

FORESTRY.

Its Importance—The Destruction of Forests by the Turpentine Interests—By the Lumber Interests—By Wood Fires—Experience of Iowa in Replacing the Forest Growth.

Paper prepared by Geo. H. Wright and L. J. Dollins, of Orlando, Florida, and read before the Society by Mr. Dollins.

[SEE MINUTES PAGES I TO 6, ITEM 60.]

Mr. President and Members of the Society: The influence of forests upon climatic conditions is beyond question. To the extent that horticulture is affected by such climatic conditions, forestry concerns this Association and claims its fostering care. Also, the deposit of leaf mould on our forest lands deserves consideration. This item alone is, without doubt, worth millions annually as an increment to the productive power of the soil. Whether allowed to decay where it falls, or gathered and composted with barnyard manures, as is done on many well regulated farms, this annual deposit is of great value to our farmers and horticulturists.

We venture the statement that the value of this annual leaf fall if properly protected from fires, and properly utilized, would equal that of the average annual product of forests used for any other purpose.

Owing to the prevalence of forest fires in this State, this valuable adjunct to successful horticulture is rendered almost worthless. These prevailing fires burn up the dead and fallen timber that would otherwise be used for fuel, posts, etc., cause prema-

ture decay in the growing timber, and kill outright the smaller growth of trees upon which we depend for the renewal of the forests, as the matured timber is cleared away. This is an evil and should be remedied.

There are three principal causes for this.* One cause is the great carelessness of property owners in failing to suitably protect woodlands by making fire lines, etc., and thereby preventing the spreading of fires.

The cattlemen are largely responsible for much hurtful burning of woods in order to provide fresh pasturage for their stock. They are not careful to preserve woodlands from the ravages by fire, but on the other hand annually burn over many thousands of acres of woodland that are of little value as pasture, causing great damage to the timber interest without a corresponding benefit to themselves or the community.

Sparks from locomotives cause many destructive fires. From thirty-five per cent. in Belgium only a few years ago, this has been reduced to two per cent. What per cent. of this harm has been done in Florida

by sparks from locomotives, your committee is not advised, but with suitable spark arresters on all locomotives, and due precaution enforced on the part of employees, this evil should be abated.

We may never see the time when these causes will entirely cease to operate and result in injury to our forests, yet they might be materially lessened. *Wholesome legislation and the rigid enforcement of the law would tend greatly to that end.*

Another source of destruction to our forests is the turpentine industry. To those who have given the subject no thought the facts and figures will be a surprise. From the Florida Times-Union and Citizen of March 1, 1898, we extract the following which will give some light on this too much neglected subject:

"Farms that cover an area of thirty to fifty square miles are about the average size. Forests selected for tapping must be the very best.

"The Land of Flowers is fast becoming an area of 'tar, pitch and turpentine.' For several years a limited number of the pine trees in the northern part of Florida have been worked with success, but the time has come when the industry must naturally center in this State, and operators have rushed in to get on the ground floor and reap the benefits to be derived from the valuable product of the pine tree. *It is estimated that the operations have increased over 50 per cent. during the past year. Operators from North Carolina and Georgia have deserted their "farms" and come to the new fields of Florida.* Many of the land owners in the State have been holding their forests for several years, refusing to rent them to turpentine operators as they were aware that, sooner or later, the forests of North and South Carolina and Georgia would be used up and the

demand for their property be greatly increased and the remuneration would be greater. The demand came, and so did the experienced operators.

"While Savannah, Ga., the greatest naval stores market of the world, receives the greater part of the products of Florida for export, it is a notable fact that the business at the Florida ports is increasing rapidly. Jacksonville is fast gaining prominence as a distributing point for the domestic trade, while Carrabelle and Pensacola are rapidly becoming important shipping points for the product. There is no denying the fact that within a few years the State of Florida will furnish to the world nearly all the spirits of turpentine and rosin.

"The bulk of the naval stores for the use of the world is furnished by the Southern States, and a greater portion of the produce will come from the State of Florida in a very few years. The greater part of these products come from the long leaf pine forests. The productions of spirits of turpentine are about 350,000 casks each year, and of rosin about 1,300,000 barrels. To produce this amount, 3,000,000 acres thickly filled with trees must have been operated. usually about 1,000,000 acres of virgin forests are freshly cut each year.

"The area covered by the long leaf pine belt begins in North Carolina near the Virginia line, and follows along the Atlantic coast into Florida, and along the Gulf coast as far as Texas. This belt varies in width from five to one hundred miles, crossing seven States, namely, the two Carolinas, Georgia, Florida, Alabama, Mississippi, and Louisiana, and covering about 150,000 square miles. The trees throughout this great forest territory are tapped and "bled" for their sap which furnishes the crude turpentine from which the products

known as naval stores are obtained. The turpentine farms are operated on a large scale. The lands are rented or leased, to the operators at the rate of from \$50 to \$100 per crop of 10,000 boxes for a term of four or five years. Each succeeding year the yield falls off, and on the fourth year it is reduced to one half that of the first year. The virgin tree becomes a yearling the second year, and the clipping is continued up the tree above the wounds made the previous year. The product is not so good as the virgin dip and continues to depreciate in quantity as stated above until it is abandoned.

"Now that the forests of Georgia, excepting many large tracts which are being held by capitalists for future use, have become used up, the operators have come to Florida to repeat their successes, (and may we not say, continue their wanton waste). Not only have they come from Georgia, but hundreds have come from North Carolina and settled in the pine forests of Florida."

The second growth, or young pine trees, we are informed will not produce turpentine, and therefore when the old trees are exhausted that cause of destruction will cease. And if the millions of young trees coming up every year on abandoned turpentine farms and sections where the trees are all used for lumber could be spared from the ravages of fire, there would be hope that posterity would some day be blessed with a pine forest, but it never can be for an age, the pine forests of which we once could boast."

The same paper of March 6, 1898 gives some figures on the lumber interests. We give the following extract:

LUMBERING IN FLORIDA.

"Only 5,000,000,000 feet of pine now

standing! A very few years will suffice to exhaust the supply. Scattered throughout Florida are scores of logging camps peopled by a few overseers and hundreds of muscular negro axmen. The largest and best body of pine timber in Florida lies in Middle and East Florida, the tract being V shaped, the angles of the V penetrating southward into Orange and St. Johns Counties. A vast quantity of this pine, however, was destroyed by the great cyclone of the fall of 1896. The storm came out of the Gulf of Mexico from the southwest, above Cedar Keys, and passed in a north-easterly direction through Levy, Bradford, Alachua, Columbia and Baker Counties, leveling to the earth thousands upon thousands of acres of forests. The pines so leveled were twisted and splintered to such a degree that they were hardly worth working up into boards, and the result was that most of the timber was allowed to remain where it fell to rot."

But how long will Florida forests last? Those of many of the Eastern States have been exhausted, and one by one those of the North-west are being cast aside in the chaff. The Bureau of Forestry, in 1880, made a census of the pine in Florida. That census has been revised by an experienced and well posted lumber man into the following figures which represent million feet:

Alachua.....	200
Baker.....	60
Bradford.....	150,000
Brevard.....	50
Calhoun.....	60
Clay.....	50
Columbia.....	200
Duval.....	30
Escambia.....	60
Hamilton....	300
Hernando...	90

Hillsborough.....	90
Holmes.....	100
Jackson.....	175
Jefferson.....	60,000
LaFayette.....	300
Levy.....	150
Liberty.....	50
Madison.....	100,000
Manatee.....	150
Marion.....	200
Nassau.....	60
Orange.....	60
Polk.....	175
Putnam.....	90
St. Johns.....	40
Santa Rosa.....	300
Sumter.....	60
Suwannee.....	400
Taylor.....	500
Volusia.....	40
Wakulla.....	50
Walton.....	400
Washington.....	200

Total.....4,980,000,000

"This is a sufficient quantity to build a board walk thirty-one feet wide around the earth, but it is not inexhaustible, for every man needs a house, and many pines are needed to make a small cottage.

"Annual Shipments—The shipments of timber from the principal ports of Florida for 1897 were, in feet, about as follows, (some of the figures being estimates):

Pensacola.....	395,213,000
Jacksonville.....	115,434,070
Fernandina.....	83,936,000
Apalachicola.....	61,000,000
Carrabelle.....	21,500,000
Tampa.....	5,000,000

Total.....682,083,070

Of the Pensacola shipments, about two-

thirds are of Alabama timber, reducing the total shipments of Florida timber to 418,607,738, or in round numbers, including smaller ports, to say nothing of home demand, about 500,000,000 feet annually. The total estimated supply, 5,000,000,000, will therefore, at the present rate of cutting, last ten years. But it must be remembered that these figures are based upon the old standard of merchantable pine, that is pine of large size. It does not include seconds, which are now being largely cut, manufactured and marketed. If seconds are included, and they should be, the supply will at the present rate of consumption, last from twenty-five to thirty years.

The value of first class yellow pine now standing in the State at \$4 per thousand feet is \$20,000,000.

GROWS SLOWLY.

The pine is a slow grower. Here are its dimensions at various years:

Years.	Diameter in inches.	Height in feet
20	3.8	23
30	5.5	37
40	7	48
50	8.1	56
60	9.6	62
70	11.5	67
80	13	72
90	14.5	76
100	16	80
120	18	87
140	19.5	93
160	20.5	98
180	21.3	103

The foregoing rate of consumption makes no account of lumber manufactured and used for domestic purposes inland. If such were added to this it would produce an array of figures that would be startling.

result would mean practical independence at the end of twenty years."

This much for actual results in Iowa. Now, what trees would probably succeed best here is a matter of consequence. The catalpa speciosa, black walnut, black locust and wild cherry would probably head the list, and are valuable for timber. Some kinds of oak and the box elder are mentioned as useful trees for planting in Florida. Hickory and pecan grow well on the hammock lands and might do well on the best grades of pine lands.

What is best, however, cannot be stated with much certainty, since so little has been done in this direction in Florida. This

matter should be taken up by our State Agricultural Department and experiments made in different parts of the State looking to the selection and propagation of the timber trees that would do best, and be of the greatest practical value. Our State and National Legislatures should be importuned to furnish such legislation as will foster timber culture and protect our forests from the evils that are now working wanton destruction and threaten to leave us without our trees, to furnish timber for our domestic needs, to temper our climate, shelter our stock from the sun, and our farms, groves and gardens from the hurtful winds, and to beautify our beloved land.

FORESTRY FROM A HISTORICAL AND SCIENTIFIC STANDPOINT.

Its Importance to the Agriculturist and Horticulturist—Its Recognition by the European Governments and Japan—Its Relation to Rainfall and Climate.

Paper prepared and read by H. W. O. Margary, Eustis, Florida, with discussion following the reading of this paper and the previous one.

[SEE MINUTES PAGES 1 TO 6, ITEMS 61 AND 62.]

Mr. President, Ladies and Gentlemen: Forestry, like meteorology, is often considered as having but small standing with the horticulturist, but such is far from being the case; in fact, both these sciences are too much disregarded by our farmers, fruit growers and horticulturists, apparently under the impression that they are merely guess work or the idiosyncracies of "weather cranks" or at least the vagaries of visionaries; but in truth the subject is so extensive and far reaching that if every member of this Society spoke for ten minutes on this subject, taking up the history

and laws of origin, causes and necessities and its relation to meteorological conditions caused by infringing the laws of nature in regard to the destruction of timber and the effects produced by the replanting and properly caring for large bodies of timber; the results of timber cultivation, and the vast, now dry, Western prairies, viewed from its moral, as well as its mercantile side would hardly cross the threshold of the subject.

If the United States in the next few centuries is to hold the place that every American believes they ought to take, there must