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A LIST OF THE MATERIALS IN THE AUSTIN CARY MEMORIAL FORESTRY COLLECTION IN THE UNIVERSITY OF FLORIDA

The Historical Records Survey Project

Florida

AUSTIN CARY - 1865 - 1936

A LIST OF THE MATERIALS

in the

AUSTIN CARY MEMORIAL FORESTRY COLLECTION

in the

UNIVERSITY OF FLORIDA

Prepared by

The Florida Historical Records Survey
Division of Community Service Programs
Work Projects Administration
Jacksonville

Sponsored by

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PREFACE

The Historical Records Survey Program operates as a series of statewide projects in the several States in the Division of Community Service Programs of the Work Projects Administration. This program was organized in Florida in 1936 under the national direction of Dr. Luther H. Evans. On March 1, 1940, Dr. Evans left to become Director of the Legislative Reference Section of the Library of Congress, and was succeeded by Sargent B. Child. The Survey program includes an inventory of state, county, municipal and church archives; of American imprints; and of manuscript depositories and collections.

Numerous requests have been made by scholars for data from the Austin Cary forestry collection in the University of Florida. This collection was bequeathed by the late Austin Cary to Mr. Ernest F. Jones, Superintendent, Division of Forest Engineering, Great Northern Paper Company, Bangor, Maine, and Mr. E. S. Bryant, of Boston, Massachusetts. On February 25, 1937, through correspondence between the University and Mr. Jones, the collection which had already been deposited in the library of the School of Forestry of the College of Agriculture, University of Florida, was formally released to the University. The Florida Historical Records Survey arranged for a worker to make the material available to scholars by compiling a catalog of the papers.

In the publication "A List of the Materials in the Austin Cary Memorial Forestry Collection in the University of Florida" herewith presented are shown three of the four groups into which the material is separated--the Austin Cary Manuscripts and Printed Articles, Material by Others, and Field Notes. This classification, adopted upon the recommendation of Director H. S. Newins of the School of Forestry follows that in use in forestry schools throughout the country. Filed with the material are numerous photographs.

Correspondence, technical and personal, written and received by Austin Cary, constitutes the fourth group, but appears in this publication only in part. Technical letters are filed in Groups I and III; those directly concerned with manuscripts are attached to the manuscripts listed in Group I. The remaining correspondence is filed in chronological order but is not herein listed.

The papers were arranged and the catalog made by D. L. Emerson, under the direction of Director H. S. Newins, of the School of Forestry in the College of Agriculture, University of Florida, and Dr. E. A. Ziegler of the Forestry Faculty. Director Newins who was well acquainted with Austin Cary wrote the sketch of his life. The editing was done by Dr. Louise Biles Hill and the Index was prepared by Martha De Swarte and Nelle King. Final revision was made in the National office by Margaret Sherburne Eliot, Assistant Archivist in charge of manuscript inventories. The University of Florida is co-sponsor with the State Library Board in the book's publication.

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Preface (continued)

Publications of the Florida Historical Records Survey, a list of which will be found at the end of this volume, are issued for free distribution to public and institutional libraries. Requests for information concerning the publications or work of the Survey in Florida should be addressed to the State Administrator, Work Projects Administration, 49 West Duval Street, Jacksonville, Florida.

Louise Biles Hill
Project Supervisor
Florida Historical Records Survey

Jacksonville, Florida
December, 1941

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TABLE OF CONTENTS

THE LIFE OF AUSTIN CARY*

by

H. S. Newins

Austin Cary was a rugged personality to the forestry profession and the wood-using industries. He was not of large stature, nor was his popularity of the hero worship type, such as the mythical "Paul Bunyan," but he was a most dynamic person.

Born July 31, 1865, in East Machias, Maine, of a New England family, his childhood was spent in the environs of a beautiful colonial home. In the southeastern coastal region of Maine there still prevails the atmosphere of something exotic in those older homes and their more modern copies - homes which have been built in the traditions of those days when the original owners as sea captains were in reality masters of the Seven Seas. Perhaps Austin Cary as a young boy was destined to travel afar in obtaining his rich experiences. At any rate he did travel far in his chosen profession of forestry, and his journeys reached the forests of the north, south, and east and west within the United States, and he made three trips to Europe.

Education

At the age of 18 Cary registered at Bowdoin University where he obtained the A.B. Degree in 1887, the A.M. Degree in 1890 and the ScD. in 1922. Before receiving the A.M. Degree he studied biology

*This sketch of the Life of Austin Cary is purposely taken almost entirely from his numerous notes and writings. The words and phrases used are largely of his origin and no attempt is made here to acknowledge the same by quotations except occasionally.

at Johns Hopkins and Princeton Universities, and was an instructor in the Department of Geology and Biology at Bowdoin in 1887-1888. During the spring term of 1904 he taught at the Yale School of Forestry. Professor H. H. Chapman of the Yale staff writes in his obituary of Cary:

> My chief contact with him was in the spring of 1904, when he loaned his services to the Yale School of Forestry to instruct the senior class in topographic mapping at Milford, Pennsylvania. He gave to this subject a rugged vitality that characterized all of his professional activities; one never forgot what he taught.

Cary has frequently referred to his original training in the woods of Maine where lumbering started as a standard activity of the old New England stock and still continues so in large measure. He has mentioned that his own uncles, in fact, were lumbermen, and that he could remember being in their camps before stoves were used, when the fire for warmth and cooking was in the middle of the camp under a big smoke hole, while the berth and living space were under the eaves.

He has often mentioned that so far as he can remember, he never knew there was such a word or thing as forestry until the year 1892. It is interesting to note here that he was then twenty-seven years of age.

During the late years of his life he becomes especially reminiscent of the early days of forestry in the United States and refers with much credit to Mr. Franklin Hough, who antedates his own recollection but whose work he studied and found to be thorough-going, honest and serviceable. Mr. Hough was to Cary the first conspicuous representative of the idea of forestry as advocated by the American Association for

the Advancement of science in the early 70's.

Austin Cary in the days of his first forestry experiences was influenced by the summary of National Forest Resources which had previously been made in 1880 by Professor Charles S. Sargent for the census for that year. The information which was reported in that census for the State of Maine gave Cary considerable insight because of his earliest woods work, and on the first subsequent occasion he wrote of the summary in rather disrespectful terms. This called out a rebuke on the same plane, and he remarks in 1936 that somehow he has never regretted the course of criticism which he followed in that early day.

Also, in 1892, when the first report of the newly installed Forest Commissioner of the State of Maine was published, Cary reacted to this publication in a critical manner because of his early forestry background. Several papers had been contributed to this report. One was written by a thoughtful timber owner who noted the fact that a little change in the logging methods prevalent at the time would obviate the destruction of much growing timber. Men saw the point and acted on it. From then on the provision suggested was inserted in all stumpage contracts, but Cary reminisces in 1936 that there were three men of a different type who also contributed papers to the Forest Commissioners Report: one was a professor in the State University; another a retired lawyer of high class; and the third, a gentleman of somewhat the same standing. Between them they mourned the passage of timberlands into private ownership; they insisted that the State ought not to overcut the yearly growth of timber as they believed it was already doing; the question was raised whether the pulp and paper

industry, just then beginning to compete strongly with sawmills for timber, would be of benefit to the state; the employment of portable mills was deprecated! After forty-four years, Dr. Cary reviews again this situation in support of the more practical rather than the theoretical analysis of the problem.

Fernow Inspires Cary

Having been brought up close to the lumber and the woods, the idea of forestry when he got it appealed to him; it seemed that there ought to be something for him and for Maine in it. Dr. B. E. Fernow, who was then in charge of the Bureau of Forestry at Washington, helped Cary in 1892 to get started; and it so happened that a very small state appropriation was available which he worked out. Cary was then occupied as a surveyor and investigator, mostly in Maine, but also elsewhere, including a field study in Michigan and Wisconsin during the winter of 1895 when he was occupied in gathering pine stem analyses data for Fernow's Bureau of Forestry.

In 1936 he speaks of these early experiences and interestingly refers to the winter of 1893-94 in Maine when he ran across a single old decrepit pine of large diameter and towering above the surrounding woods, with thin crown, and on its last legs evidently. There was no way to prove it, he remarks, but the inference was strong that the stand about it was the end product of a course of events similar to that earlier depicted.

Service with the Berlin Mills

In 1895 Cary put in a full season in the woods, in part on the

Androscoggin River, writing up results for the state land agents' report of the next year. This gave him standing. In particular this work appealed to the two big concerns in Maine at that time, namely, the new International Paper Company and the Berlin Mills Company, the latter headed by Mr. W. W. Brown with a mill at Berlin, and which Company is now the Brown Company. In 1898 he was offered the chance to take service as forester by both the International Paper and the Berlin Mills Company. He chose the latter, as having better and more compact property and as run by men of somewhat his own age and class. In this regard he was the first American forester to assume a relation of anything like that kind, and he has frequently remarked that if any credit attaches to that he wishes the Company to share it.

One main branch of his job when he began this work was to circulate round through the camp in the cutting season to see that the timber was well picked up; also, that the land was cut conservatively. He tells a story which turns on the fact that for a considerable time the Company cut too conservatively in places and had a loss from it. He mentions that he never will forget the circumstances when after long soaking rains in December of 1900 a big gale came on and blew down lots of timber. He was in the woods at the time, heard the trees cracking as they went over, and he was surely sick enough. Most men would have quit the job if they didn't get fired. As soon as it quieted down so a man could travel, he looked the country over to see how things were, and when Mr. Brown came into the woods next Cary was ready for him. It was Brown's money lying on the ground, and this is what Brown said after they had talked things over: "I feel that we were right in our main policy in spite of this; and we are going on with it. If we have made

any mistake we shan't make the same mistake again." It took Cary a long time to size that up in all its bearings, but you can see at a glance that it was staying with the man; and Cary stayed with him, too, as long as there was any point to it. He remarks further that physical ruggedness, of course, went along with the game when one was ready for any hardship. He remarked then that perhaps 25 years from his present time it won't be believed that there ever were such men as the old New England and Lake States lumbermen.

His service with the Berlin Mills Company lasted for six years, and in searching for a single word to characterize it the one which occurred to him was "concentrated."

During his services for the Company he surveyed, mapped and cruised these areas together with other of the Company lands, amounting in all to some 150,000 acres. His exploring was done mostly alone. Because of the Magalloway drainage this job was referred to as the Magalloway work, and upon a return trip a year or two later, Cary climbed Rump Mountain to see what might be happening in the territory. He writes in his notes that the near country claimed attention first; later his eyes turned farther away, and among other things he recognized off to the south and east an outline that could be nothing else than Deer Mountain. He remarks that the air may not have been clear; at any rate it looked awfully far away; and then this thought came to his mind: "For God's sake, have I been all over that territory, mapped every ridge and brook, got into every plug hole, been within forty rods of every spot on it?" For the moment it did not seem possible to him but he knew there were records to show it.

Camp Fellowship with Professor A. D. Hopkins

Further in his recollections he refers to his work at Coburn Gore on the boundary north of the Rangeley Lake system where there occurred a serious infestation of bark beetles which in his time were doing material damage within the territory of his work. His first contact with these beetles came in 1897, while cruising on the Connecticut River. Coming to the Androscoggin the next year, he found them there, too. In fact, they were doing serious damage in a couple of large valleys. The Company salvaged a lot of that timber and reduced the bug population at the same time through the assistance of Professor A. D. Hopkins, an authority on forest insects in this country. Hopkins came at the request of the Company to learn and advise what might be of service. Dr. Cary later remarks that he found Hopkins to be a pretty good sport, and that for a part of the time he was there the two travelled the territory with a pack apiece, stopping nights at old logging camps, etc. Cary showed him the first porcupine he ever saw, and also the first beaver works. Hopkins was more or less a botanist as well as a bug expert, and became interested in the characters of the different spruces. Finally Cary thought he saw signs of an intention to publish on the subject which would add further to the confusion existing in respect to scientific names. Cary made him promise not to do it, threatening, in the event he refused, to get him into the nearby Cupsustic flats, lose him, and leave him there.

While occupied in the employ of the Berlin Mills Company, Cary made a visit in the spring of 1900 to the Pisgah Forest in North Carolina in order to study this contrasting field where the administra-

tion of the Forest was then under the direction of Dr. Carl A. Schenck. Schenck was a trained Hessian forester who came to this country in 1895 to assume the management of Mr. George Vanderbilt's forest estate in North Carolina, succeeding Mr. Gifford Pinchot, who had started the work. Cary remarked that with all his admirable adaptability, Dr. Schenck was in many ways a high classed German still. This was shown particularly in his treatment of labor, and Cary was of the opinion that any man in the Maine woods who would talk to woodsmen as Dr. Schenck did would get his "head cracked on the spot." North Carolinians took it differently; they lay low, and took out their grudge with a fire later on. The lesson that forest managers must make allowance for the rights, interests and feelings of the local populations is one not likely to be too strongly taken to heart.

"Appreciation of Dr. Schenck"

Cary was much impressed by this visit, and later wrote an "Appreciation of Dr. Schenck" for the FOREST QUARTERLY of 1914, which was both complimentary and at the same time critical of the good work which Schenck developed at the Biltmore School of Forestry. Dr. Schenck had organized this school in 1898 as the first School of Forestry in America. In 1912 it was discontinued. Cary in his "Appreciation" concludes:

> It is hard to write of the Biltmore School as a thing of the past. We shall miss Dr. Schenck, and the country has lost a force that was highly useful. Nobody will grudge him anything good that he carries back home. We wish he might find a way to return to work among us. If he ever feels like coming back for a visit, there are men all through the country, from one coast to the other, whose pleasure it will be to take hold and 'give him the time of his life.'

During the winter of 1905-06, Cary was in charge of a senior class of Harvard University foresters on its trip among the lumber camps of Maine. They visited the operations of the Hollingsworth and Whitney Company of Boston whose mills were at Waterville, Maine, and which was one of the largest paper manufacturing establishments of New England. This Company some ten years previous began a policy of land purchase which it consistently carried on until at the time of the student inspection trip it owned 100,000 acres of spruce land on the Kennebec River. Cary was much interested in the development of the practical work which was carried on by William Lanigan, the head of the land business of the Company. Lanigan was an old Kennebec lumberman and log driver, one of those forcible and clear-headed men without much schooling who are so common in all lines of American business. Cary remarks that this man spent his time mainly outside the woods directing the logging operations only in a large way, and keeping in touch with business both inside and outside his own concern. He mentions that Lanigan devised a system of mountain watch stations, connected by telephone with the wardens below, which proved so efficient in preventing forest fires on the upper Kennebec during the year previous to the visit of the Harvard forestry students.

Under Lanigan, this Company employed so-called walking-bosses - men who had general charge of a section of the Company's woods' operations. Cary mentions Lewis Oakes as having charge of the eight of ten camps east of Moosehead Lake. Oakes was a land surveyor by training and had been familiar with timber and with logging since boyhood; and, while he may never have chopped or run a camp himself, he knew perfectly well

how it ought to be done. In the opinion of Cary the work of the Hollingsworth and Whitney Company in those early days came very near to securing true forestry, as near certainly as any logging work carried on in the spruce woods of New England, in spite of the fact that there was in the Company's organization no man of technical forestry training, no man who even called himself a forester.

The fact suggests to the mind of Cary that perhaps those of us who assume the professional name may in our enthusiasm and eagerness have valued out own usefulness and efficiency too highly. He further remarks that while we have been theorizing about forest management and drawing up plans which may or may not have effect upon the lands to which they apply, other men in their own territory have been going ahead without advertising or parade and actually securing the real thing*. He believes this idea worth pondering, and the question that follows it - whether it is not they rather than we who are the real foresters of the country. Cary holds to this idea throughout his entire life, and no doubt it was this defense of the more conservative lumberman which endeared him so effectively to the lumbermen of New England and the Southern Region where he spent a great portion of his life.

Views on German Forestry

Cary frequently refers in his notes to his forestry travels abroad, and he was much impressed with his first trip to Germany in

*The real thing to which Cary refers and just what the more conservative lumberman desired will be brought out later in his discussion of the Capper and Copeland Reports.

in 1897. In referring in 1917 to that first trip, he refledts that the type of forestry which chiefly fills the books came over from Germany, which in his opinion was the most autocratic country in the modern civilized world. He mentions that fact that forestry started in Germany about a hundred years ago when that country was commercially isolated and shut in by people at that time set on the idea of national self-sufficiency and regulated order. During that first trip to Germany he had the feeling that those Germans held too tight a rein over themselves for real men to thrive under; a lot of their practices seemed to him to be pedantic; and he states further in connection with events then transpiring that he believes we might ourselves have blown up before this time if we had had no more varied, original and interesting work to do than that of a German forest officer.

He then refers again to Dr. Fernow to whom he attributes enormous vitality and powers of work, along with which went a self-confident and more or less domineering disposition. Cary states that Fernow "knew it all; those who differed with him were utterly mistaken." Cary was disturbed by one of Fernow's addresses made before the American Pulp and Paper Associations in New York in the winter of 1897-98, in which in Cary's hearing he told the assembled paper manufacturers that their business was unsound in respect to the class of materials. A clash of minds resulted. Dr. Cary's more practical application of the principles of forestry was also impressed when backed by state funds Dr. Fernow managed a timber township in northern New York (the Cornell situation), the fundamental idea being to change hardwood over into spruce growth through clean cutting and planting. With this project Fernow ran into

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such expense that he had to be stopped after a year or two, while on the technical side the result, as Cary understood it, was to demonstrate that Fernow's fundamental plan was totally impracticable. Cary was so unfavorably impressed with this failure of technical forestry without practical application that he referred to it frequently. In 1925 he says that some 25 years ago this operation was being carried on in the Adirondack region of New York and was supposed to embody the principles of forest management, silviculture and everything else that was desirable in that line, the plan of it being to get rid of the stand of hardwoods on the ground, intrinsically fine but of negative value at the time, and to replant the area to spruce. He states that the question whether this plan ever was or, at practical cost, could be fully carried out on typical ground he himself does not raise; but to his mind the wrong-headedness of the plan itself appeared evident when, in 1920, Adirondack lumber concerns equipped to handle both lines equally well told Cary they were realizing more per thousand on hardwood than on spruce. Cary then states that forest management in any sense that the American people appreciate and feel concern with meant in that case simply holding that timber till the time came around when it was in demand, and he has no doubt plenty of New York lumbermen have all along understood that.

Definition of Forestry

Cary remarked that Fernow was a telling figure in the history of forestry in this country, all right, and, as our first systematic educator, Fernow wrote the text books and trained numbers of the men who later trained others, and so on down through several layers. Cary said he has felt that one specific sentence Fernow wrote must have had,

through these channels, a powerful influence on subsequent affairs. It is the definition of the term forestry in his work on forest economics, and reads - "the rational treatment of forests for forest purposes." Cary states that rational treatment is all right, but how about forest purposes? He said this without qualification - "that that phrase never has fallen in with my own ideas." Cary said further that from the start to that day, forestry to him has meant such use of forest land as promotes the interests of our people. On the other hand, he has often thought that the idea thus set up, that forests are an end in themselves, is a main reason why the interest with which we are identified has not advanced faster. He said that it operated to part men who by rights should have been united, to set up a clan in the midst of a people. The validity of this reflection he commended to the thoughtful consideration of the public.

And so he reflects also of Dr. Schenck whom he condones with the statement that in the hurry and scramble of actual life, men do not always carefully consider their words or maintain a position of nice balance. He said that Dr. Schenck being of an intense nature, his reactions and sympathies were strong. When, for instance, as he did before the Society of American Foresters, Dr. Schenck said that forestry was anything that had to do with the woods, he went to an extreme, and his friends had to take him up. Forestry in any meaning sense is no more that than it is German forest practice introduced on a large scale in America today. Both are extremes, and the sensible, practical mean lies between them. Cary remarked further that this, as far as private land in large areas is concerned, consists

in the first place, as all so far agree, in good utilization and in protection that is efficient and on an adequate scale; and that these things we know depend, in turn, on the maintenance of values. Further than that, he said, forestry includes in some cases conservative cutting, reservation of young and thrifty stands and cheap measures for re-stocking, all under conditions imposed by sound finance. Cary contended that these things, to be sure, are not ideal, but they are practicable to an extent, and they secure something that is actual and worth while. All were in operation at one place and another within the industry, and were carried out under actual business organization; and extension of these desirable things halted mainly for lack of men so equipped and so placed to carry them out.

Prolific Writer

Dr. Cary was a prolific writer. His pen was busy not only with the technical subjects of forestry, but also with the many subjects of more practical interest to the lumberman and the workers in the various wood-using industries including especially the naval stores activities of the South.

In 1903 Cary published one of his first technical papers, and the title of the subject was, "Note on Relative Frost Hardiness." This publication, which dwelt with his field researches during June on the Adroscoggin watershed both in Maine and New Hampshire, was No. 1 of Volume 2 of the FORESTRY QUARTERLY, and was the beginning of numerous technical and professional articles by Cary to follow throughout the life of both the FORESTRY QUARTERLY and the PROCEEDINGS of the Society of American Foresters and later in the JOURNAL OF FORESTRY even up

until 1936, which was the year of Dr. Cary's death. Although he was a generous contributor to the lumber trade journals and to those magazines dealing with such special fields as the naval stores industry, nevertheless, an excellent review of the life of this most unusual character in forestry can be obtained by a cross-section of his technical and professional writings.

Author - Five Editions

In 1909 Cary published the first issue of his WOODSMAN'S MANUAL under the title "Manual for Northern Woodsman." This publication was in such demand, not only by students and scholars in forestry, but also by practical workers in the wood-using industries, that the first issue was soon exhausted and subsequent issues were required to be published in 1918, 1924, 1932, and finally the fifth edition in 1935. These last two editions were indeed finished products, and it is significant to note that Dr. Cary completed this valuable work during the years just prior to his death in 1936. Dr. Cary in the Preface to the Fourth Edition of the WOODSMAN'S MANUAL states that the original issue was suggested by and largely based on the author's wood experience up to that date which had been mainly New England, whereas with successive editions material relating to other forest regions was added and a modification of the title made necessary. In the last two issues Dr. Cary included an entirely new part on the growth of timber. The author stated that the book was not designed exclusively for readers with technical training, and certainly not for those who had merely theoretical or inquisitive interest with the subject.

Modesty a Virtue

One of the most valuable characteristics of Dr. Cary was his modesty upon all occasions. He remarked in 1936 his desire to warn younger men than himself against any self-confident spirit which might influence one's future work. In order to make this point clear in one of his papers he remarks that in a neighboring state to Maine a few years before a young forester was employed by a business man to look after a growing timber property. Well trained and capable he was, but in handling the people with whom he had to deal, and also in relation to the employer, he was stiff-necked, paying little regard to their ideas or interests. The employer wrote Cary after letting him go: "I never yet heard him say when something went wrong that it was possibly his fault." The same man continues that as a part of training his own son for life he intends as he grows up to tell him of the mistakes he has himself made in the hope of cultivating the habit of caution and humility. Even as early as in 1906 when Cary wrote the leading article for the September issue of the FORESTRY QUARTERLY, he concluded with the statement:

> In regard to future management and the school-trained man, there is just one thing to be said, but that is full of meaning and cuts in a multitude of ways. It is that when technically trained men can do the work required better than those who are now conducting it, they will get it to do.

Loyalty to New England

Dr. Cary always was most loyal to New England, and especially to Maine forestry and wood utilization conditions. He supported the fact that in the southwest angle of Maine there is the location where

in 1630 lumbering on a commercial scale on this continent had had very nearly its beginning and that a thriving and sustaining business in lumber is done there to this day. In fact, Dr. Cary was always most encouraging in regard to forestry for New England, and stated in 1923 that he believed New England would some time build largely toward the public ownership and management of their forests, although he confessed uncertainty as to the time and rate and exactly what would be the moving stimuli. He further remarked that what has served France and Switzerland so well is none too good for us, and in this direction he felt we could look for really rewarding and satisfactory results.

In 1935 Dr. Cary addressed a letter to the Secretary of Agriculture, Henry C. Wallace, in which he referred to a letter he had written President Roosevelt, April, 1934, from Lake City, Florida. In this correspondence he speaks out in the support of private forestry, and refers frequently to the forestry situation in Maine in 1890 and 1892 when large scale forest fire protection began to be organized, and since then fire protection has gained steadily in effectiveness, and, in fact, Maine is now recognized, according to Cary's letters, as one of the leading states in this regard. He claims that a noteworthy feature of the system is that land owners chiefly support it financially and not the public, and he refers to the year 1908 when after strong agitation and debate an adjustment of the tax matter was satisfactorily effected in Maine somewhat along the lines advocated by the country as a whole in 1934.

Among others, Cary referred especially in his writings to Mr. Sewall, who for years ran what Cary supposed was the largest timber

cruising business in the United States.

Mr. Carlisle, whom he considered a peculiarly level-headed man who made special appeal for reliability and competence, managed timber land for himself and others for years. Cary considered Mr. Carlisle to be the man anyone would turn to for service who desired their timber interests in Maine broadly and capably reviewed.

Mr. Freedman, a Harvard graduate, for some years followed Cary's old trade of surveying, mapping and cruising. During the World War he was with the engineers, and later was occupied with a large concern as the man to head up his woods supply and timber-land department. Cary remarks that although Freedman was a former student of his, and Cary was vastly proud of him, his job was a big and responsible one, and the capacity was never in Cary to accomplish it.

Cary includes the Great Northern Paper Company among Maine's largest concerns and was especially impressed with the services to this Company of Mr. E. F. Jones, who was first occupied with strictly technical work, and in the course of time accomplished many noteworthy achievements. During all this time Jones showed industry, loyalty and level-headedness, and thus when a reorganization occurred he was appointed head of the Forest Engineering Department which in Cary's opinion was some job, too. He was also impressed with another younger man of the Great Northern Paper Company, Mr. Gerald Wing, who, after several years in the inspection field, had been put at the head of the big operating division.

Private Forester

Cary was widely recognized in New England as a keen observer in the woods and as a sound thinker with unfailing good sense. In 1908 he began a policy of the purchase of small timber tracts and thus became himself a private forester. He continued this plan later in the South and there became a share holder in a timber growing corporation, but in 1934, after the Sessons fire in Georgia, withdrew from this corporation.

State Forester

Cary was appointed Superintendent of State Parks for New York in 1909, a position which he resigned because of ill health a year later. There are two incidents in his life worthy of attention here: one is the frequent reference he makes to his observations in the Adirondacks of New York where Fernow had earlier attempted to develop the silviculture project, which caused his disruption with the statesmen of New York and the suspension of the New York State College of Forestry at Cornell in 1903; and the other is his reference to New York State Constitutional Amendment providing that certain public lands shall remain forever wild forest, and the timber be neither cut nor destroyed. He remarks that so it has gone since as with large areas added by purchase, the timber rotting down as it matures. He states that a lumberman could not cut a road across state property to get his timber out; he further remarks, "We tried to locate and prosecute tourists who might cut tent posts and fuel; some residents within the forest reserve had to go many miles for their winter's firewood."

Begins Continued Career With U. S. Forest Service

During the same year (1910) he was appointed as Logging Engineer for the United States Forest Service at Washington, D. C.

This period marks the beginning of a new chapter in Cary's life. Until 1910 he was a pioneer in the somewhat practical field of forestry. His activities in the United States were confined entirely to the New England region with the exception of one winter spent in the forests of the Lake States of Michigan and Wisconsin and a brief visit to the Pisgah Forest in North Carolina. From 1910 on Cary continues as a pioneer in forestry but extends his influence to every forest region of the United States. In these regions he becomes a crusader in the interest of his profession, and a continued supporter in behalf of those conservative lumbermen who in their practical plans were actually practicing the principles of forestry.

While Cary was employed in the U. S. Forest Service he refrained from public criticism of any service policies which seemed to him to run contrary to his basic philosophy. Although he was loyal at all times to the government administration, he did, nevertheless, invite plenty of discussion of those issues which involved the contrasts of ideas in the profession of forestry, and especially so with reference to private forestry and public forestry. Cary was much sought after, and was indeed a valuable acquisition to the staff of the U. S. Forest Service. During the early years of these new duties he was occupied in the orientation of his logging engineering work in the larger field of endeavor which now included all of the forest regions of the United States. He observed in the Inland Empire region the relation of larch

and pine in the National Forests there that after several years' trial and experiment along lines suggested by forestry theory it was concluded at the finish that the practice of lumbermen on their own lands, following their own immediate interest, was very close to the true line of practice, silvically, financially, and in every other way. Two things are involved here - first, that lumbermen had a sound understanding of timber economies and values; second, that their practice proved to be good silviculture.

While visiting these regions he was even called upon to make an address in British Columbia during the winter of 1917 where he commented that many practices found in actual lumbering are pretty liable to be good forestry in the long run and should not be disturbed unless clear reasons are found for so doing.

He observed from his review of the lumbering and logging situation upon the Pacific Coast that a large industry affords competition and stimulus within itself and work is effective and cheap in consequence. Also, that the cleanliness of work as a rule reduces operating costs in the Departments of Transportation and Construction. The result in lumber price the public appreciates, and it will want to see clear reasons for so doing before surrendering it. For instance, Cary figured on the cost of logging operations in Douglas fir, and from a base price of $4.00 per thousand reached figures all the way up to $11.50 for conservative or salvaging work, according to the suppositions.

In the Lake States Region he observed the enormous waste of timber that occurred in the pineries there, and how the lamentable

present condition of much of the land concerned has been laid up against the lumber industry and indeed the country's intelligence. He admits these facts but against them sets up two considerations. First, if the Lake States lost native resources at least they became populous and wealthy in other things, while a still more moteworthy fact is that the Prairie and Plains States were built up more quickly and cheaply than we can conceive of their being built under any other system. Cary implies here that with its faults, our system also had its advantages, and the nature of both is such that the question involved is social and governmental, not technical.

While visiting the Pacific Coast, Cary lectured before the students of various schools of forestry, including the Oregon State College. Many anecdotes have been related of Cary's personal behavior and eccentricities. While at Oregon he had lectured with much persuasion before a group of logging engineering students including hook-tenders and "fern-hoppers" about the advantages of the white pine in New England. The students who were accustomed to handling large "Charlie-Moore" blocks and other heavy logging equipment were a little difficult to interest in this subject, and as a result Cary was pretty well warmed up at the conclusion of the lecture. He had been invited to the home of a bride and groom representing the staff of the School of Forestry, and after arriving there through a rather heavy "Oregon mist," Cary was left in the front room for a couple of moments. The hostess who was preparing the table for the honored author-lecturer-traveller guest stepped into the dining room and observed her guest already seated at the table by himself and indulging in the salad. He

apparently noted her confusion and immediately came to the rescue by remarking that at one time in his travels he had become ship-wrecked, and that afterwards whenever he observed food he had always promptly partaken of the same. That evening he was entertained at the home of Professor J. P. Van Orsdel, Logging Engineer, and his wife, where as soon as the entire party had gathered for a festive occasion Cary immediately proceeded to corner Mr. Van Orsdel in a discussion of logging engineering much to the chagrin and distress of the hostess, Mrs. Van Orsdel.

The experiences which Cary gained from his travels into the many forest regions of the United States mellowed his judgment of forest values so that when he finally became enamoured with the Southern Region his training seemed well matured for the decisions he was to make before many hundreds of inquiring lumbermen and loggers in regard to the practical application of the profession of forestry.

Cary's Work Begins in the South

Austin Cary felt that he was indebted to Mr. E. E. Carter insofar as the Forest Service organization goes for the opportunity to work in this southern field, and to J. E. Rhodes, former Secretary of various lumber Associations, including that of Southern Pine, who in the early years furnished valuable counsel. Cary first came down to the south in the fall of the year 1917, and took quite a swing around. What he saw in the way of timber and timber growth interested him tremendously. His first cruise ended, he came again at the first opportunity. In the course of two or three years he had things somewhat settled in mind, had come to the conclusion, for one thing, that the South was the timber growing

region of the United States, and realized that he was face to face with the opportunity to convey knowledge of the fact to the southern people.

So he went to it, with all the physical and mental energy he had, contacting timber owners, speaking at meetings, studying on the most vital and practical natural factors, writing as he had material. Here was a point in that connection that may prove interesting. After three years of that, Rhodes and he got together again and agreed that they hadn't started a thing that seemed worth while. President Henry Hardtner, of the Urania Lumber Company, Urania, Louisiana, antedated their efforts, and this to be sure is also true - that here and there through the south, as elsewhere, were individual timber owners and operating concerns that were doing the conservative and sensible thing by their land and timber. The old adage that it is darkest just before dawn was illustrated here. In the autumn of the year 1920 the great concern at Bogalusa, Louisiana, started on the reforestation project that they had been debating for some years. At almost the same time Professor H. H. Chapman of Yale University got the Crossett project in Arkansas under way, and another timber growing enterprise under considerable scale started up in South Georgia. That, Cary stated, was the sort of thing he had been aiming at. Actual business success he looks on as the best sort of stimulation of enterprise of this sort, and next to that, business confidence manifested by substantial people.

A forester in those days could be lonesome if so inclined. Between North Carolina and Louisiana there was no State Forest office,

and no forest school except Athens, Georgia. At Pensacola was the National Forest office; no sign of any experiment station. In contrasting the situation in 1936 with those days Cary remarked: "You always know how things stand today. Some time of late I have felt as old pioneer settlers are said to have felt, that people are getting too thick for me, that I had better pick up and get into some newer country."

Cary Speaks Extemporaneously

At the 34th Annual Meeting of the Society of American Foresters in Washington, D. C., during January, 1935, Cary responded extemporaneously to a request from the Chairman, Ovid Butler, for any comments relative to an important paper which had just been presented by Mr. Henry E. Hardtner with reference to controlled burning, and stated that most of the audience probably knew that for more than 15 years he had worked in the country of the discussion, namely, the southern United States, as represented by the holdings of the Urania Lumber Company. Associations of all kinds were called up to Cary by what had been said, not only by Mr. Hardtner, but also by previous speakers whom he had met many times in the territory. For instance, he had on several occasions heard Mr. I. F. Eldredge speak in the South on fire in that region, and could confirm his own statement that to the best of Cary's recollection, this was the first time he ever spoke in favor of fire, and as a means of protection. Cary then noted that Eldredge's successor in the management of the Superior Pine Products Company* property, Mr. W. M. Oettmeier is following the same

*Superior Pine Products Co. has since used controlled burning in its experiments.

policy that Eldredge did and in a more intensive way, ploughing a very large mileage of fire breaks, inaugurating radio service in addition to look-outs and telephone in the effort to exclude fire entirely.

Cary then said that he had heard Mr. Hardtner also speak on both sides of this question, as Mr. Hardtner would freely admit, and Cary could, too, if he saw fit, remind the Southern Experiment Station of views diametrically opposed to those presented there at the meeting, the Station being very straight-laced about it, as it seemed to Cary.

For his part, in the years during which he had already been in the South he had said as little as he could in a public way, and that for several reasons. For one thing, there was an official policy which one would not care to counter unnecessarily; comity to state foresters holding similar views was another element in the case; then what one might say stood a good chance of being misunderstood or distorted when it got out into the country, with disastrous results. Finally there was an idea that was worth thinking about - that the answer to a problem of this sort may not be uniform always, but one thing in one set of circumstances, and another in another.

He then stated what had been his idea all along since he got his feet planted in that country. Not going into details for justification it was briefly this - that there is a field in those forests of the South for the use of fire for both protection and silvicultural purposes, that there probably always will be no matter how high we may carry out management, that the practical present day question is a matter not so much of what is most desirable in the ideal sense as it is of doing the most practicable thing in the specific circumstances -

natural factors, relation to population and means at command all considered. Looked at that way, the true answer for the owner of property of this kind is often much simpler than it would be to figure out the elements in the case from the technical standpoint. It is such a practical situation with which Cary had dealt, for himself and associates as well as officially. Cary then referred to the fires of the previous April in South Georgia and noted some features. The 17,000-acre fire concerning which Mr. Hardtner had spoken started at noon one day and ran 13 miles before nightfall. That as he noted was on land long protected with a rank growth of grass and bushes. Weather conditions were bad as could be; the growth was largely slash pine, not longleaf, and very much of it young timber less than 30' in height. The growth on the area was not totally destroyed, however. He was over the ground recently and his estimate was that on the acreage covered about one-third of the timber, young and old, was killed. That was bad enough of course; the owner was converted thereby to a policy of protective burning, partial, however, and in connection with protective measures. The same situation prevailed with other owners involved in the fires and other timberland owners in general in that territory. Having slash pine to deal with mostly, they know that for some years after it starts fire must be excluded from it. That stage passed, however, protection burning seems more and more desirable to them. Not uniformly, however. In the very southeast corner of Georgia was good sized property owned by a creosoting Company of Brunswick. After Cary's cruise of the burns referred to, he went to see this Company to hear what they had concluded, what their policy would be

thenceforward. They said they meant to go as they had been going as far as possible excluding fire. That, stated Cary, is a strong concern provided with equipment and well organized; a poor man couldn't possibly equip himself in any such way. He had already referred to the Superior Pine Products Company as following the same policy. Then he remarked that over in southern Alabama there was a big longleaf property successfully protected for around 15 years. The owners of that property as far as he knew, had no idea of changing their policy. Perhaps that is not correct: they would be willing to be shown no doubt. He also mentioned that other strong concerns newer in the business are following their practice.

He then noted this fact - the wide differences in conditions in this big longleaf belt, - the extent to which other species mixed with longleaf - shrub and grass growth vary vastly also. He stated that there is a danger of generalizing too quickly; standardization of practice seemed to him a thing not to be thought of.

He mentioned that most of the assembly present were technical men, though numbers of them have also been responsible for property. He hoped trained foresters would work that way in future more extensively than they have worked in the past. In the meanwhile, untrained men, natives of the country, are doing the job and standing away to reap the rewards whatever they may prove to be. He stated that in this particular field of fire control many of them seemed to him to be doing a pretty good job at it; protecting forests and growing forests.

Influence of Fire in Woods

Cary always was an advocate of Forest Fire Protection. His

inquiring mind, however, in his search for further knowledge takes him back to his early days in New England when he had observed that the origin of valuable timber stands of white pine could be traced silviculturally to previous forest fires 75-100 or more years ago and in the forests of the Lake States the same situation prevailed. Later he determines in the South that fire is likewise necessary silviculturally for the establishment of longleaf pine stands. Also he recognizes the possible need for controlled burning under some conditions in the South where the "rough" or ground cover might otherwise, in spite of fire lines, constitute a very serious fire hazard.

Addresses National Chamber of Commerce Committee

In speaking before a Committee of the National Chamber of Commerce in 1922, Cary made several remarks with reference to the South:

> This Section is only now fairly beginning to learn that timber is not everywhere and always to be taken for granted like air and water, but it is a thing that in more or less degree has to be provided through forethought and effort.
>
> I mentioned at the hearing the widely prevalent habit of using winter fire in the supposed interest of grazing, and that regardless of ownership and the wishes of the owners of land. I also mentioned the deep-rooting of the custom. This practice on large areas prevents reproduction of timber; after they are well started the southern pines are rather hardy against fire. This in my judgment is true also in considerable pine territory - that controlled and properly timed fire is in present conditions the best practical safe-guard against extensive damage from the same source.
> Some general characteristics of the South as compared to northern communities are widely understood. In

general, there is less respect for property, for law and for others' rights. In certain sections there is dense ignorance and a very low type of life all round. The plane of public life is not so high, but the last legislature of one southern state was apparently in control of the free range interest, while the tax system of another is run in such a way that it is very precarious to do business of any kind. As for the lumber industry, it seems to me to contain some very hard men, but it may also have been true that they have had to be hard to maintain their rights and get their work done.

.... The South has in its keeping the greatest of our potential forest resources, yet the balance of the country will do well, in my opinion, to exercise a degree of forebearance; it may be considered in fact to owe that to the South. On the other hand, I feel that when sufficient preparation has been made there will be a larger field than elsewhere for the use of authority, or compulsion, for reasons that will have been gathered from the above.

Views on Capper Report and Copeland Report

The Capper Report and Copeland Report stimulated a great deal of discussion prior to and after their presentation, respectively, in 1921 and 1933. Although Cary guarded carefully the prerogatives of his public office with the United States Forest Service, nevertheless, he was well represented in the debates which followed these two important documents. Not until after his retirement from the government service in 1935, however, did he permit his personal opinion to be heard above what had been his official views.

Cary Defends Lumberman

The issues of these debates centered somewhat around Private and Public forestry, and Cary defended the cause of the lumberman wherever justifiable and for this reason merited his almost universal success in dealing with forest landowners.

He considered lumbermen and loggers to comprise a most

democratic group and stated in 1916 that lumbering in New England ramained yet on a moderate scale and was largely worked, or was a few years before, by native and provincial labor. Democracy, he said, was certainly a feature there, however. It was also in the Lake States when lumbering was the great and characteristic industry, and to his knowledge the same was true in large measure in the Northwest at that time. He remarked that the conditions of the life no doubt had much to do with that. When men face cold, rough living, and hard labor together, less elemental things count for less in comparison, and man gets to man in the primeval, direct fashion. At any rate, he possessed that feeling about lumbering, and prized it.

Cary was impressed by an address made by Mr. George S. Long, then Manager of the Weyerhaeuser Timber Company, before a meeting of the Forestry Club of the University of Washington in which he told the fellows that the chief element in their success would be to have the men like them. Not the kind of job altogether, or the conditions of work, or the pay - but, do they like you? Mr. Long stated that if they do they will work with heart, and when a pinch comes will jump into the collar and take the load over. Cary believed that that has been true in very large measure of American lumbering, particularly of the logging branch of it. He said that he wished it might always be true in industry, for relations of that kind between men either settle or stifle a good many possible questions.

Another point that Cary brought out was the discipline of industry. He had heard intellectual men talk in a disparaging way of business, and he said that perhaps in his younger days he rather

looked down on it himself; but if so, experience had led him to look at it differently.

Cary wished to emphasize also the necessity, the indispensableness, of industry, and here again he could enter the subject best from a personal reminiscence. On one occasion he remembered noticing the scarcity of local help to properly man a contemplated enterprise. "That's all right," said one of the men along. "That will take care of itself. There is never any trouble but that when you get to doing business men will come to you." And that, Cary remarked, when you think of it, is a very significant thing. The fact is, he said, men must work to live - it is a part of the law laid down for mankind at the start - and man's forbears, too, had this to do. Cary stated that work not only supplies the necessities of life, but it fulfils the necessity of our natures, and in these times men without that particular capacity flock to the one who has the genius of organization for production.

Cary included in his letter of April, 1934, to President Roosevelt a discussion relative to the Capper Report. In 1920 the Capper Report summarized the state of affairs in the Southern Region, in the production of naval stores, in a way that clearly indicated the exhaustion of available timber at just about that date. Certain business concerns, taking this at its face, acted in accordance therewith, one great concern starting manufacture of the same products from resinous dead wood, and the paint and varnish industry setting chemists to work to find substitutes. What, however, has been the outcome? In the time that has lapsed the naval industry has produced some of the largest crops in

its history; the government is today urging and helping it to control production; its well informed members are apprehensive of a surplus of timber arising in from one to two decades, expecting in fact the appearance of several times the amount it can possibly use unless it expands its markets. Special circumstances are involved here that will be clearer later; however, Cary did not mean to imply that the instance is typical. The unreliability of figures of this kind is, however, he said, strongly illustrated.

Cary stated that the Copeland report of 1933 was much more elaborate and impressive. It was, however, produced by much the same men, the same bias and one-sided training, he said. Inevitably much of its material is estimate or guesswork, he added. One fact entitled to tremendous weight in final conclusions to be drawn is given scant emphasis - the fact that in three decades from about 1900 to 1930, due to substitutions for wood and changes in the habits of people, the total yearly drain in the forests of the United States shrank by just about half. Cary stated that this line must, however, be cut off. He concluded by saying that numbers of informed and interested men he knew were of the same mind as himself in thinking that while conservation of resources and improvement of natural conditions were truly matters of great importance at which all concerned should persistently work, the urgency was not so great but that they could take time to go about it economically and in order.

Cary said that a second line of consideration was of utmost importance - the matter of public or private ownership and management of forest. The report referred to asserts that private ownership has

failed already, was the cause of the bad conditions represented, and asks for very extensive acquisition by the public, Cary stated.

Cary's Ideas on National Forest Policy

In 1922 Cary wrote some of his ideas on National Forest Policy for the Committee of the National Chamber of Commerce. He understood the main task of the Committee to be the outlining of legislation required to secure ends recognized as desirable, adjustment of relations in that field between State and Government, and planning for provision of funds that may be required. He did not think he could contribute directly to any material extent. His thinking, he said, had not run in those channels. He believed that to set limits to a problem and give relative weight to different features was also worth while, however, and it may be that he could do something in that direction.

He agreed with Chief Forester Greeley that control of fire in our wooded lands was the first thing to look after, and that when this was done, timber production and reproduction would follow on vast areas spontaneously and in generous amount. He stated that no man can tell how much of our need for timber the effective handling of this one element would meet, but a good share of it at any rate; then behind reasonable safety from fire he believed there was bound to spring up a variety of other productive measures. As for the organization and expense involved, that seemed clearly to Cary to be a co-operative proposition. In most circumstances the owner of land cannot do the work alone, he said, nor, on the other hand, should the stingy and hang-back kind of man be allowed to endanger others, or himself go cost free. Ratings had been proposed on which it was thought

that expense of fire control could be shared equitably by owners, the State, and the Federal Government, and Cary did not care to approve or criticise any. Cary remarked that an idea, collateral to the main one of this topic, seemed worthy of statement -"that some areas of land are so hard to protect from fire and of so little productive power that they are not worth the expense involved."

The next most pressing thing in Cary's opinion was to lay the foundation for a large area of public forests - National, State, municipal, any that could be put through. That judgment did not arise from any predilection for collective as against private enterprise, but from the fact that the experience of mankind, as Cary understood it, teaches the necessity of the measure. He was as much a believer in private forestry as any, he thought, but on some types of land and for some classes of products, public ownership and the type of management it brings are essential.

That, he realized, was putting up quite a proposition, but what they were trying to do, he took it, was to ascertain clearly what was before them if this matter was to be fixed up right. Two or three collateral points, he said, may be noted in passing:

> First, that exchanges of land, and of stumpage for land, in connection with National Forests are in line with this idea; second, that public forests promise in this country as in Europe to provide generous public revenue; third, that the land areas required for such forests will be acquired more cheaply the quicker we go at the job.

The two things above noted seemed to Cary not only the biggest and most important in the field under consideration, but in a way the simplest, by which he meant that in his opinion men would most readily

agree to their desirability and gather to their support.

Cary Disapproves of Regulation

Regulation of privately owned forest land by law or public administration was a thing which naturally did not appeal to Cary, his position being that those concerned wanted as little of it as they could get along with.

He didn't want to see forestry thrust on the country as prohibition was. He didn't want management of the timberlands of this country by a bureaucracy in Washington. He thought we had better suffer a good deal from timber shortage rather than try those things.

He had, however, supposed that, paralleling the experience of older countries, we sould come to use more or less of these principles some time. As an indication of the time when it would be needed and could be successfully carried out he had in mind this sign - that men of experience, standing and judgment, informed of the facts but outside the technical interest, should believe that the time has arrived and stand ready to support and guide it. Right-minded men in the lumber industry were included in that view.

Cary remarked that adequate and equitable fire control involved compulsion to some extent; so did the seed-tree law of Louisiana, and certain laws on that and other matters then in force in the New England States. He believed in these, as far as they were found to work well, in their enforcement and extension on the same grounds. He noted that they related to fundamentals, were general in application, and simple; moreover, he said that local support based on general intelligence and special education, also a really competent force to administer them,

were behind these measures or were assumed.

Forest Management on Privately Owned Lands

Cary commented in 1925 at the Annual Meeting of the Society of American Foresters upon the paper "Forest Management on Privately Owned Land" by Carl M. Stephens, Consulting Forester of Portland, Oregon.

Allowing for all the factors of locality, time between outlay and return, competition, risk and taxation, Cary expected timber growing to be engaged in on quite an extensive scale by individuals and corporations in this country. The thing was, in fact, sufficiently in evidence at that time to warrant strong expectation, and in weighing the prospect he thought those concerned were under obligation to consider that in spite of all foresters had done in the last 30 years, broadly speaking the idea in this country was a new one. Fifteen years from then, in his opinion, a different story would be to tell of those naturally quick and responsive people.

Cary remarked that it was natural that this course should begin in the most favorable regions, such as the white pine section of New England, slash and loblolly pines in the Southeast, redwood, Douglas fir probably, particularly favorable localities for hardwoods. Favorable regions meant in that case, he said, those whose trees are of great value, reproduce readily and grow fast; also sections where such matters as taxation were at least tolerable. Here men's natural instincts, he believed, could be trusted to do the bulk of the work required and more efficiently than any other agency that could be set at it. The area over which that holds, he added, would extend as time passed.

Not, however, he further remarked, that effort should relax for the establishment of tolerable tax and fire conditions, nor that education, demonstration areas controlled by public agencies notably, might not stimulate and guide development. All lines of effort that people were accustomed to put out or consider had, it seemed to him, legitimate part in the development. And in that connection he called attention to one more thing - to the fact that if all concerned simply stopped destructive practices, as for instance needless fire and the destruction of all source of seed supply, much timber would be grown on private lands without special design, effort or cost on the part of the owner.

Laissez Faire vs. Foresight in Forest Management

One of Cary's papers in which he showed how lumbermen in following their own interests have served the public brought forth a reply from Mr. Burt P. Kirkland, Professor of Forestry at the University of Washington, entitled "Laissez Faire vs. Foresight in Forest Management." Cary had, as usual, expressed the thought that the lumbermen in applying such practical measures of forestry as were apparent to them were in reality applying the principles of forestry. Kirkland responded by stating that in a large measure Cary's article was a challenge to the whole system of training for forest industry. Kirkland stated further that in his judgment the American people were turning quite definitely from the Laissez Faire system of handling industry to control in the interest of the whole community.

Cary in his reply in a paper entitled "Comments on Kirkland's Criticism" remarked that, like Kirkland, he did not wish to thresh

over old straw or start controversy about details, but he did feel that his computation of growing stock necessary to produce the nation's present annual cut of forest products should be questioned as somewhat similar presentations had been questioned before. Then Cary remarked that as one inclined toward Laissez Faire up to the point where really substantial interests of the country can be shown to suffer by its perpetuation, he was a believer (like Kirkland) in the general soundness of industrial forces, and further that these can be supplemented by educational means.

Later in a letter of March 3, 1920, Kirkland responded to Cary with further discussion with reference to this type of forestry which Cary had previously referred to as "opportunist, catch-as-catch-can" forestry. Kirkland remarked here as follows: "However, it appears there is plenty of evidence that by ten years from now the South will need whatever timber production it can muster for its own industrial needs, and will not be any great help to the rest of the country." Further he concludes, "I believe, as you say, that your work in extending forestry has been successful in New England, and believe with you that the leisure to carry on such work in the South would bring great results. It would be extremely useful if there were more men able to devote their time to this field, as I think, as you say, it is really the most hopeful field for immediate results right now because it is possible to convince the influential people who can get results at once."

Extension Forestry

Cary was always interested in extension forestry, and, in fact, accomplished much in this direction in all of the forest regions of the

country although in his position as Logging Engineer for the United States Forest Service he was not listed as an extension forester. He refers frequently in his notes to Joshua A. Cope, Extension Professor of Forestry at Cornell University.

In 1924 he refers to his friends, Messrs. Deering and Bradbury, at Hollis, lumbermen but interested in everything from the field of forestry that touches them, who cut lots of well-developed pine mixed with some hardwoods, one each in the winter of 1919-20, 1920-21, and 1921-22. Cary remarked that the chance to observe reproduction in relation to the seed year was obvious, and it was utilized. The first lot cut is now growing up to hardwoods, only occasional young pines being found in it. The lot cut the next winter, when the seed was on the ground, is now thick in the young pine, thicker than need be. As for the third, in the fall of 1921 he and his associates went over it, finding it to have reproduced fully. In 1924, however, Cary found reproduction to be far less satisfactory on this lot than on the preceding. Rooting up by the logging and smothering under slash piles easily accounted for a part of that, he said, but did not seem to entirely do so. Professor Fisher of Harvard University, asked his idea on the subject, said he thought the Hylobius beetles accounted for it, that 2-year-old pine seedlings in the summer of 1922 would be nuts for them.

Cary Honored

In 1922 Cary was awarded the degree Sc.D. at Bowdoin College. In 1924 he was elected a Fellow in the Society of American Foresters at a time when there were less than a dozen Fellows in the entire Society,

in which Society he was elected to membership March 2, 1905. On March 1, 1905, he was appointed as Forest Expert in the U. S. Forest Service, but his extended tenure of office did not commence here until 1910.

In his late years Cary frequently reminisces concerning his service upon the forestry faculty at Harvard University on which he was appointed Assistant Professor of Forestry in 1905 and served in this capacity until 1909.

Later in his life Cary makes some interesting comments concerning this period when he was occupied as a member of the University faculty. He remarks that one of the biggest disappointments of his entire life came in connection with this early service, where he had, of course, already had the experience of student consultations and debates. He was prepared with ideals of thoroughness and business-like procedure in order to qualify for a position upon the University staff. He was chagrined because the academic procedure of a University did not meet his ideals of the more practical application of service such as he had been accustomed to in the quick decisions of a New England logging camp. He was never opposed to theory, but always sought a practical interpretation. He had thought that one of the rewards of being a member of a college faculty would be to see "business done like business," but because of his temperament the disappointment he encountered in this regard remained with him throughout his life.

Trip to Spain and France

During 1924 Cary made a trip to Spain and France with representatives of the American Naval Stores Commission where he made many interesting observations. Upon his return he continued his activities in the

naval stores industry of the South where he later made experiments dealing with the French methods of turpentining such as he had observed previously. In this connection he was always associated in the minds of the southern naval stores operators with two other prominent workers in this field, namely, Dr. Eloise Gerry of the U. S. Forest Products Laboratory, Madison, Wisconsin, and the late Dr. Charles H. Herty, an eminent scientist of Savannah, Georgia.

Retirement from U. S. Forest Service

Cary was retired from active duties as Senior Logging Engineer in the U. S. Forest Service on July 31, 1935. His career in public forestry had been long and notable, and he received at this time many complimentary tributes with reference to the marked individuality of his forestry program, and especially relative to his unending influence in the South. Mr. A. B. Hastings, Acting Chief of the Division of State Cooperation, U. S. Forest Service, contributed an appropriate article entitled, "Austin Cary Retires," to the JOURNAL OF FORESTRY*, and the late Chief Forester F. A. Silcox of the U. S. Forest Service wrote him, "You are to be congratulated most heartily on the things which you have done for foresters in the United States. You have been the means of improving forest lands, especially in the South and in the Northeast. This must be a source of great satisfaction to you as it is to the Forest Service."

Upon his retirement from a quarter of a century of service dedicated to the U. S. Government, Cary immediately took up the cudgels in

*Sept. 1935, p. 820.

behalf of private forestry, inasmuch as he personally felt it to be his duty to protest against the form which the public acquisition policy took in his home state of Maine. He was apprehensive, too, of the possible interference with private forestry in the extensive purchase program in the South, and he felt it to be his duty to bring this matter before the National Forest Reservation Commission. This kind of public effort, however, on his part was somewhat foreign to his trend of activity, and although he persisted in his efforts, he remarked later that he was much more satisfied to continue his customary methods of individual contact through conservation and personal public discussions.

Southern Forests a Resource to Entire Country

During his employment by the U. S. Forest Service, Cary made many important contacts throughout the South. In an address before the New England Forestry Congress, Boston, Massachusetts, he remarked:

> Beginning at Chesapeake Bay and stretching in a belt 1,500 miles long to the line of prairie in Texas, reaching inland to the base of the mountains in some places and west of the Mississippi River into the State of Arkansas, in the southern pine belt so-called, a region of potential forest about five times as large as all New England, in comparison with which our white pine area is but a spot on the map. Rather sparsely populated as yet, though early settled on, vast areas are today either occupied by forest or available for that use. Tree species of the most serviceable kinds characterize it and, owing to soil and climate, timber on much of it grows several times as fast as that of our north woods, at a rate in fact that I suppose is not surpassed, for so large a territory, anywhere on the face of the earth. Here then is a resource awaiting appreciation and development, of vast importance not only to the South itself but to the country at large. To New Englanders, in my opinion, it means these two

> things: First, a field inviting enterprise in timber growing and the industries based on timber. Second, as we consider plans for producing timber locally, we must consider also the possibility of competition arising from that source.
>
> An application I wish particularly to make is to our northern woods and paper industry. By all means let us maintain the productiveness of those woods as far as we readily and profitably can, and let us be thankful for the volume of industry, large as it is, that their production on that basis will support; further, we should be not only dull but remiss if we failed to take full advantage of the technical qualities of our spruce. Of intensive forestry, however, [of any] costly measure to promote production applied to forests of no greater natural capacity to produce than these, I doubt the wisdom until the suitability of southern woods for paper making and of the South to this form of manufacture has been fully sized up.

He refers in his notes to a big saw mill down at Century, Florida, which he had passed a number of times, and finally stopped there to see if he could be of any cooperative service to the management. This was in the spring of 1921 just previous to the closing of his southern work for the season.

The general manager proved to be a very pleasant sort of man, and when Cary introduced himself, he was strongly interested. "Lots of government men call on me, and usually they make me a lot of trouble," he said. "You're the first one that ever offered to do something for me. You say you're going north right away. When can you come back again?"

Cary named a time in the fall, with ten days leeway, and when he came around again the general manager noted, the first thing, that he was within the time limit. Then he told Cary of his situation - the acreage owned and approximate amount of timber on it, the general logging plan and methods, the size of the manufacturing plant, and

reasons why that particular plant was economic. The first thing he wanted to know was whether he could, by use of practicable measures, arrange to run that plant continuously; after that, anything that was useful. And this was true further - that he was willing to go into the woods himself. In fact, he occasionally took along the ladies of his family.

Consulting Forester

The plant referred to at Century, Florida, is that of the Alger-Sullivan Lumber Company, under the able leadership of Mr. E. A. Hauss, President. Austin Cary thereafter visited this company about yearly while he was in the Forest Service, ascertained what they had done meanwhile, and passed along any ideas he had that he thought might benefit them. Then in the fall of 1935 while open for employment on a commercial basis the first job he had was with that company. He also extended these services of consultation to President W. T. Neal of the T. R. Miller Mill Company, Brewton, Alabama, and President E. C. Gates of the Jackson Lumber Company, Lockhart, Alabama.

When he returned from one of these consultation trips during the spring of 1936, he was busily occupied with Mr. S. J. Hall of the Forest Managers, Inc., Jacksonville, Florida, in making studies of mutual interest. Cary was an inveterate note-taker, and kept records of all of the field observations which he made with his associates. These notes are available at the School of Forestry of the University of Florida, as cataloged here.

Cary Lectures before Forestry Students, University of Florida

It was at this time, when in April, Dr. Cary lectured before the

students of the Department of Forestry of the College of Agriculture at the University of Florida while they were on a field trip with him to the vicinity of Starke, Florida, where he had previously conducted many interesting naval stores experiments. He then reviewed his life history and remarked how in the beginning he had "scratched along" from 1892 to 1898 and had survived this work with winter temperatures of below zero F. in Maine, Michigan and Wisconsin, which was not always easy, but, nevertheless, was "carving out a future," in spite of the fact that he "punished himself."

Austin Cary Passes

The entire profession of forestry was shocked to know that in spite of Cary's apparent excellent health, he passed away on April 28, 1936 (within a week of his excellent lecture before the forestry students). He died before noon from an attack of heart disease while on a visit to the forestry boys at the University of Florida. In one hand he held an autographed copy of his Manual, and in the other, a book upon which he had made previous comment to the students, entitled "Hellements of Hickonomics in Hiccoughs of Bursts Done in Our Social Planning Mill," by Stephen Leacock. It is interesting to note that within the pack sack in his automobile, among many other things, he had fishing tackle, a can of sardines and a box of crackers, indicating that he was always prepared for such necessary recreation as should accompany a forester's field trips.

His brother, George F. Cary of Mount Dora, Florida, representing the estate, donated to the University of Florida the Austin Cary

Memorial Set of Notes, which Notes were later released to the University by the legatees named in Austin Cary's Will.

The excellent picture of Dr. Cary which is a frontispiece for this publication was photographed just a year prior to his death by the late Wilbur Mattoon of the U. S. Forest Service.

The funeral services were held at Lake City, Florida, where Dr. Cary had resided since moving from Starke, Florida. The Reverend W. T. Halstead, Pastor of the First Baptist Church, Lake City, conducted the services. Austin Cary had been a member of this Church, and was active in Sunday School work.

Memorial to Cary

The Society of American Foresters at the 36th Annual Meeting held at Portland, Oregon, December, 1936, authorized an appropriate Memorial in honor of Austin Cary to be erected at the entrance to the School Forest of the University of Florida where President J. J. Tigert of the University and the State Board of Control had made this arrangement possible.

President H. H. Chapman of the Society appointed the following Executive Memorial Committee: C. H. Coulter, Tallahassee, Florida; Ernest F. Jones, Bangor, Maine; A. B. Hastings, Washington, D. C.: A. E. Wackerman, New Orleans, Louisiana; John B. Woods, Washington, D. C., and H. S. Newins, Gainesville, Florida, with the latter as Chairman.

Appropriate plans were submitted by W. H. Reinsmith, Landscape Architect of the Southern Region of the U. S. Forest Service, Atlanta,

Georgia, and the Memorial was ready for the Dedication and Presentation Exercises which were held on January 14, 1939, as follows:

Dedication of the Austin Cary Memorial at the Austin Cary Memorial Forest of the Florida Forestry School (8 miles north of Gainesville, Fla., on the Starke road).

Presiding: G. H. Lentz, Chairman, Southeastern Section, S. A. F.
Invocation: Rev. W. T. Halstead, Baptist Church, Lake City
Appreciation of Dr. Austin Cary:
A. B. Hastings, U. S. Forest Service
W. T. Neal, President Southern Pine Association
Presentation of the Memorial to the Society of American Foresters:
Director H. S. Newins, Chairman of the Memorial Committee
Acceptance of the Memorial for the Society, and Transfer of its Custody to the University of Florida:
Dr. C. F. Korstian, President, Society of American Foresters
Acceptance of the Custody of the Memorial:
Dr. John J. Tigert, President of University of Florida
Inspection of the Austin Cary Memorial Forest.

Upon the unveiling of the granite boulder, which had been shipped from Maine by Cary's New England fellow foresters, there was revealed upon the bronze plaque with pine cone frieze the following inscription:

1865 - Dr. Austin Cary - 1936

"The Society of American Foresters and friends of Dr. Austin Cary have erected this memorial in deep appreciation of his unending interest and effort toward the promotion of sound forestry practices in the United States."

This inscription was prepared by T. A. Liefeld, In Charge, Lake City Branch, Southern Forest Experiment Station, Lake City, Florida.

There were contributions from the many friends of Austin Cary whose names are legion and too numerous to include in this brief sketch of his life.

One of the forestry students of the University of Florida,

Orville W. Struthers, contributed a poem to the press at the time of the death of Dr. Cary, and we are pleased to present this poem here:

A TRIBUTE TO DR. AUSTIN CARY

Who fought for forestry from the start,
Who lived for it with all his heart,
Who every phase of forestry knew,
And fought the Battle hard and true?
"Doctor Cary"

Who was a pioneer in his game,
Who never tried for worldly fame,
Whose every effort was bent
To serve mankind, his heart's content?
"Doctor Cary"

Who, when the end of life was near,
Still gave his all without a fear;
Whose dying effort, though not in pain,
Was given to the Forestry Game?
"Doctor Cary"

Now he is gone, we will not mourn,
For him in Heaven a new life is born;
And although we miss his even tread,
His work, his memory, are not dead.

Austin Cary's last public address was the presentation of his paper "Common Sense in Conservation" at the 35th Annual Meeting of the Society of American Foresters in Atlanta, Georgia, January, 1936, at the conclusion of this address he spoke unwittingly his possible epitaph in six short words which he thought could serve to convey all that might be stated at much length:

"I HAVE LIVED IN GOOD TIMES!"

A.D(s).
A.D.S.
A.Df(s).

A.Df.S.

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T.L(s).
T.L.S.
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vol(s).

ABBREVIATIONS

A.D(s).	--autographed document(s); in author's handwriting, unsigned.
A.D.S.	--autographed document signed; written and signed by author.
A.Df(s).	--autographed draft(s); rough copy in author's handwriting, unsigned.
A.Df.S.	--autographed draft signed; rough copy in author's handwriting and signed by author.
A.L.	--autographed letter; unsigned but in author's handwriting.
A.L.S.	--autographed letter written and signed by author.
A.N(s).	--autographed note(s); written by author but unsigned.
A.N.S.	--autographed note written and signed by author.
A&T.	--autographed and typed; handwritten by author and typed or partly typed.
CC.	--carbon copy.
Df.S.	--draft signed.
D.S.	--document signed but not written by author.
ed.	--edited.
et seq.	--et sequentes, et sequentia; and the following.
L.S.	--letter signed but not written by author.
mimeo.	--mimeographed.
Ms(s).	--manuscript(s).
n.d.	--no date
n.p.	--no place of publication given.
No(s).	--number(s).
p(p).	--page(s).
pr.	--printed.
Supt.	--superintendent.
T.D(s).	--typed document(s).
T.D.S.	--typed document signed.
T.Df(s).	--typed draft(s).
T.Df.S.	--typed draft signed.
T.L(s).	--typed letter(s).
T.L.S.	--typed letter signed.
tr.	--translated.
vol(s).	--volume(s).

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I. AUSTIN CARY MANUSCRIPTS AND PRINTED ARTICLES

(Manuscripts are entered chronologically under each classification, printed articles alphabetically by subject. An exception is made where there is a series of both manuscripts and printed articles which obviously should not be separated. In such instances the entry is among the manuscripts.*)

General

1929. Mar. Memorandum on lines of work for the Starke (Florida) Station. 2 pp. typed. (1)

1929. May. The nation's dependence on Southern forestry. Paper read before the annual meeting of the Georgia Forestry Association. 12 pp. typed. Pub. in NAVAL STORES REVIEW, Aug., 1929. Printed copy attached. (2)

"Making a College Forest Pay Its Way," AMERICAN LUMBERMAN, Mar. 22, 1930. 2-page reprint. (3)

Forest Botany

1926. May. Extensive surveys, longleaf-slash type in Southern Georgia. 97 pp. typed. The volume contains tables, a map, graphs, and 42 photos. (4)

1933. Memorandum for forest supervisor (E. W. Hadley, of Osceola National Forest, Lake City, Florida). 1 p. typed. (5)

1934. Jan. 5. Memorandum on drainage , for Forest Supervisor Hadley. 11 pp. typed. (6)

Silviculture

1932. Jan. 4. Memorandum for Forest Supervisor Hadley. 3 pp. CC. (7)

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*Infra, pp. 4-7

1932. Jan. 21. Memorandum for Forest Supervisor Hadley. 3 pp. CC. (8)

1932. Feb. 4. Memorandum for Forest Supervisor Hadley. 1 p. CC. (9)

1933. Follow-up on drought effects. 15 pp. typed. Pub. in NAVAL STORES REVIEW in two installments, Mar. 11 and May 18. 2 printed copies attached. (10)

"Forest People," AMERICAN FORESTS. XXI, Nos. 383, 664 (Nov., 1925). 3-page printed copy. (11)

"The Pine Forest: The Present and the Future of Naval Stores." NAVAL STORES REVIEW, Sept. 28, 1929. 3-page printed copy. (12)

"Some Practical Aspects of Forest Conservation." AMERICAN LUMBERMAN, n. d. 1-page reprint. (13)

Forest Protection

1927. Dec. 8. Memorandum on Florida forest and fire for district 7. 5 pp. CC, with 5-page A. Df. (14)

1928. On the fire at Cogdell. 5 pp. CC, with 5-page A. Df. (15)

1932. May. Some relation of fire to longleaf pine. 12-page T. Df., 15 pp. original data and graphs, corr. with Prof. H. H. Chapman, Yale School of Forestry, and Mr. Reed, district forester, Washington. Pub. in JOURNAL OF FORESTRY, XXX, No. 5 (May, 1932). 8-page reprint with printed graphs attached. (16)

1932. July. Notes for Mr. Morrell and the fire committee of the Society of American Foresters. 8 pp. CC. (17)

1934. June 27. Memorandum on code application to the naval stores industry. 3 pp. CC. (18)

1935. Jan. and Mar. Memoranda on fire weather service for forest service officers. 4 pp. CC. (19)

"Dr. Cary Comments on Recent Forest Fires in Southeast Georgia." NAVAL STORES REVIEW, Dec. 3, 1934. 3-page printed copy. (20)

"Preventing Forest Fires by Weather Predictions." NAVAL STORES REVIEW in two installments, July 22 and Aug. 3, 1935. 3-page printed copy. (21)

Forest Utilization and Lumbering

1927. Feb. 22. Gist of talk made to Pine Institute of America at a meeting of the Pine Institute of America, in Jacksonville. 13 pp. typed. Pub. in part in NAVAL STORES REVIEW, Apr. 2, 1927. (22)

1933. South Georgia should be one of America's perpetual great timber resources. 5 pp. typed. Pub. in NAVAL STORES REVIEW, Sept. 1, 1933. (23)

"Accomplishments in Practical Forestry." LUMBER WORLD REVIEW, Nov. 10, 1921. 5-page photostatic copy. (24)

"The South as a Source of Future Timber Supplies." AMERICAN LUMBERMAN, in three installments, Mar. 14, Mar. 21, Apr. 4, 1931. 2-page reprint of each. (25)

Forest Technology

n. d. Notes for bulletin on naval stores. (Outline of Cary's idea for such a publication; incomplete.) 5 notebooks 4 x 6 A. D. (26)

n. d. Forest management for naval stores and timbers. Three with above title, 12 pp., 8 pp., 13 pp. A. D. (27)

n. d. Introduction for naval stores handbook. (Outline and ideas to be incorporated; incomplete.) 7 pp. T. and A. (28)

n. d. Management of turpentine forests--a series of 14 papers pub. in NAVAL STORES REVIEW: (29)

1. Motive in thinning. 3 pp. typed with 3-page A. Df. attached. Pub. summer, 1930.

2. Quality in trees--their suitability for different purposes. 4 pp. typed. Pub. summer, 1930.

3. Timber suitable for naval store purposes. 8 pp. typed with 8-page T. Df. Pub. summer, 1930

4. Comparison to French maritime pines. 7 pp. typed with 4-page A. Df. Pub. summer, 1930. Printed copy attached.

5. French thinning. 4 pp. typed. Pub. summer, 1930.

6. Continuation of thinning. 5 pp. typed with 5-page T. Df. Pub. summer, 1930.

7. Resume of previous papers. 6 pp. typed with 4-page T. Df. Pub. summer 1830.

8. Review of first seven papers--thinning and lumber production, continued. 11 pp. typed with 11-page T. Df. Pub. May 1933.

9. Thinning taken up in a general way. 6 pp. typed with 7-page A. Df. Pub. June 3, 1933. Printed copy attached.

10. Height and growth relative to thinning. 6 pp. typed with 2 ten-page T. Df. Pub. June 10, 1933. Printed copy attached.

11. Development of the tree in relation to light. 9 pp. typed with 14-page T. Df. Pub. June 17, 1933. Printed copy attached.

12. Effect of fire with relation to thinning. 7 pp. typed with 20-page T. Df. Pub. July 1, 1933. Printed copy attached.

13. Phenomena of fire in turpentine woods. 9 pp. typed with 12-page T. Df. Pub. July 8, 1933. Printed copy attached.

14. Thinning results and observations on two stands in West Florida. 10 pp. typed with a 15-page T. Df. Pub. July 24, 1933. Printed copy attached.

n. d. Timber resources available for U. S. naval stores industry. 5-page A. Df. (30)

n. d. A look ahead. 22 pp. CC. Pub. in NAVAL STORES REVIEW, 1921. (31)

n. d. General notes on production methods. 18 pp. A. D. (32)

n. d. Tests on the flow of gum, by Cary and E. Gerry in cooperation with the Southern Ry. Co., at Pregnall, S. C. 2 fifteen-page paper-bound T. Ds. with photographs; 14 pp. of data and notes; 5 one-page letters from J. F. Wynn, forester, Southern Ry. Co., to Cary, and 2 two-page letters from E. Gerry to Cary. (33)

n. d. Studies on the flow of gum in relation to profit in the naval stores industry; 46 papers bearing the above general title, pub. in NAVAL STORES REVIEW at intervals between Nov. 19, 1921, and May 21, 1932. [Titles or sub-titles derived from contents were supplied by the compiler for the papers which are starred.] (34)

1. "Interesting facts Worthy of Consideration by Operators." Pub. Nov. 19, 1921. 1-page printed copy.

2. "Methods and Results of Tests on Longleaf Pine." Pub. Dec. 3, 1921. 1-page printed copy.

3. "Further Interesting Results on Tests on Longleaf Pine." Pub. Dec. 10, 1921. 2-page printed copy.

4. Discussion of methods. 9 pp. typed. Pub. Dec. 24, 1921.

5. "The Yields of Different Sized Trees as Shown by Careful Tests." Pub. Dec. 31, 1921. 2-page printed copy.

6. Further data of value to naval stores producers. 11 pp. typed. Pub. Jan. 7, 1922.

7. "Results of Extensive Experiments in Working Longleaf Virgin Timber." Pub. Jan. 14, 1922. 3-page printed copy.

8. *"Shrinkage in Second Year Yield: Excess Yield of Slash over Longleaf: Effect of Face Width." Pub. Dec. 2, 1922. 2-page printed copy.

9. "More Valuable and Interesting Data Compiled in Actual Working of the Pine: Observations the Producers Should Study." Pub. Dec. 16, 1922. 2-page printed copy.

10. "Further Valuable Data of Interest to the Turpentine Operators with Especial Reference to Slash Pine." Pub. Jan. 6, 1922. 2-page printed copy.

(30) 11. *Reforestation. 10 pp. typed. Pub. Jan. 20, 1923.

(31) 12. "Width of Faces." Pub. Mar. 3, 1923. 2-page printed copy.

(32) 13. *"One-Face Versus Two-Face Trees." Pub. Dec. 22, 1923. 2-page printed copy.

14. *Yields from trees of various diameters. 9 pp. typed. Pub. Jan. 5, 1924.

(33) 15. *"Chipping." Pub. Feb. 2, 1924. 1-page printed copy.

16. Yields per streak per face. 6 pp. typed with 6-page T. Df. Pub. Apr. 26, 1924.

17. * "Streaking: Depth of Streaks." Pub. May 3, 1924. 3-page printed copy.

(34) 18. *"Results and Summary of Three Years' Working." Pub. May 24, 1924. 2-page printed copy.

19. *"Progress in the Naval Stores Industry." Pub. Aug. 15, 1925. 2-page printed copy.

20. *Yields from one and two-face trees. 5 pp. typed. Pub. Aug. 22, 1925. Printed copy attached.

21. *Narrow chipping. 9 pp. typed. Pub. Aug. 29, 1925.

22. *"Correlation of Results on Width of Face, Depth of Chipping and Number of Faces." Pub. Sept. 5, 1925. 4-page printed copy.

23. *"Depth of Chipping." Pub. Sept. 19, 1925. 2-page printed copy.

24. "Back Cups Versus Front Faces." Pub. n. d. 2-page printed copy.

25. *Faces that do not pay. 8 pp. typed. Pub. Apr. 16, 1927.

26. "Chipping and Facing." Pub. Apr. 30, 1927. 2-page printed copy.

27. How the yield of gum is affected by the scorching of trees. 9 pp. typed. Pub. Mar. 3, 1928. Printed copy attached.

28. Yield of gum in Georgia, South Carolina, and Florida tests. 9 pp. typed. Pub. Sept. 15, 1928. Printed copy attached.

29. Working unprofitable faces: those placed on trees too small to yield sufficient gum. 7 pp. typed, with 8-page T. Df., 3 pp. data, and 4 one-page letters to Cary from Stallworth Turpentine Co. Pub. Sept. 22, 1928. Printed copy attached.

30. How the growth of trees in height and diameter is affected by working of naval stores. 10 pp. typed, with 2 original graphs. Pub. Sept. 29, and Oct. 8, 1928. Reprint attached.

31. *Continuation of discussion of 30th paper. 5 pp. typed, with 5-page T. Df. Pub. June 1, 1929.

32. Working second growth slash and longleaf under eight inches in diameter. 3 pp. typed, with 3-page T. Df. Pub. June 8, 1929.

33. *The return of South Carolina into production of naval stores --burned and unburned faces. 4 pp. typed, with 4-page T. Df. Pub. June 15, 1929. Printed copy attached.

34. *Regional difference in gum yield. 7pp. typed. Pub. June 22, 1929.

35. *"Summary of Papers to Date." Pub. Feb. 7, 1931. 1-page printed copy.

36. *"Generous Yields From Back Faces--Percentage of Scrape in proportion to Total Yield--High Yield of Slash as Compared with Longleaf." Pub. Feb. 14, 1931. 2-page printed copy.

37. *"Continuation of 36th Paper." Pub. 21, 1931. 2-page printed copy.

38. *Points of official interest on unraised yearlings. 4 pp. typed. Pub. Mar. 7, 1931. Printed copy attached.

39. *Relation between diameter of tree and yield of gum. 4 pp. typed, with 5 graphs. Pub. Feb. 28, 1931. Printed copy with 9 printed graphs attached.

40. *"Advantage Had by Raising Cups Yearly." Pub. Mar. 14, 1931. 1¼-page printed copy.

41. *Three years of declining prices. 7 pp. typed, with 5-page T. Df. Pub. Mar. 26, 1932. Printed copy.

42. *Small yields brought out in the course of last season's work in southern Alabama. 8 pp. typed. Pub. Apr. 2, 1932. Printed copy attached.

43. *Effect of working on growth of tree. 8 pp. typed, with 6-page T. Df. Pub. Apr. 16, 1932. Printed copy attached.

44. Working mature longleaf timber. 7 pp. typed, with 6-page T. Df. Pub. Apr. 23, 1932. Printed copy attached.

45. *Yields of various depths of chipping longleaf pine. 8-pp. typed, with 6-page T. Df. and 1 original graph. Pub. May 7, 1932. Printed copy with 7 printed graphs attached.

46. Relative yield from heavy crowned trees as against those with moderate sized crowns--relation to depth of chipping. 7 pp. typed, with 5-page T. Df. and 4 original graphs. Pub. May 21. 1932. Printed copy and 11 printed graphs attached.

n. d. Studies on the flow of gum in relation to profit in the naval stores industry--a summary of 46 articles under the same title which appeared in NAVAL STORES REVIEW from Nov. 19, 1921 to May 21, 1932. 60 pp. typed with 70 pp. CC. of the first 7 installments, 2-page printed copy of 7th installment from NAVAL STORES REVIEW, 18-page reprint of entire summary, 9 graphs, 2 pp. of data, 25 pp. of notes and data. (35)

n. d. Prospects of paper making in the South. 10 pp. typed. Pub. in LUMBER TRADE JOURNAL, Mar. 1, 1925. (36)

n. d. The forest and the paper industry. 8 pp. typed with 8-page T. Df. and single-page letter from H. E. Weston to Cary. Pub. in PAPER INDUSTRY, Apr. 1936. Reprint attached. (37)

n. d. Paper for next year. 6 notebooks, 4 x 7, of notes and data. (38)

1922. Descriptions, discussion, and yield data covering certain plots where tests on the flow of gum are being conducted, by Cary and E. Gerry in cooperation with private timber owners. 190 pp. CC. in paper-bound volume with photographs of the macroscopic and microscopic structure of the wood. (39)

1923. Tests on height of chipping, conducted at Osceola Nat'l Forest, Lake City, Fla., by Cary and E. Gerry. 17 pp. CC. (40)

1924. Feb. Southern timber resources in relation to paper-making. Address to American Paper & Pulp Assn. 14 pp. typed. Pub. in PAPER TRADE JOURNAL, May 8, 1924. Reprint attached. (41)

1924. Mar. 6. Findings in study of turpentined timber of the Alger-Sullivan Lbr. Co., Pensacola, Fla., by Cary, Long, and Jones. 4 pp. typed. (42)

1925. The naval stores industry of the south. 5 pp. typed. Pub. in THE CYPRESS KNEE (Forestry club paper, Georgia State College of Forestry), and in NAVAL STORES REVIEW, Aug. 21, 1926. (43)

1925. Notes on costs of turpentining operations. 15 pp. T. and A. with 8 letters attached. (44)

1926. June 28. Progress of naval stores industry. Extract from SERVICE BULLETIN. 3 pp. CC. (45)

1929. Feb. 20-22. Observations on naval stores industry. Address at conference of Pine Institute of America, Pensacola, Fla. 3 pp. typed with printed copy of Pine Institute of America PROCEEDINGS attached. (46)

1931. Feb. 2. Notes on methods of observing naval stores operations. 5 pp. typed. (47)

1932. Feb. 25. Instructions for carrying out a gum yield test. Memorandum for supervisor and Mr. Busch. 2 pp. CC. (48)

1932. Mar. 15. Damage due to drought. Memorandum for files. 2 pp. typed. (49)

1934. Jan. 28. To C. G. Smith, forest supervisor, Choctawatchee Nat'l Forest, Pensacola, Fla. Letter on method of streaking. T. L. S. 2 pp. (50)

"Dr. Cary's Views on Russian Naval Situation." NAVAL STORES REVIEW, Dec. 22, 1934. 1-page printed copy, with 1-page printed article, "Production of Naval Stores from Russian Pine Trees Very Small Compared with American Trees," by H. Reichert, in NAVAL STORES REVIEW, attached. n.d. (51)

"On Management of Turpentine Forests." Summary of series of 14 papers appearing in same periodical 1930-1933. NAVAL STORES REVIEW, May to July 1933. 14-page reprint of last 7 papers. (52)

"Naval Stores Men Who are Protecting the Great Naval Stores Industry." Extract from accomplishments in practical forestry by Cary in THE LUMBER WORLD REVIEW, Nov. 10, 1921. NAVAL STORES REVIEW, Feb. 4, 1922. 2-page printed copy. (53)

"My Trip to France [in 1925]." A series of 6 articles on turpentine and timber growing in the Landes district of France: (54)

1. "Backgrounds--General Features of the Pine District of France."
2. "History--The Most Desolate Changed into the Most Prosperous District of France."
3. "On the Forest--Its Rate of Growth, Ownership, etc."
4. "Methods of Operating for Naval Stores--Statistics."
5. "Management of Woods for the Production of Both Gum and Timber."
6. "Just What Can We Adopt from the French?"

NAVAL STORES REVIEW, n. d. 26-page reprint with printed copies containing the first, fourth, fifth, and sixth articles.

"Wonderful Probabilities in the Growing of Pine Trees in Southern States." Extract from Cary's address at the Get-together meeting of the Pine Institute of America at Jacksonville, Fla., 1927. NAVAL STORES REVIEW, Apr. 2, 1927. 2-page printed copy with note attached. (55)

"Wood Pulp and Paper Possibilities in Georgia." NAVAL STORES REVIEW, July 7, 1928. 2-page printed copy. (56)

Forest Management

1913. Dec. 27. Stumpage and lumber. 10 pp. A. D. (57)

1919. Nov. 26. To U. C. Durham, Hayner, Ga. Letter on stand and growth on lands of addressee. 11 pp. CC, with 1 blueprint map, 1 blueprint graph, and 17 pp. of notes attached. (58)

1921. Dec. 22. To Alger-Sullivan Lumber Co., Century, Fla. Letter making report on property survey of addressee. 23 pp. CC, with 1 graph and 1 map of addressee's lands attached. (59)

1922. Feb. 10. To Allison Lumber Co., Bellamy, Ala. Letter reporting on survey of land for addressee. 22 pp. CC. (60)

1922. June 16. Visit to Kaul Lumber Co. operations, Alabama. 4 pp. CC. (61)

1923. Mar. 2. Notes for Mr. Walker. 9 pp. CC. (62)

1923. Mar. 22. To Stout Lumber Co., Thornton, Ark. Letter on rate of growth of timber of addressee. 9 pp. CC. (63)

1923. July 2. To Stephens Lumber Co., Jacksonville, Fla. 9 pp. typed. (64)

1924. Apr. 1. To Southern Ry. Co., Washington, D. C. 9 pp. typed. (65)

1924. Apr. 15. To Carolina Fibre Co., Hartsville, S. C. Letter making property report. 15 pp. CC, with 1 graph attached. (66)

1928. Mar. On the Pine Harbor property. 12 pp. CC, with 1 graph attached. (67)

1930. May 28. Farm, forest, and factory. Paper read before the Georgia Commercial Forestry Congress at Savannah, Ga. 11 pp. typed. (68)

1931. Jan. 6. Timber surveys, Osceola Nat'l Forest, Lake City, Fla. Memorandum for E. W. Hadley, forest supervisor. 2 pp. typed. (69)

1931. Apr. 7. To Grant Van Sant, Green Cove Springs, Fla. 2 pp. typed. (70)

1934. May 31. To V. G. Phillips, Newport, Fla. Letter making report on land belonging to addressee. 4 pp. CC. (71)

Forest Economics

n. d. Memorandum on Copeland Report. 6 pp. CC. (72)

n. d. The forest problem of the United States. 5 pp. CC. (73)

n. d. Private Land Policy. 6 pp. CC. (74)

1915. June 24. To R. B. Goodman, Goodman, Wis. Letter on foreign lumber production. 6 pp. CC. (75)

1919. Jan. 27. Private forestry, a program. Memorandum written at request of Mr. Zon. 5 pp. typed. (76)

1922. June 7. Forest needs and opportunities of South Georgia. Paper read before the Georgia Forestry Assn. at Macon. 17 pp. typed. Pub. in SOUTHERN LUMBER JOURNAL, July 15, 1922. Pub. in NAVAL STORES REVIEW, June 24, 1922, under the title, "Timber Raising as an Industry for Naval Stores and Lumber." Printed copy of latter attached. (77)

1927. Dec. 29 and Mar. 14, 1928. To R. D. Forbes, University of Pennsylvania, Philadelphia. Letters containing data on Southern pine regions. 3 and 2 pp. CC, respectively. (78)

1928. Jan. 10. To John Watzek, Chicago. Letter on government versus private ownership. 8 pp. CC. (79)

1934. A national plan for American forestry. A digest by the same title of the letters of transmittal to the senate by the United States Forestry Service. 10 pp. CC. Pub. in NAVAL STORES REVIEW, 1934. (80)

1934. Mar. 24. To D. T. Mason, Portland Ore. Letter regarding a forest code. 2 pp. CC. (81)

"Some Practical Aspects of Forest Conservation." AMERICAN LUMBERMAN, n. d. 1-page reprint. (82)

"A Defense of Private Forest Ownership." JOURNAL OF FORESTRY, XXXIII, No. 12 (Dec., 1935). 4-page reprint. (83)

General

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II. MATERIALS BY OTHERS

General

n. d. The Forest policy of France: The control of sand dunes and mountain torrents. By W. B. Greeley. 18 pp. CC. (84)

n. d. Recent work of the Pine Institute of France: advances in chemistry, statistics, naval stores methods, and yields. 6 pp. typed. (85)

1933. Nov. 14. Specifications for thinning project, with memorandum for H. B. Goodbread, Osceola Nat'l Forest, Lake City, Fla., 6 pp. typed and mimeo. (86)

1933. Nov. 14. Project specifications for thinning project at Osceola Nat'l Forest, Lake City, Fla., by E. W. Hadley, forester. 2 pp. typed. (87)

1934. Dec. 10. Forest lands and private ownership. Report of meeting of supervisors of National Forests, Atlanta, Ga., 3 pp. A. D., with 2-page A. L. by Cary to E. F. Gates, Dec. 23, 1935. (87a)

"Direction Generale des Eaux et Forets." Oct. 12, 1923. 13 pp. mimeo. in Eng. (88)

"Minutes of Staff Meeting." Southern Forests Experiment Station, Oct. 9, 1935. 6 pp. mimeo. (89)

"Regional Map of Florida From 10th Census." n. d. Printed, 13 x 14. (90)

"Sectional Map of Florida." Nov., 1917. Printed, 3 x 4. (91)

"Statistics of the Maritime Pine in Southwest France." May, 1921. 9 pp. mimeo. in French with 11-page typed tr. (92)

Forest Botany

n. d. Silviculture of North American trees: points to study for each species. 3 pp. typed. (93)

n. d. Characteristics of longleaf pine. 5 pp. typed. (94)

n. d. Characteristics of shortleaf pine. 5 pp. typed. (95)

n. d. Characteristics of eastern pine. 4 pp. typed. (96)

n. d. Characteristics of Norway and jack pine. 3 pp. typed. (97)

n. d. Characteristics of loblolly pine. 4 pp. typed. (98)

n. d. Characteristics of slash pine. 4 pp. typed. (99)

n. d. Characteristics of yellow poplar. 4 pp. typed. (100)

n. d. Characteristics of red gum. 1 p. typed. (101)

n. d. Characteristics of eastern spruces. 5 pp. typed. (102)

n. d. Characteristics of eastern spruces. 4 pp. typed. (103)

n. d. Characteristics of tupelo cypress. 3 pp. typed. (104)

n. d. Characteristics of cottonwood. 3 pp. typed. (105)

n. d. Characteristics of southern white cedar. 2 pp. typed. (106)

n. d. Characteristics of balsam fir. 5 pp. typed. (107)

n. d. Charactersitics of eastern hemlock. 3 pp. typed. (108)

n. d. Characteristics of oaks. 5 pp. typed. (109)

n. d. Characteristics of paper birch and aspen. 5 pp. typed. (110)

n. d. Characteristics of ashes. 6 pp. typed. (111)

n. d. Silvical characteristics of northern hardwoods--beech, birch, maple, basswood. 6 pp. typed. (112)

n. d. The briar root and its substitute. 1 p. typed. (113)

1921. Oct. 21. Forest soils in Perry areas: relation of growth to soils, by J. O. Veitch. 3 pp. A. D. (114)

1925. July 6. Basis of real estate taxes in France, by C. L. Jones, American Commercial Attache. 4 pp. CC. (115)

1926. Feb. Another word about wood fertilizer, by W. R. Mattoon, forest service. 1 p. CC. (116)

"Articles on French Forestry Code." Mar. 26, 1924. 4 pp. mimeo. (117)

"Development in France." Notes on French forestry taken by Cary from PALLUS' BULLETIN, Dec., 1928. 2 pp. A. D. (118)

"Discussion of Ecology of Southern Pines," by W. S. Cooper and P. C. Wakeley, Feb. 6, 1932. 9 pp. mimeo. (119)

Silviculture

1922. May 19. The life of a pine tree as read from a longitudinally bisected trunk, by Forrest Shreve. 2 pp. typed. Pub. in SCIENCE, LV, No. 1429 (May 19, 1922). (120)

1927. Mar. 16. From E. N. Munns, chief, office of Forest Experiment Stations. Letter on basal area comparison of longleaf and slash pines. 4 pp. T. L. S. (121)

1928. Feb. 9. To J. F. Wynn from E. L. Demmon. Letter concerning weeds in nursery. 2 pp. T. L. S. (122)

1928. Apr. 12. From R. C. Hawley, supervisor, Osceola Nat'l Forest, Lake City, Fla. Letter concerning thinning. 3 pp. T. L. S. (123)

1929. Sept. 10. Working plan for experimental thinnings in second growth slash and longleaf pine, by F. I. Righter. 51 pp. CC. (124)

1933. Mar. 22. To the President of the U. S. from M. J. Roess, Pres. Florida Forestry Assn. Letter concerning reforestation by CCC. 2 pp. CC. (125)

1933. Mar. 24. To J. C. Proctor from P. V. Siggers. Letter concerning fungus disease on pine. 1 p. T. L. S. (126)

1935. Dec. 11. To Cary from Ben May. Letter concerning difference in growth of pines in grass and on cleared land. 2 pp. T. L. S. (127)

1936. Mar. 24. To Cary from V. L. Harper, silviculturalist. Letter concerning germination of seeds under dense stands. 1 p. T. L. S. (128)

"A Bibliography on Artificial Reforestation." 85 pp. mimeo. n. d. (129)

"Controlling the Proportion of Summerwood in Longleaf Pine," by B. H. Paul and R. O. Marts. JOURNAL OF FORESTRY, XXIX (1933), 5. 12-page reprint. (130)

"Effect of Frequent Fires on the Chemical Composition of Forest Soils in the Longleaf Pine Region," by Frank Heyward and R. M. Barnette. University of Florida Agricultural Experiment Station BULLETIN, No. 265, (Mar., 1934). 39 pp. pr. pamphlet. (131)

"Equipment and Material used in French Forestry." 8 circulars advertising saws, sawmills, conveyers, etc. n. d. (132)

"An Example of Improved Thinning at Thirty-Five Cents per Acre." SOUTHERN FORESTRY NOTES, New Orleans Station, No. 3 (Nov., 1933). (133)

"The Identification of Soils of the Southern Coastal Plain," by G. B. Shivery, junior forester, Southern Experiment Station. Feb. 1, 1926. 29-page mimeo. pamphlet. (134)

"Le Pin Maritime dans de Sud-Quest de la France," concerning the economics of maritime pines in southwest France. By Pierre Buffault. 36-page bulletin, 1927. (135)

"Why the Pine Seed Tree Act Should be Passed," by H. E. Hardtner. May 26, 1920. 2 pp. mimeo. (136)

"Practical Reforestation in Louisiana," by B. A. Johnson and H. H. Chapman. LUMBER WORLD REVIEW, Apr. 25, 1927. 10-page reprint. (137)

"Reforestation," by W. W. Cox, Lyman, Mass. 7-page booklet. n. d. (138)

"Regles Generales de Culture et de Gemmage dans les Forets de pin Maritime." Regeneration and silvicultural operations in France. 5 pp. mimeo. n. d. (139)

"The Root System of Longleaf Pine on the Deep Sands of Western Florida," by Frank Heyward. ECOLOGY, XIV, No. 2 (Apr., 1933). 12-page reprint. (140)

"Only a Sapling," concerning planting cut-over lands with sapling, by H. E. Hardtner. 1 p. mimeo. n. d. (141)

"The Seed Bed." 1 p. mimeo. n. d. (142)

"Selective Cutting in Hardwood and Hemlock." Foresters' report, Goodman Lumber Co., May, 1934. 12 pp. mimeo, with comparative graphs of timber stands. (143)

On Soils. Notes taken by Cary from BOWMAN'S FOREST PHYSIOGRAPHY (pp. 27-94). 3 pp. A. D. n. d. (144)

Soil Surveys Map. Soil regions of the U. S. Printed, 2 x 4. n. d. (145)

" A Study of Forest Depletion Charges," by J. E. Rothery, of the International Paper Co., Woodlands Section, Canadian Pulp and Paper Association, 7-page reprint. n. d. (146)

Forest Protection

n. d. Georgia-Florida fire weather service. 1 p. CC. (147)

n. d. Analysis of fire damage on a survey of North Florida by the Lake City office, Forest Service. 1 p. CC. (148)

n. d. Protection--Fire. Examination of a burned-over area of longleaf pine at Bogalusa, La. New Orleans Experiment Station, Forestry Service. 2 pp. CC. (149)

1926. June 5. From A. R. Israel, Southern Pine Assn. Letter gives list of 32 firms cooperating in forest fire protection. 3 pp. T. L. S. (150)

1927. June 30. Report of operations of the forest department for the year ended, June 30, 1927. 1 p. CC. (151)

1929. July 15. The Ips engraver beetle, by R. A. St. George. 3 pp. CC. Pub. in FOREST ENTOMOLOGY BRIEF, No. 67 (July 15, 1929). (152)

1932. Feb. 12. Some further relations of fire to longleaf pines, by H. H. Chapman. 5 pp. mimeo., with 4-page CC of letter to Chapman from Cary. (153)

1932. Dec. 1. Summary of fire line construction. Record of cost. Lake City office, Osceola Nat'l Forest, Lake City, Fla. 16 pp. CC. (154)

1934. Apr. 15. To Cary from Waynesville Naval Stores Co. Letter regarding loss due to fire damage in Wayne County, Ga. 1 p. T. L. S. (155)

1934. May. Fire protection in turpentine woods, by J. A. Hall. May, 1934. 11 pp. typed, with 1-page T. L. S. to Cary from Hall attached. (156)

"Conference on Enforcing Spark Arrester Law." LUMBER TRADE JOURNAL, Apr. 1, 1919. 4-page reprint. (157)

"Federal Policy Relating to Controlled Burning in Cooperative Fire Protection in the Longleaf Region," by R. Y. Steuart, May 6, 1932. 6-page mimeo. pamphlet. (158)

"Fire in Longleaf Pine Forests," by W. G. Wahlenburg, Southern Forest Experiment Station. Occasional Paper, No. 40 (Jan. 9, 1935). 5 pp. (159)

"Fire in the Southern Pine Forest," by E. L. Demmon. May 21, 1932. 6 pp. mimeo. (161)

"The Fire Weather Service for the Southern Appalachian Region," by L. T. Pierce, 4 pp. mimeo., with 6 letters relative to the subject attached. (161)

"The Forest that Fire Made," by S. W. Greene. AMERICAN FORESTS, Oct., 1931. 2-page reprint. (162)

"Individual 3-Year Fire Control Demonstration." Cooperative Agreement between Forest Service and landowner. 4-page form. (163)

"Insects that Attack Southern Pines," by F. C. Craighead, Bureau of Entomology, U. S. Dept. of Agriculture, Forest Service. 11 pp. mimeo. (164)

"Septoria Aciola and the Brown-Spot Disease of Pine Needles," by G. G. Hedgcock. PHYTOPATHOLOGY, XIX, No. 11 (Nov., 1929). 7-page reprint. (165)

"The Southern Pine Sawyer," by J. A. Beal. FOREST ENTOMOLOGY BRIEF, No. 66 (Nov. 17, 1928). 2 pp. mimeo. (166)

"Standard Instructions for the Determination of Fire Damages," by W. C. Barnes. May 15, 1926. 18 pp. mimeo., with 2-page mimeo. letter from Barnes attached. (167)

"White Pine Blister Rust," by C. L. Peck, 1935. 14-page pamphlet. (168)

Forest Utilization and Lumbering

n. d. Forestry and the lumber business, by J. E. Rhodes. 22 pp. CC. (169)

n. d. Evolution in the lumber industry, or what follows the lumber age, by R. J. Reynolds. 16 pp. CC, with 3 pp. A. Ms. attached. (170)

n. d. Woods used in the manufacturing of pipes. 2 pp. typed. (171)

1924. Nov. To Cary from Kaul Lumber Co., Alabama. Letter giving the effect of turpentining on lumber grades. 6 pp. T. L. S. (172)

"The Attitude of the Lumberman Towards Forestry," by J. E. Rhodes, 1911. 8-page pamphlet. (173)

"Conservation of Pole Timber," by W. F. Bancker. ELECTRICAL WORLD, Nov. 28, 1925. 1-page reprint. (174)

"Cost of Logging Large and Small Timber," by W. W. Ashe. FORESTRY QUARTERLY, Sept., 1916. 12-page reprint. (175)

"Extracts from American Telephone and Telegraph Specifications, No. 4429." 5 pp. mimeo. (176)

"Fifty Years in the Southern Pine Industry," by James Boyd. SOUTHERN LUMBERMAN, Pt. I, CXLIV, No. 1817 (Dec. 5, 1931), 59-67; Pt. II, CXLV, No. 1818 (Jan. 1, 1932) 23-31. 61 pp. mimeo. (177)

"Looking Ahead from Behind," by W. Compton. 46-page pamphlet printed by the Nat'l Lumber Mfgs. Assn., Apr. 29, 1927. (178)

"The Lumber Industry at the Cross-Roads." 27-page pamphlet printed by the Nat'l Lumber Mfgs. Assn., Apr. 23, 1931. (179)

"The Lumber Industry is not Defeated Unless it Quits." 23-page pamphlet printed by the Nat'l Lumber Mfgs. Assn., June 3, 1932. (180)

"The Lumber Industry is at the Front." 24-page pamphlet printed by the Nat'l Lumber Mfgs. Assn., June 30, 1933. (181)

"Lumber Prices and the Law--Forest Fires and Taxation--The Tariff Issue," by J. E. Rhodes. 20-page pamphlet, Jan. 16, 1909. (182)

"The Need for Understanding," by W. Compton. JOURNAL OF FORESTRY, XVIII, No. 3 (Mar., 1920). 5-page reprint. (183)

"National Problems Affecting Lumbermen," by J. E. Rhodes. 10-page pamphlet printed by the Nat'l Lumber Mfgs. Assn., Aug. 19, 1909. (184)

"Our Future Pole Supply," by W. F. Bancker, G. P. A., Western Electric Co. PURCHASING AGENT, Sept., 1925. 3-page reprint. (185)

The Price of Lumber," by R. B. Goodman. 30-page pamphlet, 1921. (186)

"The Price Problem in the Lumber Industry," by W. Compton. AMERICAN ECONOMIC REVIEW, VII, No. 3 (1917). 15-page reprint. (187)

"Relative Cost of Logging and Milling Timber of Various Sizes," data collected by the Dept. of Conservation. 10 pp. mimeo. tables, n. d. (188)

"Specifications for Untreated Yellow Pine Poles," by the Western Union Telegraph Co., Engineering Dept., Specifications No. 1229-A. 3 pp. mimeo., Nov. 15, 1927. (189)

"What America's Leading Foresters Say About the Lumber Tariff," by Gifford Pinchot, Dr. C. E. Schenck, Gen. C. C. Andrews, E. M. Griffith, and Prof. H. S. Graves. An article by each. 7-page pamphlet. n. d. (190)

"Wood-Using Plants in the South," 1 p. n. d. (191)

Forest Technology

n. d. Production of Naval Stores. Operating costs of Consolidated Naval Stores Co. from 1914 to 1919, by Ivy of that company. 6 pp. typed. (192)

n. d. Costs and returns of turpentine operations in Florida Osceola Nat'l Forest , Lake City, by Hill and McKee. 4 pp. A. D. (193)

n. d. Brief description of government-owned maritime forest. 2 pp. typed. (194)

n. d. From H. Adams to J. H. Eddy, manager, Kaul Lumber Co. Letter showing comparative results of chipping three crops with "O" no. 1 hacks. 1 p. T. L. S. (195)

n. d. Comparison of French and American methods of turpentining in Florida Nat'l Forests from 1915 to 1920, by E. R. McKee, ranger. 7 pp. A. D. S. (196)

n. d. Turpentine production for the year declined. 2 pp. typed. (197)

n. d. Memorandum for Cary's file, concerning Clines' patented hack, turpentine lost by evaporation, and recovering turpentine from sawmill waste, by H. S. Betts. 3 pp. T. D. S. (198)

n. d. Pulpwood operations in the Gulf Region. Cary's notes on an article published in 1932 by M. S. Kohler. 6 pp. A. D. (199)

1909. Report of the investigation on the naval stores industry and statistics on the production of turpentine and rosin, by Asa L. Brower and J. O. LaFontisse, U. S. Dept. of Agriculture, Forest Service, Forest Products Laboratory, Madison, Wis. 70 pp. CC. (200)

1910. To factors and operators, by A. Sessoms. Bonifay, Fla. 6 pp. T. L. S. (201)

1918. Aug. 30. The Southern Paper Industry, by David Luke. 3 pp. typed, with 1-page CC of letter to Forest Products Laboratory by Cary, July 25, 1918. (202)

1920. Feb. 18. Turpentining Douglas Fir, by W. D. Brush. 3 pp. A. D. (203)

1921. Apr. Estimated costs of production, marketing, etc., of naval stores. 7 pp. typed. (204)

1922. June 5. Notes on glue for sizing turpentine barrels, by A. V. Wood, Brunswick, Ga. 2 pp. CC. (205)

1922. June 22. Microscopic studies of the effects on the wood structure of different methods of turpentining, by E. Gerry, Forest Products Laboratory, Madison, Wis. 2 pp. A. D. with 2 blueprint graphs attached. (206)

1922. Dec. 29. Recent observations on the effect of turpentining on the structure of second-growth slash and longleaf pines. Paper read at the meeting of the Botanical Society of America in Boston, by E. Gerry of Forest Products Laboratory, Madison, Wis. 25 pp. typed, with 11 pp. T. D. for pub. in JOURNAL OF FORESTRY, XXI, No. 3 (1923). Reprint attached. Pub. in U. S. Dept. of Agriculture, BULLETIN, No. 1064, under title, "Oleoresin Production." (207)

1924. The division of cost of producing naval stores. 3 pp. typed. (208)

1924. June. Studies of oleoresin production, by E. Gerry, Forest Products Laboratory, Madison, Wis. 11 pp. CC. (209)

1924. July 30. Production and trade in naval stores in France, by J. F. Butler. 23 pp. CC. (210)

1924. Dec. 20. The development of pulp and paper making in the South, by John D. Rue. 25 pp. CC. Pub. in SOUTHERN LUMBERMAN. Reprint attached. (211)

1926. Oct. 15. A proposition to manufacture chemical fibre and strong wrapping paper from southern pine stumps and light wood, by J. H. Wallace & Co., engineers for Pine Waste Products, Inc. 11 pp. CC. (212)

1927. Jan. 17. Memorandum and features of the naval stores work. A brief of Wyman's paper of 1927. 3 pp. CC by Cary. (213)

1928. Dec. A study of externally matched southern pines which produce widely different yields of oleoresin. Abstract of paper presented before the American Society of Plant Physiologists at the New York meeting, by E. Gerry, Forest Products Laboratory, Madison, Wis. 3 pp. CC. (214)

1929. Notes and costs of producing naval stores in Hamilton County, Florida, by Demmons. 8 pp. A. D. by Cary. (215)

1929. Feb. Forestry a business, by C. W. Boyce, secretary, American Paper & Pulp Assn. 11 pp. CC, with 3-page CC letter to Boyce, from Cary, Mar. 25, 1929, attached. (216)

1930. Aug. Effect of growth rate on pulp yields. From Forest Products Laboratory Record. 1 p. typed. (217)

1930. Nov. Sulphite pulps from slash pine. From Forest Products Laboratory Report. 1 p. typed. (218)

1932. Apr. Tests on types of streaks by Wyman. Report of the Southern Forest Experiment Station for April. 2 pp. typed. [Page 3 and on are missing.] (219)

1932. May. Cost of operating pines of different sizes for pulpwood, from Southern Forest Experiment Station, New Orleans, La. 3 pp. CC. (220)

1932. Sept. Monthly report at Starke, Fla. 1 p. typed. (221)

1932. Nov. Effect of the 1931-32 drought, by L. Wyman. 7 pp. typed. (222)

1933. Jan. 20. Memorandum for Dr. Cary on drought specimens collected in Dec., 1932. 2 pp. typed, with 1-page note attached. (223)

1933. June 30. Yields compared with width of faces, by L. Wyman. 2 pp. CC, with 1-page note by Cary attached. (224)

1933. Oct. 20. To Mr. Holtzman from several naval stores companies. The joint letter relates to the proposed marketing agreement between the Secretary of Agriculture and the American Turpentine Farmers Assn. 7 pp. CC. (225)

1933. Oct. 20. Commercial reports on naval stores factors. 1 p. typed. (226)

1934. Dec. 4. To Cary from E. W. Hadley, forest code examiner (T. L. S. 2pp.) with reference to brief of recommendations for additions to the conservation section (Art. VII) and other sections affected by and related to the "Proposed Marketing Agreement for Gum Turpentine and Gum Rosin Processors," being document No. NA-250, L-28, of Nov. 13, 1934. Submitted by the Forest Service, U. S. Dept. of Agriculture. 4 pp. CC. (227)

"Abstracts from the Hale Report Containing Particular Information Pertaining to the Southern States," compiled by Southern Forest Experiment Station, New Orleans, La., Sept., 1935. 16 pp. mimeo. (228)

"A Boilerless Kiln for Portable Mills," by C. J. Tilford. SOUTHERN LUMBERMAN, Nov. 15, 1931. 2-page reprint. (229)

"The Cellulose Age Dawns in the South," by G. M. Rommel. MANUFACTURERS RECORD, Nov., 1930. 2-page reprint. (230)

"The Chemical Constitution of Soda and Sulphate Pulps from Coniferous Woods and their Bleaching Qualities," by S. W. Wells, Forest Products Laboratory, Madison, Wis. JOURNAL OF INDUSTRIAL AND ENGINEERING CHEMISTRY, XIII (Oct., 1921), 10, 936. 8-page reprint. (231)

"Colonne: A Distillation Fractionnee," by M. G. Dupont. 6-page pamphlet. (232)

"Effects of Boxing, or 'Bleeding'," by Charles Mohr. Pub. in U. S. Dept. of Agriculture, BULLETIN, No. 13, (1898), p. 21, under title, "Timber Pines of the Southern United States," 2 pp. CC. (233)

"Evaluation of Second-Growth Longleaf Pine--Pulpwood from Trees of Varying Rate of Growth," by M. W. Bray and B. H. Paul. SOUTHERN LUMBERMAN, Dec. 15, 1930. 7-page reprint. (234)

"Fire in the Turpentine Orchard," by H. L. Baker. Paper read at get-together conference of the Pine Institute of America in Pensacola, Feb., 1929, and printed by that organization. 4 pp. mimeo. (235)

"Further Development of the Technique of Turpentine Pines by Petraschek. WIENER ALLEGEMEINE FORST-UND JAGD-ZEITUNG, Wockenblatt, Nov. 5, 1920, pages 279-281, 285-287, 291-292. Tr. by E. Gerry and M. C. Jensen. 39 pp. typed. (236)

"Good Naval Store Practice," from Forest Service, U. S. Dept. of Agriculture. 3-page mimeo. pamphlet, July, 1927. (237)

"The Goose and the Golden Egg," by E. Gerry, Forest Products Laboratory, Madison, Wis. Pub. in SOUTHERN LUMBERMAN, Aug. 25, 1923. 4-page reprint. (238)

"Improvement in the Production of Oleoresin through Lower Chipping," by E. Gerry, Forest Products Laboratory, Madison, Wis. Pub. in TECHNICAL BULLETIN, No. 262 (1931), U. S. Dept. of Agriculture, Forest Service. 24-page pamphlet. (239)

"Many Uses for Turpentine and Rosin," by Speh. Release from Office of Information, U. S. Dept. of Agriculture, 1915. 3 pp. typed. (240)

"More Turpentine, Less Scar, Better Pine," by E. Gerry, Forest Products Laboratory, Madison, Wis. U. S. Dept. of Agriculture, Leaflet, No. 83 (1931). 4-page mimeo. (241)

"National Pulp and Paper Requirements in Relation to Forest Conservation." Letter from Secretary of Agriculture in response to Senate Resolution No. 205 (73d Cong.), May 13, 1935. 74-page pamphlet. (242)

"The Naval Stores Industry," by R. E. Benedict. n. d. 4 pp. mimeo. (243)

"Naval Stores Production in 1920-21." 1-page photostatic copy of table obtained from U. S. Dept. of Agriculture, Bureau of Chemistry, Leather and Paper Laboratory. (244)

"Naval Stores Production in the Florida Nat'l Forests," by E. R. McKee, deputy forest supervisor, May, 1923. 25 pp. mimeo. (245)

"Oleoresin Production from Longleaf Pine Defoliated by Fire," by E. Gerry. Forest Products Laboratory, Madison, Wis. Pub. in JOURNAL OF AGRICULTURAL RESEARCH, XLIII (1931), 9. 11-page reprint. (246)

"Perpetuation of the Paper Industry," by O. M. Porter, American Paper & Pulp Assn. 7-page pamphlet. (247)

"Plotted Rosin and Turpentine Prices." Graph of prices from 1882 to 1931. 6 blueprint graphs. (248)

"Pine Cellulose," by R. H. Rasch. Pub. in MANUFACTURER'S RECORD, Nov., 1934. 1½-page reprint. (249)

"Preliminary Report for the Naval Stores Commission," by W. E. Barnett, Sec., Naval Stores Commission. Aug. 23, 1924. 40 pp. mimeo. (250)

"Present and Future Trends in the Pulping of Southern Woods," by C. E. Curren, Forest Products Laboratory, Madison, Wis. Pub. in PAPER TRADE JOURNAL, Jan. 16, 1930, and in PAPER INDUSTRY, XI (1930), 10. 5-page reprint from former and 6-page reprint from latter. (251)

"Production and Value of Turpentine and Rosin by States, in 1909 and 1914." Compiled from U. S. Census Report. 1 p. photostatic copy from unknown publication. (252)

"The Production of Crude Gum by the Pine Tree," by E. Gerry, Forest Products Laboratory, Madison, Wis. Pub. in NAVAL STORES, Savannah, Ga., 1921. 8-page reprint. (253)

"Proposed Marketing Agreement for Gum Turpentine and Gum Rosin Producers." 1933. Copy of articles of agreement between the Sec. of Agriculture and the American Turpentine Farmers Assn. 10-page mimeo. pamphlet. (254)

"Prospectus of the Turpentine and Rosin Producers' Assn." 12-page booklet, Jan. 10, 1917. (255)

"Pulpwood Costs as Affected by Regional Competition," by C. W. Boyce, Sec., American Paper & Pulp Assn. Pub. in PULP AND PAPER PROFITS, VI (1929), 11. 6-page reprint. (256)

"Quantity and Value of Crude Turpentine Distilled." 1-page photostatic copy, 1905, from unknown publication. n. d. (257)

"Regional Pulpwood Costs--Introduction to Proposed Woodlands Section Study." 3 pp. mimeo. (258)

"Report on Survey of Conditions of Timber in a Portion of the Naval Store Belt." Circular, U. S. Forestry Service, Mar. 9, 1932. 1 p. mimeo. (259)

"Les Resines et les Huiles Extraites de Bois de Pin Maritime," by G. Dupont and J. Michaud. Pub. in CHEMIE et INDUSTRIE, Jan., 1923. 12-page imprint. (260)

"Results of Chipping--Influence of Fertilizer on Gum Flow--Thinning--Relation between Fire and Gum Production." Annual report of the Starke (Florida) branch for the year 1929-30. 8 pp. CC. (261)

"Sainte Ame Industrielle de Resines," by P. Barreau. Pictures of the French naval stores industry. 20-page booklet. (262)

"Southern Forests and the Pulp and Paper Industry," by John D. Rue. Pub. in PAPER TRADE JOURNAL, July 24, 1924. 2-page reprint. (263)

"Statement in Behalf of the United States Newsprint Industry," by R. S. Kellogg, Sec., Assn. of Newsprint Mfgrs. of the U. S. Mar. 12, 1935. 8 pp. mimeo. (264)

"Statistique du Pin Maritime dans le Sud-Quest de la France," by M. de Lapasse, Conservateur des Eauz et Foresta, a Bordeaux France. 10 pp. mimeo. (In French.) (265)

"The Story of Pine Waste." Pub. by Pine Waste Products, Inc., New York. Tables, photostatic copies of graphs concerning wood pulp, extracting naval stores from wood pulp, comparison of different sizes of wood pulp for paper and efficiency of extraction of rosin. 106 pp. mimeo., bound. (266)

"Suggested type of Turpentine Still and Other Data of Value for Naval Store Producers," by G. P. Shingler. 3 pp. mimeo. (267)

"Turpentine and Rosin Production Reported for Season of 1918, by U. S. Dept. of Agriculture, Bureau of Chemistry." 3-page mimeo. circular. (268)

"Turpentining Experiment--Modifications of the French System," by Bingham, Pensacola, Fla., 1928. 2 pp. mimeo. (269)

"What is the Future of the Pulp and Paper Industry in the South?" by C. E. Curran. Pub. in SOUTHERN LUMBERMAN, Dec. 15, 1931. 3-page reprint. (270)

"White Paper from Southern Pines," by C. E. Curran and M. W. Bray. Pub. in two parts, in PAPER TRADE JOURNAL:

1. "Pulping Loblolly Pine for Strong, Easy-Bleaching Sulphate Pulp," Jan. 1, 1931.
2. "A Modified Bleaching Process for Easy-Bleaching Sulphate Pulps," Jan. 8, 1931.

6-page and 8-page reprints respectively. (271)

"Whither Pulpwood," by C. W. Boyce, Sec., American Paper and Pulp Assn. Paper read at annual meeting of woodlands section, Canadian Pulp and Paper Assn., Jan. 29, 1931. 5-page printed copy. (272)

Forest Management

1927. Nov. 16. Difficulties met in working for a sustained yield, by J. W. Watzek, Jr. Paper read before the U. S. Chamber of Commerce-Forestry Conference, Chicago. 10 pp. CC. (273)

1931. May 8. Growth of stands and yields. Memorandum to Mr. Morrell from W. R. Mattoon concerning comparative yields of slash, shortleaf, loblolly, and longleaf pines. 2 pp. T. D. S. (274)

1935. Apr. 17. Possibilities of a sustained yield operation for the Alger-Sullivan Lumber Co., Century, Fla., by A. E. Wackerman, division forester, Southern Pine Assn. 12 pp. CC. (275)

"Forest Regions of the U. S." 2 pp. printed. n. d. (276)

"Texas and her Timber," by E. O. Siecke. Pub. in NATURE MAGAZINE, Dec., 1930. 4-page reprint. (277)

"Timber Surveys." Report by Georgia Forest Service, Savannah, 1930. 3 pp. mimeo., with letter to Cary from G. M. Rommel, Industrial Commissioner, Savannah, Ga., Oct. 6, 1930, 2 pp. T. L. S. (278)

Forest Economics

n. d. Resolutions of the Western Forestry and Conservation Assn. 9 pp. typed. (279)

n. d. Some aspects of the proposed monopoly of forestry, by A. E. Wackerman. 3 pp. T. D. S. (280)

1907. Drain on the forests, by R. S. Kellogg, 1907. Notes taken by Cary. 4 pp. A. D. (281)

1907. Nov. 11. To William T. Cobb, Governor of Maine, from Theodore Roosevelt. Letter concerns conservation. 3 pp. typed copy. (282)

1918. Timber stand. Dunham's report. 2 pp. CC. (283)

1928. Mar. 14. To Austin Cary, from R. D. Forbes, University of Pennsylvania. T. L. S. 2 pp. with 6 pp. economic data on Southern pine regions. See entry 78. (284)

1932. Mar. Statement of federal policy of cooperative fire protection in the longleaf pine region, by H. J. Eberly. 13 pp. T. D. S. (285)

1934. Mar. To Austin Cary, from D. T. Mason Portland, Ore., on forest code. T. L. S. 3 pp. See entry 81. (286)

1935. Aug. 2. A federal bill to place the production of forest products and interstate commerce therein on a permanently stable basis. 14 pp. CC. (287)

1935. Aug. 19. To the President of the U. S. from the Sec. of State. Letter concerns a quota limitation on import of pulpwood, wood pulp, and newsprint. 6 pp. CC, with 3 pp. of A. Ns. by Cary attached. (288)

1935. Dec. 19. What transpired at the coast meeting of the National Lumber Mfgrs. Assn. 8 pp. typed resume, with 1 p. T. L. S. to Cary from J. B. Woods, bearing above date. (289)

"Announcement of the U. S. Timber Conservation Board. Its Consideration of the Problems and Consequences of Over Production in the Forest Industry," June 11, 1931. 29 pp. mimeo. (290)

"Average Prices of Yellow Pine Shown Graphically from 1905 to 1916." 1 blueprint graph. (291)

"Comments on Federal Forest Conservation Legislation and Action," by Wilson Compton, Feb. 12, 1935. 4-page mimeo. letter. (292)

"Conservation and Sustained Production of Forest Resources." Statement presented by Wilson Compton for the Forest Products Industries to the Forest Conservation Conference held by the Secretary of Agriculture, Oct. 12, [19 ?]. 21 pp. mimeo. (293)

"Conservation: The Form or the Substance, Which?" by Wilson Compton, Bureau of Economics, Nat'l Lumber Mfgrs. Assn., Nov. 1919. 24-page pr. pamphlet. (294)

"Economic Aspects of State Forests." Pub. by the Nat'l Lumber Mfgrs. Assn., Jan., 1920. 19-page pr. pamphlet. (295)

"The Effect of Tree Sizes on Western Yellow Pine Lumber Values and Production Costs," by W. H. Gibbons, H. M. Johnson, and R. H. Spellman. Pub. in THE TIMBERMAN, XXX, No. 12 (1929), and XXXI, Nos. 1 to 5 (1930). 16-page reprint of all installments. (296)

"Florida's Tax Delinquent Land Problem, Its Cause, Effect, and Suggested Remedy," by W. D. McCormick, Executive Sec., Florida Forestry Assn. 6 pp. mimeo. n. d. (297)

"Forest Conservation Legislation." A letter to C. C. Sheppard, Clarks, La., Jan. 6, 1935, from Wilson Compton. 3 pp. mimeo. (298)

"General Forestry Conservation Law--State of Private Forestry Investigations," by E. T. Allen. Pub. in the University of Washington Forestry Club's QUARTERLY, Apr., 1926. 6-page reprint. (299)

"The German Forest Experiment," by R. B. Goodman, Nov. 2, 1934. 3 pp. mimeo. (300)

"Government Action on Forest Conservation." Letter to L. O. Crosby, Feb. 11, 1935, from Wilson Compton. 1 p. mimeo. (301)

"Louisiana Forest Resources," by E. W. Kelly, district forester, Mar. 25, 1929. 5 pp. mimeo. (302)

"Lumber Production of the U. S. and Forest Regions, 1929 to 1934." 2 pp. photostatic copies. (303)

"Memorandum Regarding Values of Longleaf Pine Trees at Different Ages," Jan. 2, 1929. 2 pp. mimeo., with 1-page graph attached. (304)

"The Next Steps in the Forestry Program." Report of the committee on forest conservation at the annual meeting of the American Paper and Pulp Assn., Apr. 20, 1920. 8-page pr. pamphlet. (305)

"Problems of the Forest Industry." Paper read by W. B. Greenly before the U. S. Chamber of Commerce, 1932. 9-page pr. pamphlet. (306)

"Statement of Forestry. Policy adopted by the Board of Directors of the Nat'l Lumber Mfgrs. Assn., Aug. 8, 1929." 13 pp. mimeo. (307)

"Suggestions for a National Forestry Policy with the Special Reference to the Pulp and Paper Industry." Report of the committee on forest conservation at the business conference of the American Paper and Pulp Assn., Nov. 14, 1919. 8-page pr. pamphlet. (308)

"Summary of Forest Practice Rules under the Conservation Code (Art. X)," by A. B. Recknagel. Pub. in the JOURNAL OF FORESTRY, XXXIII, No. 9 (Sept., 1935). 8-page reprint. (309)

"Tables of Lumber Production by States from 1870 to 1920." 2 pp. photostatic copies. (310)

"Timber Growing a Profitable Business," by W. B. Greenly, Apr., 1925. 6 pp. mimeo. (311)

"Various Suggestions for Further Action on the Forest Conservation Program." Letter to the Federated Associations, June 8, 1935, from J. W. Watzek, Jr. 6 pp. mimeo. (312)

"When and Where Does Timber Growing Pay?" by E. A. Ziegler. Pub. in WINTER, 1931. 4-page reprint. (313)

Associated Uses of Forests

1923. May 1. Goats versus slash pine, by E. W. Hadley, Osceola Nat'l Forest, Lake City, Fla. 2 pp. T. D. S. (314)

"Permanent Pictures for Pine Lands," Dec., 1928. 3 pp. mimeo. (315)

Municipal and Recreational Forestry, Wildlife

n. d. The bobwhite quail, its habits, preservation, and increase, by H. L. Stoddard. 12 pp. mimeo., with T. L. S. by Stoddard to Cary. (316)

"Florida State Parks: Torreya State Park, Fort Clinch State Park, Gold Head Branch State Park, Highlands Hammock State Park, Myakka River State Park, and Hillsboro River State Park." 6 pp. mimeo. n. d. (317)

"Highlands Hammock State Park." Pub. in FLORIDA STATE PARK NEWS, I (1936), 1. 4-page printed copy. (318)

"Torreya State Park [Florida]," by Rebecca Phillips, Aug. 25, 1935. 3 pp. mimeo. (319)

"Urania Forest." Forest plots in the vicinity of Urania, La. 2-page printed article with 1 p. A. Ns. by Cary. n. d. (320)

III. FIELD NOTES

General

n. d. Field and reading notes on the South. 1 loose-leaf 4 x 7 notebook,* 40 pp., A. Ns. (321)

n. d. General data from service and other foresters. 40 pp. A. Ns. (322)

n. d. Field notes: Bogalusa Nat'l Forest. 40 pp. A. Ns. (323)

1918-1919. General field notes: State of Florida.
Florida, spring of 1918.
Central Florida, 1918.
South Florida, 1918.
With Veitch in West Florida [Veitch's results], 1919.
160 pp. A. Ns. (324)

1919. Oct. Field notes on Durham property, Rayner, Ga.
30 pp. A. Ns. (325)

1919-1928. General field notes: Georgia. 440 pp. A. Ns. (326)

1919-1935. General field notes: Tallahassee to Texas.
Tallahassee west to Missippi, 1921-1934.
Tallahassee west to Texas, 1935.
Louisiana to Texas, 1923.
Louisiana, 1919-1921.
Mississippi, n. d.
Arkansas, 1923-1925.
240 pp. A. Ns. (327)

1919-1936. General field notes: Jackson Lumber Co., Lockhart, Ala. 80 pp. A. Ns. (328)

1920. Field notes: Kaul Lumber Co. Land survey and general matters. 40 pp. A. Ns. (329)

1920. General field notes: Dantzler Lands, Howison, Miss.
30 pp. A. Ns. (330)

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*As this type of notebook is used throughout, only the number of pages will henceforth be given.

1920-1934. Field notes: Osceola Nat'l Forest, Lake City, Fla. 80 pp. A. Ns. (331)

1921-1936. General forestry and field notes: Alger-Sullivan Lumber Co., Century, Fla. 120 pp. A. Ns. (332)

1923-1926. General field notes: South Carolina. 105 pp. A. Ns. (333)

1924-1935. General forestry field notes: Southeastern and Eastern States. 360 pp. A. Ns. (334)

1925. General field notes: R. T. Miller Co., Brewton, Ala. 40 pp. A. Ns. (335)

1925. Field notes taken in France and French reading notes. 120 pp. A. Ns. (336)

1925-1936. Field notes: The South in general. Miscellaneous material. 1925-26 and 1935-36. 80 pp. A. Ns. (337)

1930. Oct. 25. Memorandum on forestry operations of W. W. Kurtz, Green County, Miss. 8 pp. CC. (338)

1931. Feb. 17. To E. W. Hadley, supervisor, Starke Station, from Cary. Letter concerns data on field work done during Jan., 1931, at Starke, Fla. 12 pp. C. T. L. (339)

Forest Botany

n. d. Curves of height growth for longleaf and slash pines on Alger-Sullivan Lumber Company's property in Southern Ala. 3 graphs A. D. and 1 blueprint graph. (340)

n. d. Height growth curves for shortleaf and loblolly pines at Thornton, Ark. 3 graphs A. D. (341)

n. d. Height growth curves for longleaf and slash pines Osceola Nat'l Forest, Lake City, Fla. 6 graphs A. D. and 1 blue-print graph. (342)

n. d. Height growth curves for longleaf pine on lands of Southwest Settlement & Development Co., Camden, Tex. 5 blueprint graphs. (343)

1923. Height growth curves for slash, loblolly, and longleaf pines on various locations in Georgia--Woodbine, Waynesville, and Cemetery. 23 graphs and notes A. Ds. (344)

1923-1926. Height growth curves in Berkeley County, S. C. 8 graphs A. Ds. (345)

1925. Height growth curves in Elizabeth, La. 2 graphs. A. Ds. (346)

Silviculture

n. d. Smaple plots to test growth of thinned and unthinned longleaf and slash pine on lands of Alger-Sullivan Lumber Co., Century, Fla. 35 pp. (typed, 8½ x 13, and A. D., 18 x 21) giving description of test and data. (347)

n. d. Diameter and height growth curves of longleaf and slash pine, thinned and unthinned, in Georgia and Florida, by Cary. 5 pp. and 6 graphs A. Ds. (348)

1923. Dec. 23, Mar. 6, 1925, Feb. 10, 1932. Sample plots, thinned and unthinned, at Folkston, Ga. Laid out on the land of the New Orleans Naval Stores Co., by Cary. Measured on dates shown. 10 pp. some of which are 18 x 21 and 1 graph A. Ds. (349)

1923-1933. General field notes on thinning--tests of sequence thinning, on land of Alger-Sullivan Lumber Co., Georgia. 30 pp., 4 x 7, A. Ns. (350)

1925. June. Thinning--sample areas--maritime pine, in France, by Cary. 15 pp. typed. (351)

1927. Mar. 3. Thinning test. Laid out by Cary in cooperation with Jackson Lumber Co., Lockhart, Ala. 13 pp. A. D. (352)

1927. Mar. 3. Thinning test near still of Jackson Lumber Co., DeFuniak Springs, Fla. 14 pp. typed. (353)

1928. Feb., Mar., 1932, Jan., 1935. Thinning results on 15-year-old slash pine at Harbor, Ga., by Cary. Measured on dates shown. 6 pp., 18 x 21, A. D. (354)

1929. Oct. 10. Report on the establishment of the Cogdell plots, A-1, C-2, C-3, and C-4, longleaf pine, at Cogdell, Ga., to determine the effect of heavy thinning, by F. I. Righter. 35 pp. typed with 2 blueprint maps attached. (355)

1929. Nov. 18. Thinning experiment around Starke, Fla. Slash pine test laid out by Cary, Goulden, Coulter, and Vining. 3 pp. typed and 8 pp., 18 x 21, A. D. (356)

1929. Dec. 10. Thinning experiment in Gonzalez Woodlot, Gonzalez, Escambia County, Fla. Laid out by Cary and C. H. Coulter. 5 pp. typed. (357)

1929-1930. Thinning and spacing studies: Various locations in Florida, 35 pp. 4 x 7, A. D. (358)

1929-1930. General field notes: Thinning and spacing studies. Various locations in Georgia. 35 pp. 4 x 7, A. D. (359)

1930. Summary of spacing studies, longleaf and slash pines, by Cary. 3 pp. A. D. (360)

1930. July 14. Report on the establishment of the Valdosta Plots, V-1 and V-2, to determine effect of light thinning on slash pine, by F. I. Righter. 16 pp. A. D. with 1 blueprint attached. (361)

1930. July 16. Report on the establishment of the Dupont Plots, Du-1, Du-2, and Du-3, at DuPont, Ga., to determine the effect of light and heavy French thinning on loblolly pine. 20 pp. typed with blueprint map attached. (362)

1930. Aug. 28. Working plan for the establishment of experiment on Penney Farms, Fla., on plots Py-1, Py-2, and Py-3, to determine the effect of heavy thinning in loblolly and shortleaf pine, and thinning of 24 and 28-year-old longleaf pine. 10 pp. typed and blueprint map. (363)

1930. Dec. 23. Thinned plot, longleaf pine, Brewton, Ala., laid out by Cary. 11 pp. typed. (364)

1930. Jan., Jan. 1933. Thinning studies, slash pine, by Cary. Measured on dates shown. 5 pp. 18 x 21, A. D. (365)

1930. Feb. 10., Feb. 1, 1933. Thinning data: Land of Marsh Bros. & Wilson, Stockton, Ga., by Cary. Measured on dates shown. 2 pp. 18 x 21 and 1 graph A. D. (366)

1930. Feb., Feb., 1932, Dec., 1933. Thinning data, 8 or 9-year-old slash pines on land of Robert Peagler, Manor, Ga., by Cary. Measured on dates shown. 3 pp. 18 x 21, A. D. (367)

1930. Feb., Feb., 1933. Thinning data, 18-year-old slash pine on land of S. J. Hires, Odum, Ga., by Cary. Measured on dates shown. 2 pp. 18 x 21, and 1 graph, A. D. (368)

1930-1933. Thinning data on 21-year-old slash pine on the land of J. O. Johnson, Stockton, Ga., by Cary. Measured on the dates shown. 1 p. 18 x 21, A. D. (369)

1930. Jan. 20., Jan. 1933. Thinning data, longleaf pine, on land of Gowen, Camden County, Ga., by Cary and F. Dean. Measured on dates shown. 4 pp. 18 x 21 and 2 graphs, A. D. (370)

1930. Jan. 30., Feb. 24, 1933. Detail notes on longleaf pine trees selected for study of growth in relation to surroundings, effect of thinning, etc., on land of Georgia Creasoting Co., Waverly, Ga. Measured on dates shown. 3 pp. typed. (371)

1930. Feb., Feb., 1933, Feb., 1935. Thinning data 17-year-old slash pine on lands of Hiram Sears, Pearson, Ga. Measured on dates shown. 3 pp. 18 x 21 A. D. (372)

1931. Thinning studies on Baldwin County, Ala. 6 pp. 18 x 21. A. D. (373)

1931. Apr. 15. Thinning plots in Washington Parish, Pogalusa, La., established by the Pensylvania State School of Forestry in cooperation with the Dept. of Forestry of the Great Southern Lumber Co. 14 pp. CC. (374)

1931. June 16. Results of thinning experiment on land of Southern Railway, Pregnal, S. C., laid out by Cary in 1925. Final results on date shown. 5 pp. typed. (375)

1933. Thinning results on 8-year-old slash pine, Cogdell, Ga., by Cary. Measured in year shown. 5 pp. 18 x 21, A. D. (376)

1933. Dec. 15. Observations on limb adherence and qualities in relation to spacing on slash pine plantation at Tifton, Ga., by Cary and K. S. Trowbridge. 3 pp. typed. (377)

Forest Protection

1931. Nov.-Dec. Height growth curves of trees protected from fire, compared with those on land burned over as a means of protection, by Cary. 16 graphs, A. D. (378)

1931, 1932. General field notes - drought, by Cary. 35 pp. A. D. (379)

1931-1935. General field notes - chiefly fire studies - in Baldwin County, Ala. 70 pp. 4 x 7 A. D. (380)

1931. Feb., March 1935. Effect of fire on growth of thinned longleaf pine, at Fargo, Ga. Laid out by Cary in 1931 and remeasured in 1935. 9 pp. 4 x 7 and 1 sheet 18 x 21 A. D. (381)

1931-Mar. 1935. Effect of fire on growth, thinned and unthinned longleaf pine, Osceola National Forest, Lake City, Fla. Seven plots laid out by Cary in 1931 and measured yearly until 1935. 73 pp. 4 x 7 field notes, 11 pp. 18 x 21, 9 pp. of graphs, all A. Ds., and 51 pp. typed. (382)

1932. Autumn , May, 1933. General field notes - droughts and bugs, by Cary. 70 pp. 4 x 7 A. D. (383)

1932. June-Jan. 1933. Experiment on effect of fire on growth, West Florida. Laid out by Cary in 1932 and remeasured in 1933. 8 pp. typed. (384)

1932. Dec., Feb. 1933, June 1934. Test of recovery of slash pine scorched by protective fire, 1932, Waverly, Ga. Laid out by Cary 1932, and remeasured in 1933 and 1934. 3 pp. typed. (385)

1934. May 1. Test on burned timber, Cogdell, Ga. Laid out by Cary. 2 pp. typed. (386)

Forest Technology

n. d. Effects of various depths of chipping on yields, by Cary. From various locations in Alabama. 2 pp. and 6 graphs A. Ds. (387)

n. d. Test of flow of gum, on land of L. W. Eason, Surrency, Ga. Laid out by Cary, Eason, and Nuite. 2 pp. typed and A. D. (388)

1915-1919. Results of test working on Choctawatchee Nat'l Forest, Pensacola, Fla.: Experiment with French method of working longleaf pines, by Cary. 8 pp. typed. (389)

1918-1935. General field notes from Starke (Florida) Station and surrounding district, by Cary:
General notes, 1918, 1923, 1927, 1934.
Powell test notes, 1928, 1935.
Dip and scrape record, Powell test, 1934.
210 pp. 4 x 7 A. Ds. (390)

1919. June. Observations on practice and results of turpentine operations at Cogdell, Ga., by Cary. 4 pp. typed. (391)

1921. Mar. Test of flow of gum, Waycross, Ga. Laid out by Cary on works of D. & O. Lott. 16 pp. partly A. D. and partly typed. (392)

1921. Mar. 5. Test of flow of gum, Tarver, Ga. Laid out by Cary and T. G. Culbreth. 11 pp. partly A. D. and partly typed. (393)

1921. Mar. 8. Tests of results from and effects of bleeding timber, Hayner, Ga. Laid out by Cary and U. C. Durham. 10 pp. partly A. D. and partly typed. (394)

1921-1927. Gum yield tests and records on land of Jackson Lumber Co., Lockhart, Ala., by Cary. 100 pp. 4 x 7 with 3 graphs A. Ns, and 150 pp. partly typed and partly A. Ns. (395)

1921, 1925, 1928. Tests of flow of gum on works of C. G. Stewart, Woodbine, Ga. Laid out by Cary. 34 pp. partly typed and partly A. Ns. (396)

1921-1933. Notes on bled trees, Hayner, Ga., by Cary. 2 sheets 18 x 21 of data, 12 pp. 4 x 7 A. Ns., and 11 pp. of description typed. (397)

1922. Mar. 1. Approximate demonstration of French management in turpentine woods, Tarver, Ga. Laid out by Cary. 4 pp. typed. (398)

1922. Dec. 5. Approximate demonstration of French method of working timber on land of L. C. Powell, Starke, Fla. Laid out by Cary. 3 pp. typed. (399)

1923. Cary test: Gum yield test of height of chipping in Camp Pinchot District, Florida National Forests, by Cary. 26 pp. typed. (400)

1923. May 3. Test of flow of gum at Holopaw, Fla. Experiment on depth of chipping of longleaf pine. Laid out by Cary, E. Gerry of the U. S. Forest Service and Owens of the Lake Wales Naval Stores Co. 23 pp. typed. (401)

1925. Mar. 2. Test of flow of gum, Homerville, Ga. Laid out by Cary. 23 pp. partly typed and partly A. D. (402)

1925. Mar. 19. Test of flow of gum, Atmore, Ala., to ascertain the relative yield of 1 and 2 faces and longleaf pines of small size. Laid out by Cary. 2 pp. typed. (403)

1927. Gum yield test at Homerville, Ga., by Cary. 2 pp. A. D. and 2 pp. photos. (404)

1927. Apr. 6. Test of flow of gum, Lillian, Ala., on 30-year-old second growth longleaf pine. Laid out by S. W. Porter. 9 pp. typed and 1 p. of photos. (405)

1927, 1928, 1929. Tests of yield of gum, Atmore, Ala. Results of Bryar's tests for years shown. Longleaf timber, cups raised to 5 ft. from ground, with chipping 3/4 in. deep. 20 pp. A. Ns. and 3 pp. photos. (406)

1928. Feb. 29. Test of flow of gum, at Pine Harbor, Ga. Laid out by Cary. 5 pp. typed. (407)

1929. Feb. Test of flow of gum, Muscogee, Ala., on the land of Mitchell Turpentine Co., to determine whether certain classes of faces are not worked at a loss on account of low yield. Laid out by Cary, Mitchell, and Brown. 3 pp. typed. (408)

1929. Feb. 4. Test of flow of gum at Genoa, Fla., on works of Donahue, local operator. Laid out by Cary and Malsberger. 3 pp. A. D. (409)

1929. March 8. Test of flow of gum at Capitola, Fla. A test to determine whether certain classes of trees pay for the working, and in addition the relative yield of slash and longleaf pines. Laid out by Cary, Bass, and W. T. Shelley on works of W. T. Shelley. 6 pp. typed. (410)

1929. Mar. 22. Test of gum yield at Glenville, Ga. Laid out by F. B. Merrill, on land of S. T. Kicklighter. 1 p. typed. (411)

1929. Mar. 22. Test of gum yield at Vidalia, Ga. Laid out by F. B. Merrill, Georgia Forest Service, on land of J. H. Thompson. 3 pp. partly typed and partly A. D. (412)

1929. Mar. 28. Test of flow of gum, at Baxley, Ga. Laid out by Cary and Nuite on works of Samuel Miles. 7 pp. partly typed and partly A. D. (413)

1929. Mar. 29. Test of flow of gum at Jessup, Ga. Laid out by Cary, Nuite, and Surrency on land of R. M. Milligan. 3 pp. partly typed and partly A. D. (414)

1930-1934. Test of yield of gum at Starke, Fla. Groups on Powell test for 5 years. Test of streaking. Laid out by Cary 1930. Data for period shown. 28 pp. partly typed and partly A. D. (415)

1931. General field notes, Alabama. Data on gum yield tests by Cary. 350 pp. 3 x 5 A. Ns. (416)

1931. Mar. 6. Record of gum test No. 1, at Trenton, Fla.: To compare the production of 3 groups of trees, (1) of small diameter, (2) of large diameter with one face, and (3) of large diameter with two faces. By R. E. Davis, operator. 7 pp. typed. (417)

1931. Mar. 13. Test of flow of gum at McDavid, Fla. Experiment in the depth of chipping, No. 0 hack and No. 1 hack. Laid out by Cary and G. M. Day. 4 pp. partly typed and partly A. D. (418)

1931. Mar. 14. Test of flow of gum at Pine Barren, Fla. Test on streaking. Laid out by Cary on works of T. C. Brannon. 2 pp. partly typed and partly A. D. (419)

1931. Mar. 16. Test of flow of gum of longleaf pine, based on number of streaks employed. Laid out on land of R. M. Rabun, Rabun, Ala. 4 pp. partly typed and partly A. D. (420)

1931. Mar. 17. Test of raising cups, at Dyas, Ala. Laid out, probably by Cary on land of J. D. Crosby. 7 pp. partly typed and partly A. D. (421)

1931. Mar. 19. Test of yield of gum at Muscogee, Ala., using No. 0 and No. 1½ hacks. Laid out, probably by Cary, on land of Park Turpentine Co. 4 pp. typed. (422)

1931. Mar. 19. Flow of gum at Atmore, Ala. Laid out on date shown. 2 pp. partly typed and partly A. D. (423)

1931. Mar. 19. Test of yield of gum at McKinnonville, Fla. Laid out by Cary on works of Robert Melton, Atmore, Ala. 1 p. typed. (424)

1931. Mar. 23. Test of flow of gum on young longleaf up to sawlong size, at Bay Minette, Ala. Laid out by Cary on works of J. W. McMillan. 2 pp. partly typed and partly A. D. (425)

1931. Mar. 23. Test of flow of gum on young longleaf, at Loxley, Ala. Laid out by Cary. 2 pp. partly typed and partly A. D. (426)

1931. Mar. 24. Test of flow of gum at Foley, Ala. Laid out by Cary on works of L. W. Brannon. 6 pp. partly typed and partly A. D. (427)

1931. Mar. 25. Test of flow of gum on young longleaf on burnt-over land, at Seminole, Ala. Laid out by Cary on works of Mitchell Turpentine Co. 6 pp. partly typed and partly A. D. (428)

1931. Mar. 25. Test on yield of gum in relation to depth of chipping, at Fairhope, Ala. Laid out on works of J. M. Gooden. 6 pp. partly typed and partly A. D. (429)

1931. Mar. 27. Loncala gum tests, to compare the gum production of burned and unburned longleaf pines, at Clark, Fla. Laid out by C. H. Coulter, district forester. 9 pp. typed. (430)

1931. Mar. 28. Test of yield of gum in relation to streaking on longleaf and slash pines, at Panama City. Laid out by Cary, Howell, and Whittington on works of L. H. Howell. 5 pp. typed. (431)

1931. Mar. 30. Test of gum on longleaf timber using cups and aprons, at Atmore, Ala. Laid out by R. R. Long of Alger-Sullivan Lumber Co. 7pp. partly typed and partly A. D. (432)

1931. Apr. 10. Test of yield of gum at Sanksville, St. Johns County, Fla. Laid out by Cary and Malpas on works of C. H. Arnold. 6 pp. typed. (433)

Adi
Ala
3
3
4

Alg
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INDEX

Roman numerals refer to pages; Arabic numbers to entries.

Inven

Invent

A List

Guide

Check

Invent

PUBLICATIONS OF THE FLORIDA
HISTORICAL RECORDS SURVEY PROJECT

Inventory of the County Archives of Florida:
- No. 8. Charlotte County. 1938.
- No. 10. Clay County. 1941.
- No. 11. Collier County. 1938.
- No. 16. Duval County. 1938.
- No. 18. Flagler County. 1938.
- No. 25. Hardee County. 1939.
- No. 26. Hendry County. 1938.
- No. 37. Leon County. 1941.
- No. 46. Okaloosa County. 1939.
- No. 54. Pinellas County. 1940.
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- Series II. The Federal Courts. 1940.
- Series III. The Department of the Treasury. 1941.
- Series IV. The Department of War. 1940.
- Series V. The Department of Justice. 1941.
- Series VII. The Department of the Navy. 1941.
- Series VIII. The Department of the Interior. 1941.
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- Series X. The Department of Commerce. 1941.
- Series XI. The Department of Labor. 1941.
- Series XII. The Veterans' Administration. 1941.
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- No. 12. Lake County Baptist Association. 1940.
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