ability to naturally reproduce itself in its new environment, the present indications are that the future of slash pine in Texas will be measured entirely on the extent of its use and the time required to produce a timber crop of pulpwood, poles, sawtimber, and the other forest products for which it may be utilized.

NEW FOREST PLAN IN MISSISSIPPI

By increasing the biennial appropriation for forestry from $30,000 to $85,000 and by the creation of a committee to study problems of forest protection, conservation, cutting practices, tax adjustments, and other features connected with forestry in Mississippi, the Legislature which adjourned in April opened the way for a greatly expanded program of State forestry.



GROWTH DATA	1926	1928	1930	1932	1934	1936	1938
AGE FROM SEED (years)	2	4	6	8	10	12	14
TREES PER ACRE	—	—	341	431	438	432	389
AVERAGE HEIGHT (feet)	2.2	5.2	8.9	16.2	23.5	32.7	41.5
AVERAGE DIAMETER (inches)	—	—	1.7	3.0	4.3	5.2	6.3
CORDS PER ACRE (with bark)	—	—	—	1.1	4.9	9.4	16.6
CUBIC FEET PER ACRE (peeled wood)	—	—	—	94.8	326.7	731.3	1278.5

BASED ON TREES 1" DIAMETER (breast height) AND UP, EXCEPT CORDWOOD WHICH IS ON TREES 4" DIAMETER (breast height) AND UP

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TEXAS FOREST SERVICE MEN HOLD 4-DAY CONFERENCE

With two general themes as emphasis—one, better forest protection, the other, general forestry training, 100 Texas Forest Service patrolmen, lookoutmen, and smokechasers met with their supervisory and technical personnel in a four-day conference, from May 22 through May 25, at State Forest No. 1, near Kirbyville. A similar conference was held last year.

The men came from all over the East Texas protection area of 11,000,000 acres, bounded on the north by the Red River, on the south almost to the Gulf, on the east by Louisiana, and on the west by the post oak belt. Forest fire problems were discussed in order that this important activity may be conducted in the most effective manner. Special field work included training in fire fighting methods, checking fire-burned acreage, and construction and maintenance of Texas Forest Service telephone lines connecting lookout towers.

General Forestry Training

The other part of the conference was designed to give the men a better general knowledge of forestry in order that they may be of the greatest service to the many small timberland owners in their communities. The forest protection men do not have technical forestry training; thus by giving them this elementary forestry work at the conference they will be in a better position to discuss the production of timber as a crop with the many small owners they contact and more effectively interest them in forest fire prevention and control activities. The field work on this phase of general forestry included inspection of the State Forest and the work projects underway there, and practical demonstrations in selective cutting, thinning timber, and estimating timber. Markets for forest products were also discussed.

Special Features

O. M. Stone, Jasper, civic and forestry leader, appearing on the program as a special speaker, emphasized the importance of forest protection to growing timber as a crop and the value of timber markets to East Texas counties and the state. As another feature, the recently completed motion picture, "Timber Harvesting in Texas," was shown for the first time. The film is in color and will be used in the two Texas Forest Service educational motion picture units operating in the piney woods region.



Texas Forest Service employees attending conference held at State Forest No. 1, near Kirbyville, from May 22-25, 1939.

USE OF RADIO IN FOREST PROTECTION

The use of radio as a means of communication in forest protection is being experimented with by the Department of Forests and Waters in Pennsylvania, according to a recent report issued by the Division of Forest Protection of that organization. The project was started several years ago using ultra high frequency radio in cooperation with radio engineers and manufacturers. Twelve such radio sets were in use at the end of 1937.

Lookout towers were able to keep in constant communication with each other through the use of the radio. Fires could be located quickly and the district office immediately informed. In cases where the tower is also supplied with a telephone the towerman can immediately call men to the fire. The inspector was able to contact the towers from the fire line and inform them of the condition of the fire. If more men were needed much time was saved in calling them out.

During the recent fall season this method of communication was satisfactory. The experiment will be continued with the hope that it continues as successfully when tried in other parts of the state.

TOWN WITH A FOREST

Danville, a small community in New Hampshire, has a forest of its own and has since 1760, when citizens of that hamlet in the wilderness set aside fifty acres of woodland as a source of income to pay the preacher. There has been a permanent committee to take care of this piece of woods, on behalf of the town. The first sale of lumber was in 1850 and brought $1,500. Other sales have brought in from $2,000 to $5,000 a clip. In 1930 Danville had $10,000 in the bank from this piece of woodland. In addition, out of the income they have built a new church and, better yet, at one time they loaned the town $2,500 out of this forest money. A town with an income of its own and no taxes! How strange that sounds in these days of taxes and more taxes and still more taxes. What a blessing, if this example could be followed throughout the country.

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FOREST EMPLOYMENT IN CENTRAL EUROPE

An example of how community, city, and state forests may furnish permanent as well as emergency employment is cited in a study of forest employment in Central Europe by the U. S. Forest Service. The report shows that woods work in Germany affords employment at the rate of one person fully employed for approximately 100 acres of productive forest land. Several times as many persons are actually employed on a part-time basis, and manufacture, processing, and distribution of forest products employ about twice as many persons as forestry and logging.

In Central Europe, generally, a major objective of forest land management is securing the economic and social stability and well-being of the rural population. Many farmers are given forest employment, so that they can earn enough to stay on their farms instead of going on relief. Many women are also given work, especially during the planting season.

Special aid has been given by the German government in reforesting both public and private lands during the past few years in order to provide self-liquidating employment projects.

Among the numerous examples cited by the Forest Service is a city forest in Wurttemberg containing 6,200 acres of spruce and fir with some pine, and yielding an annual cut of about 530,000 cu. ft. Eight forest officers and 60 permanent workers are employed practically for the entire year. The forest also largely supports 60 to 70 small sawmills and other wood-using industries in addition to a considerable home industry.

"It is not likely," the Forest Service states, "that forests in the United States can provide employment at such a rate as those of Germany because we have four acres of productive forest land per capita as compared to less than a half-acre per capita in Germany, but our forests can continue to support many millions of people and serve to supplement rural incomes in many regions if managed for continuous production and if properly correlated with agricultural land and other natural resources in their vicinity."

CONSERVATION TO BE TAUGHT IN WEST VIRGINIA SCHOOLS

A committee of five public school teachers, brought to the State capitol at Charleston, West Virginia, by the State Department of Education, worked recently in compiling a series of teaching guides for conservation instruction in West Virginia schools. This committee, selected so that all grade levels from the first to the end of the high school course would be represented, studied the reports made by county conservation committees during the past year and reports made by summer session students at three State colleges.

At the conclusion of the State committee's work, in which representatives of several Federal agencies cooperated with conservation commission technicians, teaching guides are being published this fall by the commission and will be distributed by the State Department of Education to all teachers in the form of a supplement to the State curriculum.

No new course of study will be presented but rather conservation pages in established subjects, such as science, history, civics, and English will be brought into the classroom through the state program of study. The material will cover wildlife, forests, man and nature, wise use of resources, conservation laws, and the part of good citizens in the conservation program.

WOOD VERSUS OTHER MATERIALS

Admiral Richard E. Byrd is making preparations for another trip to the "bottom of the world". His past experiences have taught him that for many purposes wood is superior to other materials for use in the extreme cold of the Antarctic regions. The story comes from Newburg, Oregon, that one Samuel Hicks, formerly an officer in the British Navy, who has had experience in the Antarctic, has been commissioned by Admiral Byrd to produce the wooden articles needed for his next expedition. These articles include wooden tableware, bowls, forks, spoons, and such utensils as are needed for cutting and scraping seal meat. It was found on the first visit to "Little America" that metal and crockery utensils could not withstand the frigid climate. Metal spoons and forks generated so much frost that food froze en route from plate to mouth. Wooden gadgets such as toggles and other parts for the dog harness are being made to replace the metal formerly used which snapped like glass when exposed to 80° below zero temperature. Large wooden pins are being made for driving into the ice to anchor tarpaulins and covers for tractors, airplanes and other heavy equipment. Metal pins formerly used were too brittle in the intense cold.

FLOWERS FOUND ON YOUNG LOBLOLLY

Members of the Texas Forest Service personnel while recently checking research projects at State Forest No. 2, near Conroe, discovered flowers on a five-year-old loblolly pine. The seedling was only two and a half feet high. The terminal bud, in a previous season, had been attacked by a tip moth causing a three-branched top. The flowers were found on two of the three leaders.

This tree is of special interest in view of the work in tree selection and genetics that is being undertaken by the Service. One of the greatest handicaps in study of successive generations of tree growth is the period of time required to reproduce each generation. If studies can be made from this tree and other similar trees that reproduce early in their life, not only will the work be greatly accelerated but also the shortening of the time element will permit a wider field of factors to be studied.

A fence is being placed around this particular tree to prevent mechanical damage. Frequent observations will be taken to determine its actual ability to produce fertile seed.

GIANT SEQUOIA WEIGHED

General Sherman, largest Sequoia in Sequoia National Park, has been weighed, and total weight was estimated at 4,299,851 pounds, or approximately 1,711 tons. The tree was measured and a section from another living Sequoia was weighed and used as a basis for the experiment.

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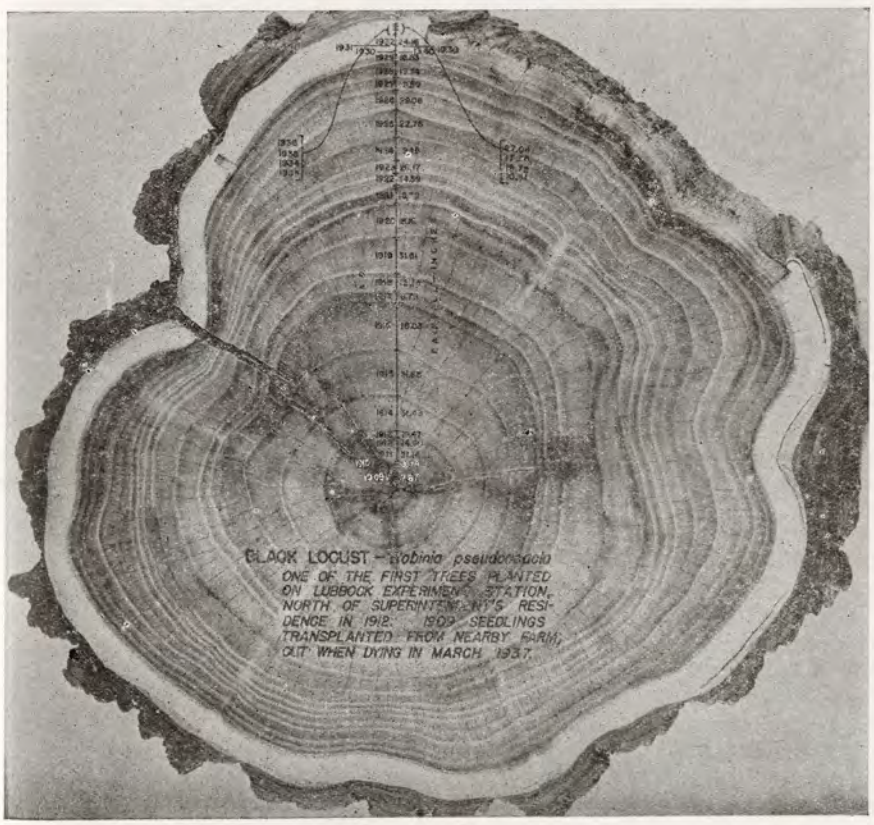
GROWTH RINGS OF WEST TEXAS TREE RECORD EFFECT OF RAINFALL

Centuries before man began the systematic keeping of weather records, trees which are living today were accurately recording the variations in seasonal rainfall. Tree ring analysis has materially aided scientists in the study of "wet" and "dry" cycles and in the prediction of their reoccurrence in given localities. Trees are Nature's weathermen, the oldest of which are the giant Redwoods of California dating back some 2,000 years.

The accompanying photograph shows a cross section of a twenty-eight year old black locust (Robinia pseudoacacia) grown at the Lubbock Experiment Station. In addition to the effect of seasonal rainfall, the cross section shows the effect of "carry-over" or storage of moisture in the deep Amarillo sandy loam soils of the southern high plains region in the vicinity of Lubbock, Texas. That various species of trees can send their roots deep down into the subsoil and make use of the stored moisture is a contributing factor to the ability of the species, not only to withstand droughts but to continue satisfactory growth during a period of low rainfall. This is particularly noticeable in the width of the growth rings for the years 1916, 1920, and 1924. For the two years preceding 1916 there was a total of 63.3 inches of rainfall; this made it possible for the tree to continue the rapid rate of growth through 1916, comparing favorably to that of 1914 and 1915, even though the rainfall for 1916 was less than half (15.03 inches) of that which fell in 1915 or 1914 (31.88 inches and 31.43 inches). This same ability of the fine sandy loam soils of this area to carry over stored moisture into the following season is also reflected in the cotton yields recorded at the Lubbock Station. During the following year (1917) the rainfall was cut in half again (8.73) which resulted in a decided drop in rate of growth. This loss in growth is undoubtedly due to the fact that the tree had already used, in 1916, most of the stored moisture "carried-over" from 1915.

A study of the rings in this black locust tree clearly shows some seven wet and dry cycles occurring during its twenty-eight-year growth. The noticeably wider growth rings in the first four inches out from the center are due largely to the vigorous, fast growing characteristics of most young trees. Generally speaking, in the case of open grown trees, the ability to lay on wide growth rings lessens with advanced age. This particular black locust tree was dying from insect attack when cut down in the spring of 1937.

In addition to the work of the Lubbock substation of the Texas Agricultural Experiment Station in the improvement of certain field crops, the station has for the past twenty years conducted, in cooperation with the Texas Forest Service, a study of the various species of trees best adapted to the naturally treeless region of the high plains. The most commonly known and planted of the introduced species is the Chinese elm which was first introduced and widely distributed by the substation beginning in 1919. Many of the species of trees which had proved successful at the Lubbock substation are being used today in the planting of shelterbelt strips throughout the southern great plains region. These experiments in the introduction of trees have resulted in greatly increased tree planting activity throughout West Texas.



This cross section of a tree was cut from a black locust (Robinia pseudoacacia) which was planted on the grounds of the Lubbock Agricultural Experiment substation in the spring of 1912. The tree measured fourteen inches in diameter when cut in the spring of 1937. The short horizontal lines, intersecting the vertical line which is drawn from the center of the tree, mark the extent of each year's growth. The years from 1909 to 1936 are shown on the left side of the vertical line and the rainfall in inches for each year on the right side.

NEW PLASTICS FROM WOOD

Four research workers connected with the Forest Products Laboratory at Madison, Wisconsin, have developed a method for converting sawdust, straw, wood waste, and waste sugar cane stalks into valuable synthetic plastics, according to the "American Forests" magazine.

The inventors have found that by cooking any one of these waste materials with water and aniline under steam pressure a material is obtained which can be molded to form a hard, dense, black, shiny product like glass.

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TEXAS MEN ELECTED IN S. A. F. MEETING

Two Texas Forest Service men, W. E. White, chief of the division of forest protection, and D. A. Anderson, assistant forester, both of Lufkin, were elected to the offices of chairman and secretary-treasurer, respectively, of the Gulf States section of the Society of American Foresters at the section meeting held April 28 and 29 in Texas.

The two-day meeting included inspection of the Texas Forest Service's division of forest protection office at Lufkin, timber sales area and Ratcliff Lake on the Davy Crockett National Forest, Texas State Forests at Weches and Maydelle, private forestry operations of the Angelina County Lumber Company, and Soil Conservation Service projects near Nacogdoches. The visiting foresters made many favorable comments on the timber cutting plots on State Forest No. 3, near Maydelle, where the Texas Forest Service, early in January, 1939, initiated a project on a 40-acre tract to show the results of cutting timber to various diameter limits and by the selection system.

FORESTRY COMMITTEE HEAD

Lacy H. Hunt, president of the Nacogdoches Chamber of Commerce and general manager of the Tilford-Hunt Lumber Company, was recently elected chairman of the forestry committee of the East Texas Chamber of Commerce.

FORESTS PROMINENT IN NEW SOUTH'S INDUSTRIAL PROGRAM

In the October 28 issue of the "Texas Business Review," prepared by the Bureau of Business Research at the University of Texas, an encouraging article on the new South and industrialization carried the following comment on the part forests play in this program.

"A highly important natural resource of the Southeast is timber—a function of the humid climate; the Gulf pine forests extend west of the Mississippi well into the three or four tiers of counties of East Texas. Lumber production and the making of naval stores from the Southern yellow pine have long been important enterprises. The revolution in the paper industry in the United States in the post-War period, however, has concerned itself largely with the utilization of the Southern pines. In this group of industries of the industrialized South the vanguard has been the large-scale production of Kraft paper, but already bleached pulp has become important. Industries utilizing paper products for bags, containers, etc., are of growing significance in the Southeast.

"In Texas new plants reflect a greater variety of enterprises than in any other State in the South. They range from a large number of canning plants especially concentrated in the lower Rio Grande Valley, meat packing plants, cottonseed oil products, Kraft paper, bleached sulphate pulp, sodium sulphate (salt cake), carbon black, motor fuels, chlorine, cement, and the like. An outstanding new item in pulp production is the Houston plant of the Champion Paper and Fibre Company, together with its associated industries."

"OUR MOST POWERFUL BULWARK"

In a plea for the protection of our woodlands, Dr. H. H. Bennett, chief of the Soil Conservation Service, characterizes the forests which cover 30 percent of the Nation's land surface as "our most powerful single bulwark against excessive soil wastage and runaway water."

He points out that because the damage takes place gradually in the upper reaches of a natural drainage basin, the soil loss directly due to forest fires is not always fully appreciated.

For proof of this an experiment conducted on the grounds of the Soil and Water Experiment Station at Statesville, North Carolina, is described. Two practically identical woodland plots were selected, one of which has been burned off every year while the other has been left in its original state. Over a six-year period, the burned lot has shed 100 times as much water as the plot in the unburned woods; soil losses have been more than 800 times as great.

BURR OAK (Mossy Cup Oak)

(Quercus macrocarpa Michx.)

The burr oak occurs throughout the eastern part of the state and as far west as Callahan and Menard counties, in rich bottom lands along streams, or on rich hillsides along spring-fed ravines. The name alludes to the fringe around the cup of the acorn, which is sometimes very large. The tree usually has a broad top of heavy spreading branches and a relatively short body. In maturity it attains a diameter of five feet or more and a height of over eighty feet.



BURR OAK

Illustrations, one-third natural size

The **bark** is light gray and is usually broken up into small narrow flakes. The **leaves** resemble somewhat those of the common white oak, but are much larger and have a pair of deep indentations on their border near the base, and wavy notches on the broad middle and upper portions of the leaf. They range from six to twelve inches long and three to six inches wide. The **fruit**, or acorn, is a nut set deeply in the fringed cup. It is usually one inch or much more in diameter but varies widely in respect to size and the degree to which the nut is enclosed in the mossy fringed cup.

The **wood** is heavy, hard, strong, tough and durable. It is used for much the same purposes as the other white oaks—for lumber, crossties, and fuel.

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TEXAS FORESTRY ASSOCIATION WILL MEET JULY 26

NEW FORESTRY LEGISLATION

The Forty-Sixth Texas Legislature enacted three laws of interest to timberland owners. Senator John S. Redditt of Lufkin sponsored all three measures while a number of representatives from East Texas rendered valuable assistance in securing favorable consideration by the House.

Senate Bill No. 33 requires purchasers of logs, staves, and pulpwood to obtain a bill of sale therefor from the seller. Timber stealing has become more prevalent during the past few years and presents a serious hazard in connection with the production of timber as a crop. This is especially true when timberland owners practice forestry and wish to produce larger and more valuable trees. It is expected that the law will materially reduce timber trespass.

A companion bill (Senate Bill No. 34) increases the penalty for cutting merchantable timber without the consent of the owner. The relatively small fine stipulated in the statutes was not sufficient to prevent trespass of this character. The bill passed by the Legislature provides a penitentiary sentence of from one to five years and is in line with penalties provided for stealing other kinds of property.

Senate Bill No. 102 increases a maximum fine for wilfully setting fire to woods, forests, fences, and grass on lands owned by another; provides for an increased fine and optional jail sentence for wilfully setting fire to turpentine orchards, and increases the maximum fine for negligently causing fire to spread to turpentine orchards.

The enactment of the above mentioned legislation will undoubtedly assist in advancing the broad program of producing timber as a crop in East Texas.

Chief Forester



F. A. Silcox, chief, U. S. Forest Service, Washington, D. C., will deliver the main address at the Texas Forestry Association meeting in Nacogdoches on July 26.

SOUTHLAND HIRES CHEMIST

Mr. E. L. Kurth, president of Southland Mills, Inc., Herty, Texas, announced that his company had hired Dr. Charles Carpenter, former technical director of the Herty Foundation Laboratory at Savannah, Georgia, as chemist for the new mill, which will be the first in the South to manufacture newsprint from southern pine.

The average per capita lumber consumption in Texas for 1936 was 167 board feet.

25TH ANNIVERSARY MEETING AT NACOGDOCHES

Chief Forester Silcox to be Main Speaker; Public is Invited

The Texas Forestry Association will hold its 25th anniversary meeting at Nacogdoches on Wednesday, July 26. The one-day session will convene in the Aikman Gymnasium of the Stephen F. Austin State Teachers College. The program will get underway at 10:00 A. M. Heading the program of nine speakers will be F. A. Silcox, chief of the U. S. Forest Service, Washington, D. C.

The theme of this year's meeting will emphasize the importance of forestry in conservation, land use planning, and industrial expansion, D. C. Kenley, president of the Association, stated. "The influence of forests in developing sound conservation practice and planning the proper use of our land in the State is gaining increased recognition," he said. The new forest industries being established in East Texas will help to solve unemployment problems, develop new uses and markets for forest products, and return to the local and the State governments a considerable amount of new taxes, Mr. Kenley further stated. He said that Mr. Silcox will discuss many of these features from the national standpoint, while the various speakers from Texas will outline the State's responsibility.

Announcements have already gone out to Association members and a number of East Texas civic groups, chambers of commerce, legislators, and other public officials. Advance registrations indicate that the meeting will be the largest in the history of the Association. Mr. Kenley stated

(See MEETING on Page 2)

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MEETING—

(Continued from Page 1, Col. 3.)

that the public is invited to attend the sessions.

The Nacogdoches Chamber of Commerce has been handling the local arrangements for the convention, under the direction of Lacy H. Hunt, president, and Joe Mock, secretary.

Forestry Committee Meeting

To place special emphasis on the Association meeting, the forestry committee of the East Texas Chamber of Commerce will hold a special meeting on Tuesday afternoon, July 25. Plans for community forest development in East Texas will be mainly discussed. The forestry committee includes a membership of 22 prominent East Texans. Lacy H. Hunt is president, and Elmore R. Torn, forestry and agricultural director of the East Texas Chamber of Commerce, is secretary.

Association 25 Years Old

The Nacogdoches meeting will celebrate the twenty-fifth anniversary of the Texas Forestry Association, which was organized in 1914 by W. Goodrich Jones of Waco and a group of public-spirited citizens who realized the need for a constructive forest program in Texas. It was largely through the efforts of the Association that the law was passed in 1915 creating the Texas Forest Service. The Association has contributed much towards forestry in the State.

The Texas Forestry Association is working on the following program: creating a public interest on the subject of tree growing within the State; protection of the forests of Texas from fire and destructive insect pests and diseases; promoting the perpetuation by wise use and by reforestation of cut-over and abandoned lands; promoting the growing of trees as one of the most valuable crops of the State; obtaining the enactment of equitable laws for the taxation of forest growing lands; maintaining forest cover on non-agricultural lands in principal watersheds to prevent erosion and silting up of reservoirs; encouraging planting trees on farms as windbreaks and as woodlands; working towards more beautiful cities by encouraging tree planting; emphasizing the relationship between forests and wildlife and their value to the State; creating an interest in Arbor Day observance in the schools; securing passage of advisable forestry legislation and adequate support for state forestry activities.

Association Officers

Present officers in the Association are: D. C. Kenley, Lufkin, president; W. Goodrich Jones, Waco, president-emeritus; A. W. Henderson, Jefferson, J. R. Keig, Beaumont, Victor Schoffelmayer, Dallas, vice presidents; S. L. Frost, College Station, secretary-treasurer. Legislative committee: O. M. Stone, Jasper, chairman; Hon. Carl Bergman, Corrigan; E. J. Fountain, Jr., Houston; E. L. Kurth, Keltys; J. W. Oliphint, Huntsville; Paul T. Sanderson, Trinity; E. O. Siecke, College Station. Forty-seven Texans are serving as directors in the Association.

PROGRAM

MORNING SESSION
Aikman Gymnasium
Stephen F. Austin State Teachers College

10:00—**Welcome—**
Lacy H. Hunt, President, Nacogdoches Chamber of Commerce.

10:10—**President's Address—**
D. C. Kenley, Lufkin.
Appointment of Committees.

10:30—**Twenty-five Years of Forestry in Texas—**
Jack C. Dionne, Publisher, Gulf Coast Lumberman, Houston.

11:00—**Texas' Newsprint Mill—**
E. L. Kurth, President, Southland Mills, Inc., Lufkin.

11:30—**Texas State Forestry—**
E. O. Siecke, Director, Texas Forest Service, College Station.

12:00—**Adjournment for Luncheon—**
(Luncheon to be served in College dormitory cafeteria.)

AFTERNOON SESSION
Aikman Gymnasium
Stephen F. Austin State Teachers College

1:30—**Address—**
F. A. Silcox, Chief Forester, U. S. Forest Service, Washington, D. C.

2:30—**Forestry on the Farm—**
Thomas P. Walton, member of Texas Agricultural Land Use Planning Committee, Groveton.

2:50—**Conserving Our Wildlife—**
Dr. W. P. Taylor, Leader, Texas Cooperative Wildlife Service Research Unit, A. & M. College of Texas.

3:10—**Forestry Programs for the Chambers of Commerce—**
Elmore R. Torn, Agricultural and Forestry Director, East Texas Chamber of Commerce, Longview.

3:30—**Report of Secretary-Treasurer.**
Report of Committees.
Election of Officers.

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TEXAS FORESTRY ASSOCIATION MEETINGS

1914 - 1939

Year	Place of Meeting	President
1914*	Temple	W. Goodrich Jones
1915	Houston	W. Goodrich Jones
1916	Dallas	W. Goodrich Jones
1917	Waco	W. Goodrich Jones
1918	Dallas	W. Goodrich Jones
1919	Dallas	W. Goodrich Jones
1920	No Meeting	W. Goodrich Jones
1921	No Meeting	W. Goodrich Jones
1922	Houston	W. Goodrich Jones
1923	Austin	Hon. R. F. Burges
1924	Lufkin	Hon. R. F. Burges
1925	No Meeting	R. A. Gilliam
1926	Houston	R. A. Gilliam
1927	No Meeting	R. W. Wier
1928	Lufkin	R. W. Wier
1929	Beaumont	E. L. Kurth
1930	Beaumont	O. M. Stone
1931	Lufkin	Leonard Tillotson**
		Paul T. Sanderson
1932	No Meeting	Paul T. Sanderson
1933	No Meeting	Paul T. Sanderson
1934	State Forest No. 1	Paul T. Sanderson
1935	Huntsville	J. W. Oliphint
1936	Lufkin	J. W. Oliphint
1937	No Meeting	J. W. Oliphint
1938	San Augustine	H. M. Seaman
1939	Nacogdoches	D. C. Kenley

*Organized.
**Mr. Tillotson died on August 31, 1931, and Mr. Sanderson, who was serving as vice-president of the Association, became president.

ZAVALLA F. F. A. CHAPTER WINS AREA 7, FORESTRY CONTEST

The Zavalla Chapter of the Future Farmers of America was the winner in the final scoring of the 1938-39 Forestry Contest for Area 7 of the Department of Vocational Agriculture, R. A. Shaw, area supervisor, announced. Most of the 33 chapters in Area 7 and over 200 individual members of the chapters had forestry plots entered in the contest.

The winner was picked from all competing chapters by a process of elimination in which the two leading chapters of the Area were selected and their work carefully evaluated by a representative of the Texas Forest Service which cooperated in conducting the contest. A great deal of credit is due H. G. Swift, who is the vocational agriculture teacher at Zavalla and acts as the chapter advisor. Mr. Swift became particularly interested in forestry last year through his attendance at the summer course in forestry conducted by the Texas Forest Service at State Forest No. 1, near Kirbyville.

Second place was won by the Nacogdoches Chapter of which W. L. Jones is the advisor and vocational agriculture teacher.

The contest presented a real challenge to the competing chapters, containing as it did all the elements of a well rounded forestry program of protection, reforestation, management, and other contributing activities. In order to qualify for the contest every member of the chapter was necessarily required to perform a definite part of the work and the credit for the standing of each chapter can be equally distributed throughout the chapter membership.

Individual Winners

Along with and parallel to the Chapter Contest, an individual forestry contest was in progress through the year. Members of the Zavalla Chapter captured the three top rankings in this phase of the contest, which in fact was a factor contributing much to the chapter victory.

Ralph Ruth placed first with J. W. Crawford second and James Moses third. The individual competition was exceptionally keen as only five points separated each place. The winner, Ralph Ruth, received honorable mention for his work in a similar contest which was held during the preceding year.

This Area 7 Forestry Contest is an annual contest and each year shows a greater interest on the part of the F. F. A. Chapters and a greatly improved standard of accomplishment. Huntington Chapter won first place in last year's contest.

Winning Plot



This plot, managed by the Zavalla Future Farmers, won first place in the recent Forestry contest conducted in Area 7, by the Department of Vocational Agriculture and the Texas Forest Service. The boys are shown piling pulpwood which they cut from their tract as an improvement cutting.

MARYLAND TO PURCHASE FORESTS

The acquisition of additional forest and park land for Maryland is assured under a $100,000 bond issue recently passed by the State Legislature for "acquisition, development, and improvement of state forests, parks, and recreational areas," according to a recent announcement by State Forester F. W. Besley. While providing for the acquisition of additional land, the authorization will also allow a considerable amount of improvement work on existing areas.

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RARE BOOK GIVEN MUSEUM

Gift of W. Goodrich Jones

A very rare tree book, printed in England in 1670, has been given the Texas Forest Service by W. Goodrich Jones of Waco, president-emeritus of the Texas Forestry Association. The full title of the book is "Sylva, or a Discourse of Forest Trees, and the Propagation of Timber in His Majesties Dominions," by John Evelyn. The book given the Service is the second edition original copy, the first edition having appeared in 1664.

The "Sylva" served in its day as a foresters manual, and although now its chief value depends mainly on its age and literary character, an infinite amount of suggestion for present day practice is found in its pages. It covers mainly propagation of trees, description of various species, pruning, felling timber, uses of timber, seasoning lumber, and laws and statutes for preservation and improvement of woods. Several illustrations are particularly interesting.

The book will be placed in the historic museum of the Texas Forest Service at College Station. This is not Mr. Jones' first gift to the Service. On previous occasions he has given the fountain pen used by Governor Ferguson to sign the original bill creating the state department of forestry in Texas in 1915, several valuable letters and photographs, and an electric clock for the division of forest protection office at Lufkin. Mr. Jones is known to forestry people as the "Father of Forestry in Texas," since it was largely through his efforts and foresight that the Texas Forestry Association was organized in 1914, which organization the following year helped pioneer through the original state forestry bill.

VALUABLE TREE

A farmer near Elberton, Georgia, cut down a big oak tree recently and this is what he got: three 'possums, each weighing 8 pounds; five fat squirrels; 20 pounds of honey; and two cords of wood.

INDUSTRIAL UTILIZATION OF WOOD TO BE DISCUSSED AT CHEMURGIC SYMPOSIUM

A Chemurgic Symposium will be held under the direction of the Sam Houston State Teachers College at Huntsville, Texas, from July 18 to August 19. The Texas Forest Service has been invited to participate by presenting the subject of "The Industrial Utilization of Wood."

The lecture and discussion on this subject will be presented on Thursday, August 3, and will be led by Paul W. Schoen, Assistant Forester of the Texas Forest Service.

Advance information in regard to the Symposium indicates that a fine range of material pertaining to the chemurgic field will be presented by representatives from many organizations and services that are vitally interested in present day chemical research.

The registration for the course includes many of the science teachers and administrators of the area centering around the Teachers College at Huntsville.

Perricone Quadruplets Visit Fire Tower



"We didn't know there were so many trees," quarteted the famous Perricone quadruplets, after a climb up the Texas Forest Service lookout tower near Votaw, in Hardin County, under the guidance of Perry Moye, forest patrolman. The boys, only known male quads in the world, spent the day exploring the Big Thicket area, along with their parents and Larry J. Fisher, official photographer for the Big Thicket Association. Reading from bottom to top are: Perry Moye, Anthony, Bernard, Carl and Donald. The boys are usually called "A," "B," "C," and "D," for short.

(Photo courtesy Larry J. Fisher)

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Controlling Southern Pine Beetle Infestations

East Texans who have noticed dead or dying pine trees showing up in the forest, can generally attribute the death of those trees to little insects about one-eighth to one-fourth of an inch long. Two different species are the greatest pests in East Texas, the Ips beetle, and the southern pine beetle.

They are one of the accepted enemies of the forest, but ordinarily their attacks are insignificant and are not cause for serious worry on the part of timberland owners. However, where large numbers of trees have been weakened by drought, fire, storms or other factors, bug infestations may reach the epidemic stage and carry their attack to healthy trees as well as the weakened ones. Under such condition, concentrated action by timberland owners is necessary.

Beetles Are Fast Workers

The beetles bore through the bark of trees, eat out a small chamber in the wood layer just under the bark, and lay their eggs. The little worms hatch and eat out more of the cambium layer, forming galleries as they go. Eventually they will girdle the tree, thus causing its death. The worm then goes into a resting stage and hatches into a beetle, which leaves the tree through the original entrance. This complete cycle only requires 30 to 40 days; thus these beetles are capable of producing as many as five generations during the spring, summer and autumn.

The first evidence of attack is a browning of the needles which deepens to a reddish-brown color. Small pitch tubes and reddish sawdust-like borings may be observed on the bark. When there is doubt as to what is causing a tree to die, examination under the bark in the vicinity of the pitch tubes will positively determine whether or not bark beetles are responsible. The galleries in the wood are the evidence which points to beetle attack.

Control May Be Costly

Control measures against beetles after they have reached the epidemic stage are costly, whereas a few simple prevention measures taken at the first evidence of attack will keep the beetles in check. Prevention measures recommended are as follows:

1. Carefully keep check on forest areas during periods of excessive drought, following severe electric storms, or after logging operations have suddenly stopped. Infested trees should be immediately salvaged.
2. Harvest damaged or weakened trees. Beetles like them and one such tree can serve as the starting point for a heavy infestation.
3. Beetles are attracted to areas burned by forest fires. Forest fire prevention is a simple and effective prevention measure.

Recommended Control Measures

Where beetle infestations have already reached a serious stage, control measures should be undertaken immediately to prevent the loss of a lot of infested timber and to check the spread of the attack. Control measures are as follows:

1. Where practicable, cut all infested timber, haul it immediately to the mill and convert it to lumber. The slabs should be burned.
2. Where harvesting is not possible, fell the infested tree and remove and burn the bark. Be careful the fire does not spread to the forest.
3. In logging operations, a preventative measure against the Ips beetle is to keep the slash away from the trunks of standing trees.
4. In midsummer, as a control measure on trees attacked by the southern pine beetle, infested trees may be felled and limbed in a place exposed to the sun. The heat from the sun's rays will kill the beetles in about three days. The logs should then be turned over until the entire trunk has been exposed to the sun.

SUBMARGINAL LAND TO FORESTS

Under a land utilization project aimed chiefly at conserving the soil, 15,000 acres of land are being purchased within the borders of Coffee County, Alabama, E. R. Henson, Chief of the Farm and Home Management Section, Resettlement Division, Resettlement Administration, reports. This consists of submarginal tracts unsuited to cultivation, and the land so acquired is being developed for forestry, wildlife conservation, and recreation. Abandoned fields which formerly produced cotton are now being planted to slash pine, longleaf pine, and loblolly pine, and natural reproduction is being encouraged and protected wherever possible. Fire protection is being developed for the whole area through the cutting of fire lanes and the introduction of other control measures.

In this purchase area, approximately 30 per cent of the land was at one time in cultivation. These sloping fields were cultivated until sheet and gully erosion made it necessary to abandoned them. This highly destructive practice has prevailed in the northern half of Coffee County until the productive capacity on a large portion of the tillable area has been completely destroyed.

Authorities estimate that only by restoring this region to forest growth again can the economic and social life there be revived and put on a sound basis.

PASADENA MILL TO MANUFACTURE PAPER

The Champion Paper and Fibre Company at Pasadena plans to build a $3,000,000 addition to its plant to manufacture high grade gloss and bond paper, according to a recent announcement by W. R. Crute, manager. He said that construction will be delayed until after a meeting of the preferred stockholders in August, but expected that the new plant should be in operation very soon after June 1, 1940.

The Champion's mill at Pasadena was erected in 1936, and has been producing paper pulp mainly from Texas woods since 1937. No paper was processed at the mill, however.

Mr. Crute stated that a large portion of the magazine print and bonds would be used by the magazine "Time." The remainder of the mill output will go into the regular trade channels.

Balsa, one of the world's lightest woods, was named from the Spanish word meaning raft.

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TRINITY CHAMBER OF COMMERCE SPONSORS FORESTRY SHOWS

During May and June the forestry committee of the Trinity County Chamber of Commerce cooperated with the Texas Forest Service in conducting a series of educational forestry lectures and moving picture shows in rural communities throughout the county. At the thirteen meetings arranged, attendance totaled 1,690.

M. C. Taylor, manager of the Chamber of Commerce, arranged for many of the meetings, in addition attending each meeting and speaking in behalf of the forestry program in the county. Several of the June meetings were scheduled by J. M. Cooper, county agent at Groveton. John R. Thigpen, educational assistant for the Texas Forest Service, conducted the evening program and presented the movies.

The entire program sponsored by the Trinity County Chamber of Commerce was very successful. Mr. Taylor stated: "People are taking a great deal of interest in our timber resources, and I am happy in behalf of the forestry committee of our Chamber of Commerce to tell you that we deeply appreciate what the Texas Forest Service is doing and also the wholehearted support given by Mr. Thigpen."

FOREST EMPLOYMENT IN GERMANY

An example of the amount of employment afforded by managed forests in Prussia is that of a 60,000-acre private forest. The forest is mostly pine on poor soil and relatively light stands. The annual cut amounts to 2,475,000 cubic feet. Employment is offered to 54 forest officers (including office force), and 360 permanent workers not all year long. Besides these, there are 25 officials and 324 workers in saw mills and pulp and paper plants. The owner estimates that about 74 acres of this kind of forest will furnish a full year's work for one person in woods and mills. Approximately 2,200 persons, including dependents, gain their living from work in the forests and industrial plants connected with it.

NEW STATE FORESTERS

Announcement has been made of the appointment of Fred H. Lang as state forester of Arkansas to succeed Charles A. Gillett, who becomes industrial forester for the Seaboard Railway, and of the naming of Brooks Toler as state forester of Alabama, succeeding Page S. Bunker. Mr. Lang had served as assistant state forester of Arkansas since 1937, and Mr. Toler, prior to his new appointment, was extension forester of Mississippi. At the same time Ellery A. Foster, director of forestry in Minnesota since 1937, announced that he had tendered his resignation.

Tree Grows on Stump



This 12-year-old longleaf pine is growing out of an old longleaf pine stump in Sabine County, Texas, about a quarter of a mile south of Yellowpine, on State Highway No. 87. Mr. Dan Easley, formerly a forest patrolman with the Texas Forest Service, offers a comparison of the tree's height. Mr. Easley is now a lookoutman for the U. S. Forest Service. His lookout tower shows in the background.

In 1907, Texas sawmills produced over 2¼ billion board feet of lumber, placing the State in third rank among lumber producing states of the Nation.

PINE TREE GROWS ON STUMP

From the top of a tall longleaf pine a little seed dropped from its cone. It was just like a lot of other seeds that were shed by the mother tree, but it was destined for a very different future. The seed fell on the top of an old longleaf pine stump. This little drama in Nature took place over twelve years ago, about 1927.

With the rains and the sun the seed sprouted a tiny root that forced its way down through the decaying wood of the old stump, from which it got its food to start a tiny seedling. Protected and sheltered, the tree grew rapidly and today reaches to a height of thirty feet and is eight inches in diameter.

This interesting tree is located in Sabine County, Texas, about a quarter of a mile south of Yellowpine, on State Highway No. 87. The old longleaf pine stump on which the tree is growing, once a big tree itself, was cut down in 1890 and was estimated to be 200 years old at that time. Indirectly, then, the present tree and the old stump date their origin back at least 250 years to the 1680's when LaSalle was making his explorations in the State.

Dan Easley has watched the tree grow up. Mr. Easley was once a patrolman for the Texas Forest Service and manned the lookout tower at Yellowpine. He started with the Service in August, 1925, and continued as patrolman until 1935 when the U. S. Forest Service purchased land in Sabine County for National Forests, at which time he was hired by the federal government as lookoutman.

HOW TO POISON POISON IVY

The Connecticut Agricultural Experiment Station at New Haven has issued a circular on poison ivy. The formula which they give for fighting the pest is sodium chlorate, mixed in the proportion of three-fourths of a pound of the chemical to a gallon of water. The solution is to be sprayed on the plants when in full leaf. The ground does not need to be saturated, as the plant absorbs enough through the leaves and stems to do the killing.

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LOW STUMPS vs. HIGH STUMPS

Stumps cut above a practical average height are an unnecessary waste of wood fiber. To illustrate this point, the amount of wood in board feet left in a stump averaging 16 inches in diameter and 22 inches high is equivalent to the total board foot volume in a tree nine inches in diameter at breast height. The loss of wood resulting from high stumps cut in East Texas in a year's time would reach enormous proportions.

In most cases the cutting of high stumps can be avoided. Generally speaking, sawlog and tie stumps should not exceed 12 inches in height; pulpwood stumps should not exceed 8 inches in height. In both cases stumps should be cut lower if possible. Cutting pulpwood stumps low to the ground will permit easier movement of trucks through the woods while picking up wood, thus reducing handling charges. It is of course recognized that defective butts with rot or fire scar, or butts with unnatural swell, will tend to result in higher stumps, but as a rule such trees are in the minority.

Wood Fiber Loss in High Pulpwood Stumps

The following table shows the loss of wood fiber in cubic feet for stumps cut over 8 inches high above the ground and the number of pieces of this wood required to make a cord of 90 cubic feet solid wood content. The table is based on trees averaging 10 inches in diameter at top of stump.

Stump Height, Inches	Wood Loss in Inches	Wood Wasted (Cubic Feet)	No. Stumps to Make a Cord
30	22	1.09	82
24	16	.79	114
20	12	.60	150
16	8	.45	200
12	4	.18	500

Wood Fiber Loss in High Sawlog Stumps

The following table shows the loss of wood fiber in board feet for stumps cut over 8 inches high above the ground and the number of pieces of this wood to make 1,000 board feet. The table is based on trees averaging 16 inches in diameter at top of stump.

Stump Height, Inches	Wood Loss in Inches	Wood Wasted (Board Feet)	No. Stumps to Make 1,000 Bd. Ft.
30	22	16	62
24	16	12	83
20	12	9	111
16	8	6	166
12	4	3	333

Although the loss from cutting one or a few high stumps is not so apparent from the above tables, it can be seen that over a year's time or on any one cutting area the loss would accumulate into considerable proportions. Many operators are cutting low stumps and find that it pays. There are many ways to assist in developing forest conservation, and one of the best ways, after a tree has been selected for cutting, is to saw a low stump. The low stump move is one that requires the coordinated support of grower and operator. It will step up the profits to be derived from forest land. High stumps are a waste and should be avoided.



NO WASTE HERE

Careful elimination of waste and good utilization practices should begin in the woods. In the recent timber cutting demonstration project, conducted at State Forest No. 3, in Cherokee County, it was specified that all stumps be cut 12 inches or lower. Here is one of the stumps.

FARMER MAKES VIOLINS FROM ETEX WOODS

When Washington E. Whisenant, Henderson County farmer, tells his friends that the "fiddle crop is good," it is not an idle jest. For Whisenant, a familiar figure at fiddling contests, not only grows his own but supplies a critical clientele with instruments made of wood cut from his 181-acre farm.

"Violins made of East Texas maple, cedar, bois d'arc and walnut have a tone that will compare favorably with the finest Strad," says Whisenant.

Though most of his violins are made of East Texas woods, some are made of imported wood. And when the two instruments are shown side by side at fairs and exhibitions, the East Texas product invariably wins the highest awards.

Turned Out Hundreds

A crude workshop in the rear of his farm lot is Whisenant's factory. During the seven years he has been making violins for the trade he has turned out hundreds of instruments.

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VIOLINS—
(Continued from Page 7, Column 3)

"I made no attempt to keep records," he explains, "and have lost track of the count."

Unlike the traditional violin maker, his art is not inherited. Reared on a farm, he made his first violin when he was about thirteen years old out of the ends of an old oil bucket crate. Pleased with his handiwork, he made a few other instruments as a hobby, then drifted into some other fad. It was not until he was fifty-five years old that he again turned to violin making—this time as a source of revenue. He is now sixty-two.

"The only instruction I ever had in violin making came out of books," he says. "Of course, I have studied the design of violins all my life and the different kinds of wood.

"Wood that is properly aged undoubtedly makes the best instruments. However, the aging process through artificial means is possible. Through this process I have imparted to six-year-old wood a tonal quality that is equal to fifty-year-old wood."

Phony Strads

Whisenant says that a good many of the so-called Stradivarius violins in use today are merely copies, and would suffer in comparison with a well-made instrument of modern manufacture.

"If Stradivarius made all the violins accredited to him," says the East Texan, "he would have to live several hundred years and his output would have filled a good-sized warehouse."

It takes Whisenant at least four days to make the simplest type of violin. He boasts that they are lighter than the average—each weighing from eleven to twelve ounces.

His wife has the first violin he made after he took up the work as a livelihood. Money could not buy it.

—Dallas Morning News

SPRAY BLOWN MILES INLAND "BURNS" TREES

Storrs, Connecticut—Salt spray lashed as far as 45 miles by the 1938 hurricane has caused great damage to trees in Eastern Connecticut, a survey by Albert E. Moss, professor of forestry at the Connecticut State College, reveals.

The wind blown brine, the professor stated, had the "same effect as dumping an ice cream freezer on the lawn." The salt concentration on the leaves caused plasmolysis, or a drying out of the cells, he explained.

White pines, the most sensitive kind of tree, were affected as far away as Pomfret. In many places they looked as if they had been fire-killed, so thoroughly had they been defoliated. It was not possible at that time to determine how many would survive but Professor Moss doubts whether many will live.

Ground juniper was the next heavily damaged, other sensitive trees being red cedar and hemlock. The most resistant tree to salt is the Colorado blue spruce, which by a paradox of nature is a native of the Rocky Mountains. Some of the spruce on the Rhode Island shore was entirely unaffected.

Dr. Raymond H. Wallace, associate professor of botany, confirmed Professor Moss's report. A group of students in plant physiology at the college are experimenting now to determine the exact process involved in the defoliation.

A BILLION-DOLLAR INDUSTRY

Wood-Using Industries Rank Fifth in National Importance

Industries in the United States using wood as their basic material paid more than a billion dollars in wages and salaries in 1937, according to a study compiled by the Forest Products Division, Department of Commerce.

The salaries and wages were approximately a quarter of the total value of the products of the lumber and allied products industries. Of the 14 major industries in the United States in 1937, as classified by the Bureau of Census, the lumber and allied industries had the highest ratio of wages paid out to value of products.

A total of 1,051,478 employees in the lumber and allied industries, wood pulp and paper industry shared $1,154,629,263 in wages and salaries during 1937. Wood pulp and paper industries gave employment to 297,258 persons with salaries and wages amounting to $391,016,099.

MEXICAN WHITE PINE
(Pinus strobiformis Engelm.)

This species of white pine grows in the Guadalupe Mountains in west Texas. It is also native to many mountains in southern New Mexico, southern Arizona and adjacent parts of Mexico.

The **bark** is deeply broken into flat plates and of a reddish-brown color. The young twigs are slightly hairy, becoming smooth. The leaves, or "straws," like those of all the white pines, are in clusters of five, light green, slender but stiff, from four to six inches in length.



MEXICAN WHITE PINE
(Fruit and Leaves, one-half natural size)

The two kinds of **flowers**, or "bloom," are borne separately on the same tree, and like all of the pines the **fruit**, or cones, requires two years to mature. The cones are mostly from five to eight inches in length, made up of thin scales whose tips turn backward and are not armed with prickles.

The **wood** is medium hard, strong, reddish white, with nearly white sapwood. It would be a valuable wood for various purposes if the quantity were not so limited.

In 1936, lumber consumption in Texas amounted to over a billion feet of which 60% was derived from within the State and 40% imported.

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Texas Forest Festival To Be Held October 9 - 14

COUNTY AGENTS STUDY FORESTRY

District Agent T. B. Wood's Men Hold Five-Day Course

Twenty-one county agents in District Agent T. B. Wood's territory participated in a five-day short course in forestry given by the Texas Extension Service and the Texas Forest Service at State Forest No. 1 near Kirbyville. The course opened on September 25 and continued through September 29.

The purpose of the course was to familiarize the county agents with general forestry principles that will help them advise farmers in their communities on the proper handling of the farm woods as a distinct and necessary part in the whole farm management program. Wood's district includes nineteen southeast Texas counties. Many of the farms in this area have as much as 50 percent to 65 percent of the farm in timber. Foresters and agricultural workers are in agreement that the farmer and his woodlot need more advice on the proper cutting and harvesting of forest products and point to the fact that growing timber as a crop is just as important a part of farm management as growing other agricultural commodities.

District Agent Wood was in charge of all necessary arrangements in connection with the course. Forestry instruction was given by members of the Texas Forest Service and the farm forester. Subjects covered were tree identification, forest planting and nursery practice, farm preservation of fence posts, woodland improvement and protection, timber estimating, financial returns for growing timber

(See AGENTS on Page 2)

TWO PULPWOOD CUTTING DEMONSTRATIONS SCHEDULED

One at Avinger, Other at Conroe

Two demonstrations to outline recommended cutting practices for the production of pine pulpwood in East Texas will be held in October by the Texas Forest Service. One meeting is scheduled for Avinger in Cass County, the other for Conroe in Montgomery County.

The Avinger demonstration will take place on October 11 at 2:00 P. M. The cutting area is located one and a half miles east of town on Highway No. 49, just south of the L. A. & T. railroad. The county agents of Cass and Marion counties and the chambers of commerce in Linden and Jefferson are cooperating on the project.

The Conroe demonstration will be held on October 23, starting at 10:00 A. M., on State Forest No. 2. It will be conducted in conjunction with the third annual forestry day arranged by the chamber of commerce and county agent of Montgomery County.

Both demonstrations will be handled to show just what trees should be cut for pulpwood and how proper cutting practices will improve timber stands and increase growth rates of remaining trees. Selective logging, fire protection, and a number of other subjects important to timber owners will also be discussed.

Featuring in this issue . . . . .

●

TEXAS STATE FORESTS . . . on page 3

Festival Celebrates Second Year at Lufkin

The Texas Forest Festival Association, created for the purpose of publicizing the Texas forests to the State and the Nation, will hold its second annual Forest Festival in Lufkin, October 9 to 14, inclusive.

The Festival being held at Lufkin is a "medium of contact," the means chosen for arousing public interest, or increasing it, and emphasizing that the future welfare of East Texas is closely interwoven with a sound reforestation program. The livelihood of every individual in East Texas, no matter what his occupation may be, is dependent upon timber. Were it not for timber the communities of East Texas would not have reached their present state of development and the income of East Texas would not be as great as it is or as it has been; consequently, the welfare of those dependent upon community income would be materially hampered. Thus it was that the Texas Forest Festival Association was created so that forestry could be given the credit it so justly deserves.

To Open with Parade

Opening the Forest Festival, Monday, October 9, at 3:00 P. M., will be a mammoth parade portraying various forestry activities disclosing to the public's eye the vast forest resources of East Texas in miniature form. At the present time indications are that this parade will exceed anything of its kind ever ventured in East Texas heretofore. It will truly represent the large industry by which it is sponsored.

A forestry pageant, utilizing the services of more than 400 people, on the night of October 9, will present

(See FESTIVAL on Page 2)

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FESTIVAL—

(Continued from Page 1, Col. 3)

the history of the timber industry under Texas' six flags. This pageant will be centered around the queen of Texas forests and the duchesses from the various communities of East Texas. Following the pageant and coronation ceremony at the Festival grounds, Queen Sylva II and members of her royal court will be honored at the Queen's Ball.

Many Forestry Exhibits

At the Festival, forestry exhibits will be developed that will prove intensely interesting to the Festival-going public. They will be both educational and inspirational in nature, designed for the purpose of putting over a lesson in good forestry practices and showing the relation between forestry and agriculture.

The main forestry display will be housed in the Texas Forest Products building, constructed last year by the Texas Forest Service and C. C. C. Part of the forest products exhibit arranged by Texas timberland owners for the 1936 Centennial at Dallas is on display here. Other portions of the building house a collection of 60 different species of Texas woods and leaves, photographs, wooden ware novelties, and many other forestry features.

Thursday, October 12, will be celebrated as "Forestry Day" at the Festival. Special programs have been arranged honoring State officials, lumbermen and foresters. Invitations have been sent out to these various groups and it is expected that many will attend.

Along with the educational feature, a program of entertainment and amusement has been arranged that will appeal to all classes of people in every walk of life. A rodeo with more than 40 participants will be featured in the rodeo arena built by the Texas Forest Festival for this purpose at a cost of several thousand dollars. This rodeo will begin on the evening of October 10 and continue through the evening of October 14. Dee Lang's Famous Shows and Rides will be on the Midway every day and night during the Festival and will offer thrills and chills to the Festival-going public.

TENTATIVE PROGRAM
TEXAS FOREST FESTIVAL
Lufkin, Texas

Monday, October 9.
3:00 P. M.—Parade of Forestry.
5:00 P. M.—Band Concert.
6:00 P. M.—Barbecue for Visiting Bands.
7:30 P. M.—Pageant, "Texas Under Six Flags".
10:00 P. M.—Queen's Ball.

Tuesday, October 10—School Day, Boy Scout Day, Polk County Day, Trinity County Day, Tyler County Day, Jasper County Day.
9:30 A. M.—Judging Farm Exhibits.
10:30 A. M.—Judging Cattle, Poultry, and Hogs.
11:00 A. M.—Judging Art and Flower Displays.
2:30 P. M.—Texas Forest Festival Rodeo.
4:30 P. M.—School Children Singing Contest.

Wednesday, October 11—Old Settlers Day, Nacogdoches County Day, San Augustine County Day, Stephen F. Austin State Teachers College Day.
10:00 A. M.—Old Fiddlers Contest (Over 60 years of age).
11:00 A. M.—Young Fiddlers Contest (Under 60 years of age).
2:00 P. M.—Final Contest (Between old and young).
4:00 P. M.—Inspection of Forest Exhibits.
6:00 P. M.—Band Concert.
7:30 P. M.—Special Program by the Nacogdoches Junior Chamber of Commerce.

Thursday, October 12—Forestry Day, Lumberman's Day, State Official Day, Industrial Day, State Music Day, Sam Houston State Teachers College Day, East Texas Chamber of Commerce Day, Lufkin and Angelina County Day.
10:00 A. M.—Inspection of Forest Exhibits.
11:00 A. M.—Special Program for East Texas lumbermen.
2:00 P. M.—Program Honoring State and Federal Forestry Officials.
6:30 P. M.—Band Concert.
7:30 P. M.—Texas Forest Festival Rodeo.

Friday, October 13—Negro Day for all East Texas.
2:00 P. M.—Inspection of Exhibits.
3:00 P. M.—Contest, Singing between the Different Negro School Classes.
4:00 P. M.—Contest, Negro Quartets.
4:30 P. M.—Contest, Negro Speaking (from the 8th grade down).
5:00 P. M.—Contest, Negro Speaking (From the 8th grade up).
6:00 P. M.—Old Time Negro Sing Song.

Saturday, October 14—Farmers Day, 4-H Club Boys and Girls Day, Home Demonstration Club Day, F. F. A. Boys Day.
10:00 A. M.—Awarding Prizes.
4:30 P. M.—Band Concert.
6:00 P. M.—Reception Arabia Temple of Houston.
7:00 P. M.—Band Concert Arabia Temple Band of Houston.

AGENTS—

(Continued from Page 1, Col. 1)

as a crop, pulpwood requirements (by E. J. Downey, Champion Paper and Fibre Company), thinnings and harvest cuttings, marketing and manufacture, and farm utilization of forest products.

District Agent Wood anticipates holding a similar school next year for additional instruction in the field of practical forestry since it is realized that it is impossible to adequately cover in a week's time even the preliminary phases of forestry that would be necessary to use in advising the farmer.

County agents registered for the course were O. C. LaGrone, Lufkin; J. H. Sandlin, Anahuac; C. M. Heald, Rusk; W. P. Barrett, Kountze; S. W. Monroe, Jasper; J. F. Combs, Beaumont; G. L. Hart, Liberty; A. B. Ford, Nacogdoches; J. B. Dorman, Newton; A. J. McKenzie, Orange; W. H. Walker, Carthage; W. S. Childerss, Livingston; S. L. Neal, Henderson; P. S. Goen, Hemphill; H. C. Hutson, San Augustine; C. M. Reed, Cold Springs; J. O. Moosberg, Center; J. M. Cooper, Groveton; M. S. Hyde, Woodville; R. H. Mathis, assistant county agent, Henderson; Alfred Crocker, assistant county agent, Rusk.

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TEXAS STATE FORESTS—serving as field laboratories to help point the way to Texas timberland owners.

In five widely separated areas in East Texas the State, through the Texas Forest Service of A. and M. College, is operating five State Forests. The purpose of these Forests is to grow the most valuable forest products in the shortest possible time, following practical forestry methods that can be duplicated by other timberland owners. The Forests serve as profitable demonstrations of permanent timber production. They are also used as field laboratories for best methods of renewing and managing successive timber crops of various Texas tree species. In brief, they are research and demonstration laboratories which point the way to Texas timberland owners, thus serving the forestry interests in the State in much the same manner that the agricultural experiment stations serve the farming and ranching interests. At the same time the State Forests provide a variety of local benefits and uses and will eventually contribute greatly to the forestry needs of the State.

The state forest idea is quite prevalent in most of the states in the Nation which maintain state forestry departments. The north and middle Atlantic States have led in this respect with progress gradually increasing in other sections of the country. Eighteen states have no state forest land. In the remaining thirty states there was in 1932 a total of 405 state forest units, embracing an area of 4,396,000 acres. An additional 2,232,000 acres were in process of acquisition. Only eight of these states have a smaller state forest acreage than Texas.

State Forests Should Increase

It is the general consensus of opinion among foresters of the Nation that the state forest acreage should be considerably increased. In the very comprehensive report submitted to the 73rd Congress of the United States in 1933, it was estimated that the states should acquire 90 million acres of land for state forests. In August, 1935, Congress passed the Fulmer law extending Federal aid to the states for the acquisition of state forests. Many considered this the most epochal law ever introduced to pave the way for major state forestry development. The 44th Texas Legislature passed an enabling act which would permit the State to cooperate with the Federal government on this project. However, Congress has not as yet appropriated the funds whereby such a program of state forest land acquisition could be developed.

First Texas State Forest

Realizing the importance and necessity of state forests to the development of the forestry program in Texas, the 38th Legislature provided funds for the purchase of a suitable area. On August 27, 1924, an area of 1,700 acres was bought in Newton County and being the first Forest was given the title of State Forest No. 1.

In 1925, two more areas were acquired. State Forest No. 2, of 1,633 acres, in Montgomery County, was purchased in August, and then in September the State turned over the 2,360-acre prison land in Cherokee County to the Texas Forest Service to be developed into a State Forest.

Two Forests Are Gifts

In December, 1929, John Henry Kirby of Houston presented the State with a gift Forest of 600 acres in Tyler County. He provided that net revenues from the Forest be used by the Former Students' Association of A. and M. College to create a fund for worthy boys at that institution. This area is State Forest No. 4.

In July, 1935, Houston County citizens and others acquired and presented to the State an area of 117 acres in north Houston County, known as State Forest No. 5.

Today the State Forest acreage totals 6,410 acres, representing five areas located in the three principal pine producing areas of East Texas (longleaf, loblolly, and shortleaf). In 1932 a timber survey conducted on four of the Forests indicated a sawtimber volume of 17 million board feet. Because of the fact that fires have been kept out of the Forests, and due to the wise handling of these areas, timber growth is increasing rapidly. Detailed management plans are being prepared for each Forest. These areas are being developed to the extent that funds will permit. Over 30 distinct research projects are underway covering many phases of the forestry field. Most of the projects are well marked with signs and adjacent to good roads. On some of the Forests, small areas have been provided for recreational purposes. The State Forests belong to the people of Texas and are always open for inspection and study. They are serving as special meeting places for farmers, timberland owners, chambers of commerce and other groups.

State Forest No. 1

This Forest is located about five miles southeast of Kirbyville, in Newton County. Most of its 1,700 acres are covered with longleaf pine. When the area was acquired in 1924 most of the pine had just been cut, and it presented a rather discouraging outlook for a future forest. However, a fence was built around the Forest to keep the hogs out, fire lanes plowed around the boundaries and through the area to keep fire out, and many open areas were planted to seedling pines. Today the Forest is a thing of beauty and surely definitely establishes in the visitor's mind the fact that wise handling of forest land pays. It presents a striking contrast to the land outside the Forest.

Some forty different areas, totaling 100 acres, have been planted to various species of pines. Slash pine, a species not native to the State, has been introduced, and the oldest plantation, started in 1926, is probably the most outstanding on the Forest. The planting stock has been grown in a small nursery located on the Forest. Seedlings are sold to private landowners interested in planting at the cost of producing them which averages $2.00 to $2.50 per thousand trees.

Other research and demonstration projects conducted on this Forest include: effect of fire, hardwood elimination in pine stands, growth and thinning studies, and tests of wood

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STATE FORESTS—

(Continued from Page 3, Col. 3)

preservatives. New projects are being added as the opportunity permits.

This Forest is also serving as a rural meeting and educational center for southeast Texas. The old C. C. C. camp has been developed with accommodations for 200 persons. Increasing demands for reservations in this unit indicate its popularity. A regional forester is in immediate charge of the Forest and is always glad to show visitors over the area.

State Forest No. 2

This Forest is located five miles south of Conroe and one mile west of U. S. Highway No. 75 in Montgomery County. Its 1,633 acres are principally covered with loblolly pine. The results of 15 years of fire protection are evident in the dense stand of young pine reproduction that has come in under the older trees. A forest tree nursery similar to the one at State Forest No. 1 is maintained on this Forest.

Most of the research work conducted on this Forest centers around the study of the natural timber growth, as compared to similar stands which have been thinned out or to other areas in which some of the trees have been pruned of old or needless branches. Results so far indicate a decided increase in growth in all types of stands due to protection from fire and similarly point to the advantages of thinning crowded stands to speed up the growth on the remaining timber. Both these features are of considerable importance in growing timber as a paying crop and assume greater value now with the new market for pulpwood.

Because of the vast amount of young pines seeding-in on the Forest, there has been little need for planting. Ten small individual plantations have been established, however, mainly to study their growth in this particular section of East Texas.

State Forest No. 3

From a timber volume standpoint, this Forest stands out far ahead of the other State Forests. On its 2,360 acres, a survey made in 1932 showed a sawtimber volume of over eleven million board feet. The Forest is located on State Highway No. 84, in Cherokee County, 1½ miles west of Maydelle.

The C. C. C. camp, located on the Forest from 1933 to 1937, engaged in a number of improvement measures such as road building and timber stand improvement. A new hot and cold bath creosote treatment was developed by the Service and a small treating yard set up to treat telephone poles for use in the forest protection telephone lines. A small recreational area with a lake and picnic ground has also been provided. State Forest No. 3, with its beautiful shortleaf pine timber clad hills, is a year-round picture of beauty, and in the spring the many dogwood trees which burst into bloom, attract hundreds of nature-loving tourists.

Early in 1939 a timber cutting demonstration project was initiated on a 40-acre tract. The area was divided into four ten-acre blocks. On each block the timber was cut by a different method, one plot to an 8-inch diameter, another to a 12-inch diameter, another to a 14-inch diameter, and the last was cut selectively. The four plots, side by side, present a striking comparison.

In 1938 the Texas Federation of Women's Clubs dedicated a 30-acre forest tract on the Forest to the cause of conservation of forest resources. The tract was named the Mewshaw Federation Forest and will be developed as a symbol of the Federation's interest in the aesthetic, human and best use value of Texas forests.

State Forest No. 4

This 600-acre Forest is located in the south end of Tyler County at Hyatt, adjacent to U. S. Highway No. 69. The Forest is entirely longleaf pine. It was fenced against hogs and today a wonderful growth of young longleaf pines is coming in.

One of the interesting features of this Forest is the slash pine plantations set out in 1932 and 1938. The earlier planting covers about 45 acres and the latter one about seven acres. Both plantations are growing rapidly. There is also a small tung oil plantation.

State Forest No. 5

Covering an area of 117 acres, this Forest is located 21 miles northeast of Crockett at Weches on State Highway No. 21, in Houston County. Its greatest attraction lies in its history since it was the site of the first Spanish mission, Mission San Francisco de los Tejas, established in 1690 and destroyed three years later. A replica of the old Mission has been erected by the Service. Other interesting features include the old spring reputedly the one from which the old mission drew its water, a lake, picnic areas and the winding roads and steep hills. Many claim this spot to be one of the most beautiful in East Texas.

FORESTRY COMMITTEE MEETS IN EAST

More federally owned forests to provide opportunities for gainful work by thousands now unemployed, extension of forest cover to retard and divert the flow of surface water, additional studies preparatory to control of tree diseases, federal regulation of all forest lands, a broader program of education for farm woodland management, and more effective protection of forests against fire were keynoted in testimony presented by citizens of seven east central states during the hearing of the Congressional Joint Committee on Forestry in Washington on June 30 and July 1.

The sessions were presided over by Senator John H. Bankhead, II., chairman of the Committee, who asked repeatedly for specific suggestions for future legislation. He also expressed interest in legislation which would protect forest owners against the low price offers of unscrupulous timber buyers. To help accomplish this, Professor Victor Beede of Pennsylvania State College, Department of Forestry, proposed federal aid in the development of detailed inventories of farm woodland and market studies which would serve as a basis for subsequent educational programs. Dr. Julian Duncan, of the Babson Institute, spoke directly on the question of federal regulation and was requested by the chairman to propose a draft of a bill which would cover his ideas.

The Joint Committee indicated intentions of holding further hearings in the Northeast, the Lake States, the Gulf States region and the Pacific Northwest.

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TEXAS FORESTRY ASSOCIATION 25TH ANNIVERSARY

Meet at Nacogdoches July 26

About three hundred people including members of the Texas Forestry Association, foresters, farmers, timberland owners, and other citizens met at the Stephen F. Austin State Teachers College at Nacogdoches on July 26 to celebrate the Association's twenty-fifth anniversary and to hold probably one of the largest annual meetings in its history. The Association was the guest of the Teachers College and the Nacogdoches Chamber of Commerce. At the end of the one-day session many important resolutions were passed toward the advancement of forestry in the State. The Association elected H. W. Whited, president and general manager, Frost Lumber Industries, Inc., of Nacogdoches as president for next year.

Lacy H. Hunt, president of the Nacogdoches Chamber of Commerce, opened the meeting and welcomed the Association members and guests. The group then heard D. C. Kenley, Lufkin, president of the Association, who stated, "East Texas was blessed with 13,000,000 acres of timberland. The virgin forests that once covered these areas are now practically gone. As a result, the work confronting this organization and coming generations is the restoration in the best possible way of our second-growth forests. Scientific cutting and manufacturing of timber into lumber in East Texas is going to result in smaller mills and the adoption of better methods, eliminating as much waste and destruction as possible."

Silcox, Principal Speaker

The principal speaker for the occasion was F. A. Silcox, chief forester, U. S. Forest Service, Washington, D. C., who had just returned from an inspection trip of the U. S. Forest Service holdings in Alaska. Mr. Silcox gave a clear picture of the location of the world's timber supply, stating, "The southwest is the last great supply of pulpwood in the United States. The only nation in the world that has a larger supply of these soft woods is Russia. Russia's forests are reported to be as large as this entire country; however, there are also reports that half of this wooded section is Arctic tundra. Russia, however, will not be in the market for twenty years."

Warning the Association against cutting more than the forests can produce Mr. Silcox said, "East Texas has cut practically all of its virgin timber and now you have been cutting second-growth. You should develop your growing stock even if this means cutting mill capacity in half. It is the responsibility of you people to obtain maps and sit down and ascertain what could be done to preserve this growing stock. You have in East Texas about 13,000,000 acres of timberland. You must save them."

(See MEETING on Page 6)

C.C.C. Bridge Spans Neches River



In opening inaccessible forest areas in East Texas for better protection, C.C.C. camps, whose work projects are planned by the Texas Forest Service, have built over 2,300 miles of roads and 7,000 bridges since 1933. The above bridge is being constructed across the Neches River 10 miles southeast of Diboll, between Angelina and Polk Counties, and with the road connecting it, will permit better accessibility through a vast forest area formerly isolated.

CCC CAMP ACCOMPLISHMENTS REVIEWED

Civilian Conservation Corps forestry camps at Jasper, Linden, Livingston, and Trinity, whose work projects have been conducted by the Texas Forest Service, were discontinued October 1. Completion of work within the authorized travel time from these camps as approved by Washington headquarters necessitated their closing. Work projects completed by the camps are as follows:

Jasper CCC Camp P-72. Established October, 1934. Fire protection roads, 235 miles; bridges, 230; rock dips, 72; telephone line, 80 miles; lookout towers erected, 1; fighting forest fires, 19,785 man-days.

Linden CCC Camp P-90. Established May 28, 1937. Fire protection roads, 35 miles; bridges, 25; rock dips, 75; telephone line, 147 miles; fighting forest fires, 3,600 man-days.

Livingston CCC Camp P-61. Established May 25, 1933. Fire protection roads, 298 miles; bridges, 600; rock dips, 250; telephone line, 195 miles; lookout towers erected, 9; fighting forest fires, 10,000 man-days.

Trinity CCC Camp P-59. Established June 8, 1933. Fire protection roads, 210 miles; bridges, 673; rock dips, 400; telephone line, 158 miles; lookout towers erected, 4; fighting forest fires, 5,549 man-days.

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MEETING—
(Continued from Page 5, Col. 3)

Kurth Tells of Newsprint

E. L. Kurth, president of the Angelina County Lumber Company, Keltys, and president of the Southland Mills, Inc., told of the work that has been going on in the completion of the new newsprint paper mill being contructed near Lufkin. He said that construction was going along and was about 70 percent completed. "Each day the mill will make a strip of newsprint long enough to reach from Lufkin to Nacogdoches," Mr. Kurth said. "Yet the mill will produce only one and a half percent of the newsprint which is used in the United States. The structure is planned so that additional machines can be added when the opportunity presents itself. I don't believe I'm being optimistic when I say the mill probably will triple its capacity within five years."

Siecke Outlines Problems

E. O. Siecke, director of the Texas Forest Service, outlined the beginning of the forestry movement and the prominent part certain Nacogdoches citizens played in bringing about the State forestry department. He discussed three problems close to the hearts of everyone connected with forestry: fire protection, the uncertainty about taxation of timberlands, and selective cutting. He told about the work of the Service and mentioning fire protection he said, "East Texas' fire loss in the loblolly and shortleaf pine types has been less than one percent a year."

W. Goodrich Jones, Waco, president emeritus of the Texas Forestry Association and original founder in 1914, was unable to attend the meeting. His message to the Association honoring the work which the body had been doing during the past twenty-five years and telling some interesting history of the trials and tribulations of early forestry in the State was read to the group.

Harrison Urges Education

Hubert Harrison, secretary and general manager of the East Texas Chamber of Commerce, in his speech urged that chambers of commerce in East Texas appoint forestry committees and help the Texas Forestry Association and the Texas Forest Service educate the citizens of East Texas on the importance of the care of their forests.

Luncheon for the visiting members and guests was held in the colorful dining room of the girls' dormitory of the College, where the Association members met Mr. Silcox informally and listened to a stirring speech of welcome by Dr. A. W. Birdwell, president of Stephen F. Austin State Teachers College.

Forestry on the Farm

Thomas P. Walton, Groveton, member of the Texas Agricultural Land Use Planning Committee, took the subject "Forestry on the Farm". He spoke on the value of land planning in agriculture in its relation to forestry and particularly as to the preservation of the timber tract or the "timber patch" on farms and its value to the farmer.

The last speaker of the day was Dr. W. P. Taylor, leader, Texas Cooperative Wildlife Service Research Unit, at A. & M. College. He told how important forests were to the wildlife of Texas. He stated that farmers who grow timber as a crop would also realize an income from the wildlife that lives in this timber.

New Association Officers

Officers of the Association elected for the coming year are: H. W. Whited, Nacogdoches, president; W. Goodrich Jones, Waco, president-emeritus; S. L. Frost, College Station, secretary-treasurer; and vice-presidents, Major H. A. Maas, Clarksville; Walter O'Neal, Texarkana; H. H. Thompson, Houston; J. R. Keig, Beaumont; Victor H. Schoffelmayer, Dallas. New Directors are: B. A. Collins, Livingston; D. C. Kenley, Lufkin; and B. Morgan, Jasper.

County Agents Attend Forestry Course



Scenes similar to this one were a familiar sight on State Forest No. 1 near Kirbyville during the week of September 25, when twenty-one county agents in District Agent T. B. Wood's district attended a special forestry course given especially for them by the Texas Extension Service and the Texas Forest Service. The above picture shows a group of county agents and farmers inspecting a 12-year-old slash pine plantation on the Forest.

FOREST INDUSTRIES SECOND

Manufacture of forest products in Texas during July, 1939, ranked second in workers employed compared to all manufacturing industries in the States, according to information compiled by the Bureau of Business Research, University of Texas.

Industries classified under forest products and number of workers employed were: furniture, 1,843; planing mills, 2,654; sawmills, 10,619; and paper products, 332. Total workers employed by the four industries were 15,448. The Bureau estimated the weekly payroll to average $203,883.

Classifying July retail sales of independent stores in Texas, the Bureau reported 160 lumber and building material dealers, whose sales reached $1,265,640. Total sales for this class through July were estimated to reach $8,254,939.

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FOREST FIRE RECORDS FOR FIRST SIX MONTHS IN 1939

Hazards in March Give Protection Men Trouble

Forest fire statistics recently compiled by the Texas Forest Service's division of forest protection show 2,255 forest fires occurring on timbered areas protected by the Service in East Texas for the six months' period from January 1 to June 30, 1939. These fires burned 74,066 acres of forest land.

In the two major forest types in the protection area the shortleaf-loblolly pine type had the greater number of fires but less acreage burned than the longleaf pine type. These results showed as follows: **Number of fires:** shortleaf-loblolly type, 1,398 (62%); longleaf type, 857 (38%); **Acres burned:** shortleaf-loblolly type, 26,654 (36%); longleaf type, 47,412 (64%).

Comparison with the same period in 1938 shows the number of fires so far this year 21 below last year, but area burned increased by 12,236 acres. The protection area was increased over 300,000 acres late in 1938, which officials state is one reason the burned acreage shows a rise. When compared to the first six months of the 14-year average, from 1925 to 1938, the fires for 1939 show an increase of 111, but the area burned a reduction of 37,151 acres.

Based on the 11,284,271 gross acres under protection by the Texas Forest Service, the area burned so far during 1939 represented six-tenths of one percent. On the net forest area of 8,512,383 acres, the area burned represents eight-tenths of one percent.

March 10-24 was an extremely hazardous period. During these fifteen days 952 fires burned over 43,681 acres of forest land, representing 42.2 percent of the total number of fires and 59 percent of the total area burned for the first six months of the year. Nine days during this period had drying winds, dust storms and hazy weather which greatly reduced the visibility from the lookout towers. During ten days of the period no rain was recorded and five days showed only slight rainfall. These factors, accompanied by a rising maximum temperature, caused the high acreage loss. Lookout men, unable to see forest fires from their towers, had to patrol their districts. When fires were found many had often burned a large acreage and were more difficult to control.

FOUR C.C.C. FORESTRY CAMPS AFTER OCTOBER 1

The Texas Forest Service will conduct the work program of four East Texas C.C.C. forestry camps during the 14th period beginning October 1 and ending March 31, 1940, Robert Fechner, director of the Civilian Conservation Corps, Washington, D. C., has announced.

Two of the present camps will be continued, two new ones established, and four old ones discontinued. Camp movements, effective October 1, are as follows:

Camps continued, Lufkin and Woodville.

Camps discontinued, Jasper, Linden, Livingston, and Trinity.

New camps, Humble and Newton.

The present colored company of enrollees at the Lufkin camp will be transferred to the new camp at Newton. The white company at the Trinity camp will be transferred to Lufkin. The enrollees at Livingston will be transferred to the new camp at Humble.

Congress recently authorized appropriations for continuing the C.C.C. until July 1, 1943. The Civilian Conservation Corps was organized in 1933.

FORESTRY COMMITTEE ADOPTS NEW PRINCIPLES

Adopting a statement of principles for forest conservation and discussing plans for extending community forest developments in this section, the forestry committee of the East Texas Chamber of Commerce met at Nacogdoches on July 25. Conservation policies adopted included greater emphasis on fire protection, selective cutting, extension of federal farm credit to small timberland owners, reformation in local taxation policies toward timberland and maintaining forest cover on non-agricultural lands of low productivity.

Three recent timber laws providing for heavier penalties for setting fire to woods and cutting merchantable timber without consent of the owner, as well as requiring purchasers of log staves and pulpwood to obtain a bill of sale from the seller, were hailed by the committee as big steps forward in East Texas timber production.

Report on the State legislation was given by O. M. Stone of Jasper, vice-chairman of the committee.

E. O. Siecke, director of the Texas Forest Service, and Hubert Harrison of Longview, manager of the East Texas Chamber of Commerce, reported on a community forest movement that is gaining interest in this section. Local chambers of commerce are taking the lead in the movement, designed to arouse additional enthusiasm in timber growth and conservation.

A. G. T. Moore of New Orleans, head of the Conservation Department of the Southern Pine Association, gave a discussion of the proposed federal forestry legislation. Report on local conservation methods was made by L. C. Smith of the Frost Industries.

Attending the meeting were Chairman Lacy H. Hunt, O. M. Stone, E. O. Siecke, H. W. Whited, Hubert M. Harrison, L. C. Smith, A. G. T. Moore, J. R. Keig, J. R. Reid, J. H. Thomason, and D. C. Kenley.

THIRTY-ONE PLEAD GUILTY TO STARTING FIRES

Thirty-one East Texans had plead guilty to starting forest fires up to September 25 this year, records gathered by the Texas Forest Service's division of forest protection at Lufkin show. Investigations of forest fires are conducted under the provisions of a number of state laws which make setting fire on another person's property or allowing a fire to escape to another's property a misdemeanor subject to fine.

A complete summary of fire law investigations so far this year shows 88 cases, distributed as follows: plead guilty, 31; acquitted by jury, 7; dismissed by agreement between state and defendant, 10; dismissed due to technicalities, 4; dismissed by county officials, 17; dismissed due to death of defendant, 1; pending action, 18.

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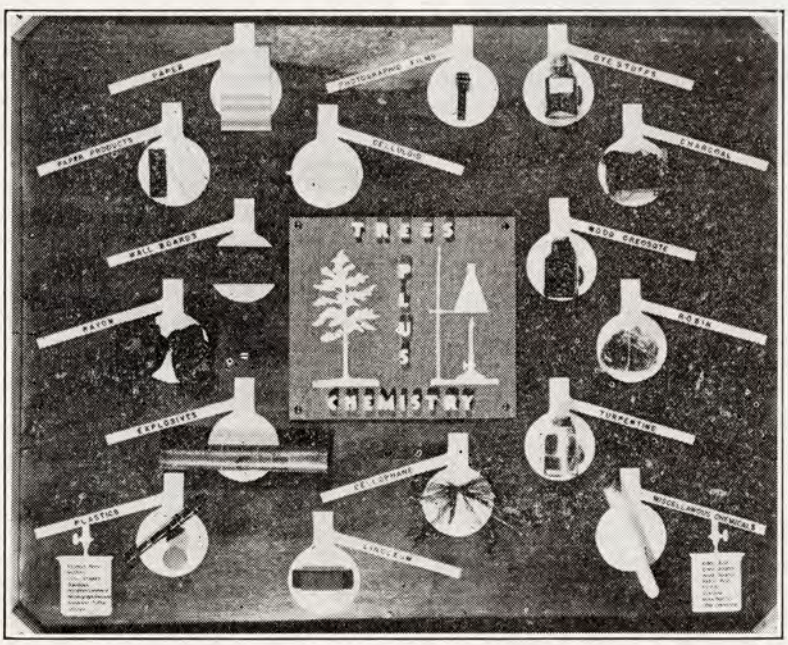
USES OF WOOD FIBER TO BE SHOWN IN CHEMURGIC EXHIBITS

Products made from wood through chemistry will be one of the main features of the farm chemurgic exhibits at the State Fair of Texas at Dallas, October 7 to 22, and at the South Texas State Fair at Beaumont, October 26 to November 4. The Texas Forest Service is cooperating with Elmore R. Torn, chemurgic director of the two Fairs, in preparing the exhibit.

The main wood fiber exhibits will show panels on the following: processing of rayon, ropes and cords of wood, corrugated paper from black jack oak, new all wood plastics, how paper is made from wood, products of hardwood distillation, how chemurgy will increase wood use, and a general panel showing a number of articles in everyday use made from the chemical conversion of wood.

Products Made From Wood Fiber



One of the eight exhibit panels prepared by the Texas Forest Service for display in the chemurgic exhibits of the State Fair at Dallas and the South Texas State Fair at Beaumont. This panel shows only a few of the most common products manufactured from the chemical conversion of wood.

LIMBER PINE

(Rocky Mountain White Pine)
(Pinus flexilis James)

Covering a large range of country in the high mountains of the western part of the United States, limber pine is found in western Texas in the Guadalupe and Davis Mountains.

As the name indicates, the branches and twigs are especially flexible and tough, often light purple in color. The branches form a rounded tree top or head.



LIMBER PINE (Fruit and Leaves one-third natural size)

The **leaves** are in clusters of five each. They are stiff and stout, about 2 to 3 inches in length, and arranged in clusters or tufts near the ends of the branches. They stay on the twigs for five or six years.

The cones, or **fruit**, are relatively short or stocky, mostly from 3 to 6 inches long, made up of rounded rather thick scales, some turned forward and some backward. They are attached by very short stout stems. As with all the pines, the seeds mature at the end of the second season of growth.

The **wood** is relatively soft, close-grained, slightly yellowish or reddish. It is not cut in quantity and the trees are usually rather limby and short-bodied, which largely accounts for the small commercial use.

EDUCATIONAL UNITS REACH FIVE THOUSAND PEOPLE

Approximately five thousand East Texas men, women, and children received forestry education in August through the two motion picture units operated by the Texas Forest Service in the piney woods section.

Thirty-six combined shows and lectures were given, attendance at each show averaging 139 persons. Twenty-one white and fifteen negro schools or churches were contacted. White attendance totaled 2,742 and negro attendance 2,251.

The two units contacted 85,000 people last year at 517 meetings.

RAILROADS USE 50,000,000 TIES YEARLY

Cross ties constitute a considerable item in the expenditure of railroads for materials required in their maintenance. The sums spent in the past five years (1934-1938) ranged from $34,000,000 to $59,000,000 and averaged $42,000,000 for around 50,000,000 cross ties yearly.

Since most of the cross ties now used by railroads are treated with a wood preservative, the number used annually for replacement has been reduced from 100,000,000 to 50,000,000 during the years since 1900.