Oral History Interview
With

Elwood L. Demmon

Asheville, North Carolina
February 13, 1959

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ERM: In a previous interview, Demmie, you told of your early life, your special training in forestry at school and in temporary work in the West and then of going out to the Far East in the plantation rubber industry. Now can you just go on from that point in the chronological story of your life?

ELD: As I told you before, after almost six years in Sumatra, Dutch East Indies, I decided that tropical forestry was not for me, that I had had enough of it. So when I came back in the fall of 1923 after my second period of duty in the Far East, I fully intended to get into American forestry in one way or another. However, as soon as I got back to this country and severed my relations with Goodyear, I was approached by another rubber outfit, the Firestone Tire and Rubber Company of Akron, Ohio, who at that time were considering forest plantation development somewhere in the tropics. They asked me if I would visit Central America and explore the possibilities for rubber plantations in that part of the world. One of the handicaps of the rubber plantation industry in the Far East was the fact that it was so far from America that in case of war our rubber supplies might be cut off. Firestone was the first large American rubber company to seriously consider growing rubber closer to home, and they asked me and Mr. Samuel Wierman, another man who had had experience in the Far East, to study the opportunities for growing rubber in Central America.

I had made no connections in the United States as far as forestry was concerned, and this was not to be a long assignment, so I accepted their proposition and spent approximately six months in exploring the economic, soil, and climatic conditions for plantation rubber in Central America. I traveled through all the Central American countries from Guatemala south to Panama, visiting several small rubber plantations that had been established there years before, to determine how rubber might do in those countries. I looked into the labor, transportation, and land ownership situation, and compared the soil and other conditions there with what I had experienced during several years in the Far East.

Plantation rubber in the Far East, of course, had originated from South America since all the rubber plantations there had come from rubber seeds that had been obtained about 1875 from Brazil, the home of the *Hevea brasiliensis* rubber tree. Although *Hevea* was not native to Central America, it would grow there because climatic and soil conditions were favorable. However, there was one drawback, a native disease that affected the leaves and eventually killed the trees, but which had not spread to the East Indies. So the few *Hevea* plantations that were started

in Central and South America had never done well because of this disease. Since about 1910 practically all raw rubber used in the world came from plantations in the East Indies, with the exception of small amounts of natural rubber that were harvested from rubber trees growing in the jungles of Brazil and Africa. In these jungles there might be only one rubber tree to an acre mixed with the rest of the forest. Obtaining rubber from those trees presented many difficulties because the laborers had to circulate around through a dense jungle and obtain rubber sap from only a few trees out of many thousand.

ERM: Were there no plantations set up in Brazil?

ELD: So far as I know, there were very few or no plantations in Brazil because there was little open country in which to plant. Jungle had to be cut down in order to start plantations. This was tried later on by Henry Ford, who started a big development in Brazil, but the leaf disease of rubber was so serious there that these plantations failed. Even today I don't think there is a successful rubber plantation in Brazil, although the *Hevea* rubber trees grew there originally, and still grow there where they are protected from the leaf disease because they are so scattered throughout the jungle. However, when rubber trees are set out in plantations, this particular leaf disease becomes so serious that it defoliates the trees and eventually kills them.

ERM: No research has been able to solve that problem, I take it?

ELD: Yes, I understand that research men have found a few disease-resistant trees and have worked out a method for reproducing them by budding and grafting. They have selected out certain strains of the *Hevea* tree that is resistant to this leaf disease as well as being a high rubber yielder, and are now propagating them in Central America, particularly in Costa Rica and Guatemala. But when I was down there in 1924, no research had yet been done on rubber-tree diseases.

Although some of the small plantings of rubber that I saw in Central America indicated that *Hevea* rubber would grow there, and even the leaf disease at that time was not yet serious, the reason that Firestone and other rubber companies did not start rubber plantations in Central America was primarily due to the labor situation. Labor costs there were about four or five times as high as in the East Indies, and labor was not as plentiful. The factor of added transportation costs for rubber from the Far East was not enough to justify the differential in labor. After six months of looking into the climatic and soil conditions and other factors influencing rubber production in Central America, I advised against it because of the economic aspects, the cost of producing the rubber. So Firestone started rubber plantations in Liberia, which is on the west coast of Africa, where there are no leaf-disease problems. Also, in Africa labor was very plentiful and reasonable, and that made it possible for them to compete with the Far East economically.

Although Firestone developed rubber plantations in Africa and never got into the Far East, I had no inclinations to go to Africa. In fact, I was fed up with the tropics and wanted to get started in U. S. forestry again. When I came back from Central America in June 1924, I was really through with the tropics and began to look seriously for opportunities to get into forestry work here at home. There were not too many opportunities at that time as about the only employer of foresters was the federal government, and the best way to get a federal forestry job was through the Civil Service examinations.

ERM: Did you make any effort to get a job in industrial forestry?

ELD: No, because there were no industries looking for foresters at that time. In the fall of 1924 the government was seeking men to assign to forestry research, and inasmuch as a considerable amount of my duties in the rubber industry had been along research lines, I thought that this might offer one method for me to get into forestry work in this country. I took the Civil Service unassembled examination for silviculturist and after several months heard that I had successfully passed. While waiting to obtain a permanent appointment, I had obtained a temporary job with the Lake States Forest Experiment Station in St. Paul, Minnesota under Dr. Raphael Zon. Dr. Zon was greatly interested in helping young fellows get started and knew something of my background, so he offered me a temporary job as a field assistant for the summer of 1924; and I was assigned to a study of jack pine growth in Michigan. This was partially financed by the state of Michigan but was conducted under the direction of the Lake States Forest Experiment Station which had just been established the previous year, in 1923. I worked under A. E. Wackerman, now professor of forestry at Duke University, who was the leader of our party for four men. I spent a couple of months traveling around with these men making tree measurements in second-growth jack pine stands in the upper and lower peninsulas of Michigan. In that way I got back into forestry work in this country and was fairly close to my old home in Grand Rapids, Michigan.

As I had not yet heard the results of the Civil Service silviculturist examination, later that year Zon offered me another job as a field assistant on an aspen growth study in Minnesota. I reported to the St. Paul office and was sent to Cass Lake, Minnesota right in the middle of winter, and I worked there with Eddie Probstfield, who was a recent graduate from the forestry schools at Minnesota and Yale. Incidentally, he later went to work for the U. S. Rubber Company plantations in the Far East. We spent several weeks living in a logging camp where we cut down aspen trees of different sizes and took stem measurements to determine the growth rate.

In those days aspen was considered a worthless tree species, but it grew on millions of acres, coming after logging and fire, and Zon was of the opinion that some day it would be a useful tree. He has been proved right because now aspen

in the Lake States is widely used for pulp and paper. In fact, some pulp and paper companies are now trying to grow aspen, whereas previously they were anxious to get rid of it because they were using mainly jack pine, spruce, and balsam in their pulping processes.

While I was in northern Minnesota working in thirty to forty degrees below zero weather, I heard that I had been accepted for a Forest Service research assignment. As I had worked in the tropics, they thought that I should be assigned in the southern part of the United States, that being closest to the tropics, and I was offered a job at the Southern Forest Experiment Station. In March 1925 I reported for duty at the office of the director of the Southern Forest Experiment Station in New Orleans, Louisiana, and there started a career in federal forest research that continued until my retirement in 1957.

ERM: Before you get on with that, Demmie, you spoke of going to work for Raphael Zon in Minnesota. What can you tell about Zon as a man? How do you rate him in the history of forestry?

ELD: I would say Zon was one of the outstanding men in U. S. forestry because he was mainly responsible for the beginnings of forest research in this country. He was in charge of all forest research out of the Washington Office for many years and was the first director of the Lake States Forest Experiment Station from 1923 until his retirement in 1944. I feel very fortunate that I could break in under a scientist like Dr. Zon because he was a remarkable individual who had a great deal to do with formulating forestry programs, not only in research, but for all forestry. As it happened, I was the one selected to succeed Zon when he retired from the Forest Service, and I went back to the station where I had earlier served as a field assistant. I felt much indebted to Dr. Zon as he had helped get me into U. S. forestry work when he knew that I had been out of the country a long time. He was very helpful to many young foresters in getting them started on a career.

ERM: Was he a man given to doing a great deal of original work himself or was he more the administrator?

ELD: In his early days he had done considerable research work on his own. In fact, he was recognized as a world authority on forests and water and had written widely on the relation of forests to rainfall, soil erosion, and so forth. Not only was he recognized as a scientist, but largely through his efforts forest research had become established in this country. He was a world authority on forestry and prepared the forestry section for the *Encyclopedia Britannica*, which is an indication of his standing. He also served as editor of the *Journal of Forestry* for many years and was one of the first Fellows of the Society of American Foresters. So he really was one of the pioneers in forestry research in the world, you might say.

ERM: What can you say about him as an individual? What sort of a person was he?

ELD: Well, I only had occasion to work with Zon as a field assistant, so I was not thrown in with him very closely because most of my duties were in the field. However, I had many long conversations with Dr. Zon, and he stimulated me to get into forestry research. He had a lot to do with my future in research because it was on his recommendation, I am sure, that I was offered a permanent assignment at the Southern Forest Experiment Station.

ERM: Your work with the rubber companies would seem to have set you off in the direction of forest land management rather than forestry research. When you came back to this country, you decided to go into research. Would you say that Zon was instrumental in changing your course?

ELD: He probably was more instrumental than any other one person. The man who introduced me to Zon was one of my old professors, P. S. Lovejoy of the University of Michigan, who later became rather high up in forest conservation work in Michigan. Lovejoy knew that I was looking around for work, so he wrote Zon and suggested that he give me a job, which Zon did. I guess Lovejoy and Zon are the men who were largely responsible for getting me into forest research. Of course, in those days the men heading forest research in the U. S. Forest Service were Earle H. Clapp and Edward N. Munns. I had met them so they knew something about my background and, as it happened, they also had been educated at the University of Michigan as I had, so we had something in common there.

ERM: Where did you meet Clapp and Munns?

ELD: They were in Washington at the time of the Society of American Foresters meeting there in December 1924, just at the time when I was looking for a regular forestry assignment.

ERM: The meeting of the Society was then, as it is now, a sort of market place for jobs?

ELD: Yes. One reason that I attended the Society meeting in Washington was that job interviews were being conducted.

ERM: You got these temporary jobs with Zon out in Minnesota and Michigan while you were waiting for a report on your Civil Service examination?

ELD: That's correct.

ERM: What happened after you finished your work out in Minnesota and were assigned to full-time work in the South?

ELD: I didn't finish any work in the Lake States because I was merely a field assistant helping other men like Joseph Kittredge and A. E. Wackerman in some of their regular work. During that period when I was intermittently at home in Grand Rapids and working on these temporary assignments, I met my present wife who was then teaching school in Grand Rapids. When I went south in March 1925, we were engaged, and in June 1925 we were married in Saginaw, Michigan.

ERM: What was her name?

ELD: Doris Oppermann. She was from Saginaw, had graduated from Michigan State Normal College at Ypsilanti, and had been teaching school in Grand Rapids for a couple of years. We met through mutual friends in 1924, and a year later we were married and she came south with me. For the next nineteen years we made our home in New Orleans.

I started at the Southern Forest Experiment Station as an associate silviculturist at $3,300 per year and worked for the next two years under R. D. Forbes, the first director of the station. The southern station was one of the first of two regional forest experiment stations to be established in the United States in 1921. When I arrived on the scene, I was about the sixth man on the staff of the southern station, and my first duties were to get acquainted with the region and its problems. I was assigned primarily to what we called extensive surveys, which were made to obtain general information on the growth of timber, the effect of fire, and other problems having to do with southern forestry. The results of these studies were used in preparing a bulletin about timber growing for the South. Other similar bulletins were put out about that time for each of the forest regions in the country.

ERM: How widely were these distributed?

ELD: These timber-growing bulletins were distributed rather widely to lumbermen, forestry schools, and others. They were really a major source of information at that time on American forestry; they weren't too scientific because the experiment stations were manned by personnel transferred from administrative jobs in the Forest Service or by forestry school graduates who indicated an interest in research. Actually, in those early days men were not trained for research as they are now. There were no Ph.D.s available for research then. The men had to learn by doing and it wasn't too satisfactory, but it was the best we had.

I continued as a member of the staff of the southern station for two years until Forbes was transferred in June 1927 to a new station in the Northeast at his own request. That made me the senior member of the staff in point of age, I guess, and I was made acting director. After a year, in July 1928, I became the director of the southern station. From then until the summer of 1944 I served as station director,

and during that period the southern station became the largest one in the country. You might say I became a station director more or less by happenstance.

After I was made director, I didn't have a chance to do any individual research work as it was a full-time job to supervise the research staff and to develop research programs. We worked closely with the southern forestry schools, the state foresters, and forest industry; and it was during the period from 1925 to 1944 that the great expansion of southern forestry was taking place. When I came south in 1925, there was very little forestry being practiced. There were only a few national forests in the South then. The big program of national forest acquisition had not yet really started—that came mainly in the thirties—so I had the opportunity of seeing forestry develop in the South, much of it on national forests. As the economic atmosphere improved, industry became more interested in timber growing. The big advance in southern forestry, however, came with the rapid expansion of the pulp and paper industry in the thirties.

ERM: What was the budget of the experiment station when you came to it in the twenties?

ELD: I think it was around $40,000 per year. They had just received an increase in appropriations which was the reason they could take me on. But when the staff was fully expanded, it only numbered about seven full-time men. Our office was one room in the old custom house in New Orleans, and we were crowded in there together. My period of forestry in the deep South stopped in 1944 when I was transferred to the Lake States Forest Experiment Station to succeed Raphael Zon, the only director that station had had since it was established in 1923. In looking over the field I guess my superiors thought that I had been in the South long enough and that I might like to return to the Lake States, so I was offered the opportunity. I had lived in New Orleans nineteen years, and we had raised a family of three children there, all born in New Orleans, so my ties were pretty much in the South. But I recognized that it might be a good thing for me to move. It would give me a new and broader outlook and also would give someone else a chance for southern experience. The Forest Service pretty much follows the method of moving men periodically and not leaving them in one place too long, and I think that is generally good for the men and good for the Service. My superiors felt that maybe I should try another region.

ERM: You were succeeded by whom?

ELD: I was succeeded by Charlie [Charles A.] Connaughton who had been director of the Rocky Mountain Forest Experiment Station at Fort Collins, Colorado.* Charlie was a westerner originally from Idaho and had no experience in the East, so he succeeded me and later became the regional forester in Atlanta and then regional forester in California. The Forest Service transfers personnel from one place to another for experience and also to give their men new opportunities for public service. I welcomed the move back to the Lake States after the first shock of leaving the place where I had lived so long. And for the next seven years, until 1951, I made my home in Minneapolis. The station office was on the St. Paul Farm Campus of the University of Minnesota. However, the farm campus is right on the boundary between Minneapolis and St. Paul. Our home was on one of the many lakes in Minneapolis, Lake Calhoun, and I enjoyed living there. It gave us an opportunity to have a sailboat and there was a swimming beach right in front of our house so our children enjoyed the life there. We lived just two blocks south of Lake Street. Lake Street, of course, is where many of the sailboats are tied up, although we kept our boat right in front of our house. It was very fine there in the summertime, although in the winter it got a little bit rough.

I continued for seven years in the Lake States. At first it was a little difficult to follow a man like Zon, a worldwide authority on forest research who had made the station what it was. However, many of the men at the station were old associates of mine. Some had been there when I had worked at the station in 1924 and 1925, so in some ways it was like getting back into the old home country. One of my jobs at the Lake States Station was to stimulate the establishment of several new field research centers. I had had the opportunity in the South of starting field centers at Crossett, Arkansas; Lake City, Florida; and at Urania and Bogalusa, Louisiana; and in the Lake States there were only two field centers at that time—one in the upper peninsula of Michigan and one in northern Minnesota.

ERM: What were the place names?

ELD: At that time they called one the Cass Lake Center in Minnesota, with summer headquarters in Cass Lake, and the work in the upper peninsula was at a place called Dukes, which is a small town near Marquette. Congress provided more money for these centers, and they became known as the Upper Peninsula Center with headquarters at Marquette, and the Headwaters Center at Grand Rapids, Minnesota. Later on there was established a research center at Rhinelander, Wisconsin and another in the lower peninsula of Michigan with headquarters in Michigan State University at East Lansing. These were part of the developments that took place while I was in the Lake States.

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* For more information, see *Forty-three Years in the Field with the U. S. Forest Service*, an interview with Charles A. Connaughton conducted by Elwood R. Maunder (Santa Cruz, California: Forest History Society, 1976).

ERM: What determined the establishment of centers?

ELD: Well, over the years the Forest Service had found that most forestry research needed to be done in the field and that it was better to have the men stationed out there on the ground than to try to handle field work from a big city like St. Paul—let the men live and work right out where the problems are—so field research centers have gradually been developed over the years. In the early days men were sent to the center or to the field station only in summer, and they were brought to city headquarters in the winter. That didn't work out too well because the man had to maintain two homes. Even though he might reside in a Forest Service cabin in the summertime, he had to leave the forest for part of the year. It seemed best in the long run to have men stationed where they could maintain a year-long home, where they could be part of the local community and represent the Forest Service continually right where most of the work was to be done. And it is for this reason that most of the country has now been assigned to one or another field research center, about sixty-five of them in all in 1959. Each federal forest experiment station maintains from ten to fifteen of these permanent field research centers.

ERM: What was the first of these centers?

ELD: Actually, the first field centers were probably those established right in the beginning when forestry research work first got under way back about 1908. But those were mostly one-man establishments in those days and were not tied in with any regional research office, but were part of the Forest Service administrative organization. The real field research center idea began along in the early 1930s when in the South, permanent centers were set up at Crossett, Arkansas in cooperation with the Crossett Lumber Company, and at Lake City, Florida where the research on naval stores was centered, in close proximity to the naval stores industry. You might say those were the two first permanent field research centers.

ERM: The Fort Valley, Arizona Experiment Station celebrated its fiftieth anniversary last fall, and I wondered what the relationship was between this station and its work and the other experiment stations, in view of the fact that there was such a long gap before other experiment stations were actually set up?

ELD: Well, Fort Valley was just a summer field station in the early days, and even now I'm not sure that research personnel stay there all year around, although that's possible. The centers that I am speaking of are those that are manned year-round, where the personnel live in a town near to their fieldwork and become part of the community. They work under the direction of a regional forest experiment station, but they're a permanent field center, and the forester in charge usually operates with a permanent staff of three to six research men. He may have some

temporary field assistants assigned to him in the summer field season, but for the rest of the years the permanent staff lives right there, works there, and is at the back door of the experimental area in which they conduct most of their studies so they can keep an eye on them year around.

After a period of seven years in the Lake States I got a little homesick for the South again. The winters in the North seemed to get more rugged every year, and the children had grown up and had pretty well completed their education at the University of Minnesota. I had put in a bid for a transfer if an opening occurred, so when Ted [Irvine T.] Haig from the southeastern station went with the FAO [Food and Agriculture Organization of the United Nations] in Rome, his place as director had to be filled. Since I had asked the chief forester, Lyle F. Watts, to give me consideration for any vacancy that might arise, he offered me the directorship of the Southeastern Forest Experiment Station at Asheville, North Carolina. Although this is not as far south as New Orleans, it's still part of the South, and we welcomed the opportunity of getting back at least that far south. We moved to Asheville in the summer of 1951 and at the end of 1956, when I was ready to retire, I continued to make my home right here in Asheville. This is where I plan to stay from now on as I have not found any place that I like better than Asheville as a home.

I enjoyed very much my six years as director of the southeastern station. Some of the same territory was included in this station's area that I had supervised before from the southern station. Between the time when I left New Orleans and when I came to Asheville, there had been a reshuffle of station boundaries. The old southern station had taken in all the states from Texas and Oklahoma to Georgia and Florida, but those boundaries were changed in 1946. The southeastern station now covered Florida and Georgia which previously had been in the southern station territory. So really it was in a way like coming back home because I knew many of the folks that we cooperated with in Georgia, Florida, South Carolina, North Carolina, and Virginia. Those are the five states in the southeastern territory, which to me is one of the most interesting forest regions in the country. My last few years in the Forest Service were devoted to this area and when I got ready to retire, I just stayed on here.

ERM: During this same period you were very active in professional forestry affairs, too, weren't you?

ELD: Yes. I had been a member of the Society of American Foresters, of course, during all my career since 1925, but it was only when I came to the Southeast that I was encouraged to accept a nomination for office in the Society. Before that I had been a member of the Council of the SAF from 1932 to 1935 and had held various positions in the Gulf States and Minnesota sections. I had also helped arrange the Society's annual meeting in Minneapolis as program chairman in 1947. But when I

came to the Southeast and affiliated with the Appalachian Section, I was approached as to whether I would be willing to run for a national office in the Society, and I agreed. In 1951 I was elected vice-president of the Society for two years, 1952 and 1953. I then stood again for election and became president of the Society for 1954 and 1955, so during much of the period that I was here in the Southeast, I was a national officer of the Society. That took me around the country quite a bit, attending Society meetings and section meetings, in addition to continuing my regular duties as director of the southeastern station.

In the fall of 1956 I decided that I would retire from the Forest Service after thirty-three years of service and enjoy some leisure. In October of that year I retired as director and was succeeded by Joseph F. Pechanec. However, I didn't give up all activities in forestry because I left Asheville on October 31 and on November 1 I started a temporary assignment as a member of a team to advise the Nationalist Chinese government on their forestry problems in Formosa (Taiwan). For the next four months, along with Harry Dean Cochran and Tom Gill, I served as a forestry consultant under the International Cooperation Administration program of our government. I spent a very interesting period out there. In fact, it was not so far from some of my previous assignments in the Far East. We were able to help the Chinese government in preparing a long-time forestry program for Taiwan which I understand is now being put into effect. Occasionally, I hear that our work is really resulting in an improved forestry program after many years of little or no forestry at all, or forestry that was developed under the Japanese and had been abandoned during World War II. That was not only an interesting assignment, but also worthwhile because it resulted in some good to a friendly nation.

When I returned home in the spring of 1957, I decided I ought to be doing something part-time, although I was not looking for any full-time job. About then the Battelle Memorial Institute of Columbus, Ohio was beginning a study of the Clarke-McNary cooperative fire protection situation in this country for the Forest Service, so they took on four consultants, and I was one of them. For most of the next year I helped on that study. It was rather down my line because I was familiar with fire problems in the South, and there was nobody else on the team of consultants who had had experience there.

ERM: Was this to determine whether the Clarke-McNary Act was still sufficient to the need?

ELD: It was a study of the entire cooperative forest fire problem in this country as to whether the Clarke-McNary approach was adequate. It resulted in a report that Battelle made for the Forest Service and for the state foresters who supervise most

of the cooperative forest fire protection in the country.[†] The Battelle report was made available to all the state foresters. Now whether it was generally available to the public, I am not sure. At any rate, this report covers the whole situation as to forest fire protection in this country on state and private lands. It doesn't get into protection of federal forest land. Well, that was one assignment that occupied some of my time and proved very interesting because while I was at the southern station, I had been concerned with fire problems and was fairly familiar with the southern situation, so I was able to arrange for the Battelle team to visit the South.

While on the assignment with Battelle, I was approached by a pulp and paper company in Georgia to review their forest management program. This company had set up a forestry program and employed about eighty technical foresters, but had never arranged for an outsider to come in and review their program for them in a consulting capacity, so I undertood that job, also. The company was the Georgia Kraft Corporation which operated two large pulp mills, one at Rome, Georgia and one at Macon, Georgia. This company owned close to a million acres of forest land in Georgia and Alabama and had a very comprehensive forestry program under way. I reviewed their program in the field with their own men and was able to make a few suggestions for improvement. That again was an assignment that proved interesting and productive.

After that work was finished about a year ago, the Southern Regional Education Board of Atlanta was looking for somebody to review the forest research programs of the accredited southern forestry schools. They knew of my experience in research in the South, so they asked me to visit each of the forestry schools and appraise their research programs. There were six state-supported, accredited, forestry schools, and I spent a few days at each school and prepared separate reports for each school on its research program. I have just recently completed a report covering all forestry research in the South, including that by educational institutions, industry, the states, and the federal government. This is now being published by the Southern Regional Education Board.[‡] So far as I know, it's the first time that a report has been prepared to cover all forest research activities in one region of the country.

A few years ago the Society of American Foresters conducted a study of forest research in the United States, Canada, and Mexico under Frank Kaufert's direction, and that resulted in a book that was published by the Society.[§] My

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[†] W. L. Swager, L. G. Fetterman, and F. M. Jenkins, *A Study of the Cooperative Forest-Fire Control Problem* (Columbus, 1958).

[‡] Report to the Regional Committee on Forestry, Education and Research, *Research in Southern Forestry* (Atlanta, 1959).

[§] William H. Cummings and Frank H. Kaufert, *Forestry and Related Research in North America* (Washington, D. C., 1955).

connection with that study was that I was chairman of the Society committee that advised Kaufert. I had had some experience in reviewing forest research activities, and the job for the Southern Regional Education Board was along that line. So you see, even though I've retired, I've kept fairly busy. My duties with the Society of American Foresters terminated when I completed my term as president in December 1955, but I still try to keep up with the profession and attend annual Society meetings. I think the recent annual meeting in Salt Lake City was the twentieth that I have attended. There are probably not many foresters who can say as much. Also, when I retired from the Forest Service as director of the Southeastern Forest Experiment Station, I had had a longer period of service as director of a forest experiment station than anybody else up to that time in this country – twenty-eight years. That is my background of experience.

ERM: When you first came to the Southern Forest Experiment Station in New Orleans, you say the budget was around $40,000 a year and the staff was roughly six or seven professional foresters. Was there also some clerical help to go along with that?

ELD: The clerical staff consisted of two office girls.

ERM: When you returned to the South here at Asheville, what was your budget in the first year that you were here?

ELD: It was close to half a million dollars.

ERM: And how large was your staff?

ELD: I think we had nearly a hundred people. And that has grown now until the annual budget is around a million dollars.

ERM: Well, Demmie, you have given a good chronological picture of your own career in forestry and maybe now we can begin to take a look at some of the specifics in the story. In your annual report of the Southern Forest Experiment Station for 1940, you made a statement in the opening paragraph that goes like this: "This 20th annual report of the Southern Forest Experiment Station provides an opportunity to review briefly the progress of forestry in the Lower South during the last two decades in an attempt better to appraise the important forestry task immediately ahead and to consider the role of forest research in these concerns." Now, this seems to indicate that you have a genuine respect for the value of history. I wish you would tell me very frankly what value you see in collecting and preserving what we might call the documentary or memoir sources of forest and forest history.

ELD: It seems to me that we can better chart our future course if we document some of the details of where we've been and how we got where we are, and that's history. As we get older many of us still can recall details of these early developments, so it may be helpful to foresters in the future to have information available on the historical development of forestry programs.

I've just completed a review of the historical background of forest research in the South for the Southern Regional Education Board. Forestry, of course, had its beginnings even before forestry research, although it should have been the other way around. Research really ought to precede forestry developments. However, in the South research really got under way before there was much forestry being practiced because in 1921 a research program was initiated with an appropriation of only $15,000 a year, which is just a token amount. Yet in those days it was enough to support a staff of three or four foresters and to get a research program under way. The southern station and the Appalachian station here in Asheville were the first two of these regional forest experiment stations to be established in this country, and they came about as the result of interest in forestry on the part of the southern lumber industry.

There was almost no southern pulp and paper industry then—maybe two or three small mills. Forestry in the South began with a few southern pine lumbermen. Interest in southern hardwoods had not developed much at that time. But the pine lumbermen, owning quite a bit of land and timber, were beginning to think about the future. Among the leaders were Henry Hardtner of Urania, Louisiana and Colonel William Sullivan at Bogalusa, Louisiana, who were members of the Southern Pine Association and who helped obtain the first appropriation for these two stations.

ERM: They helped in getting the money for the stations?

ELD: I am sure they had something to do with it, although the suggestion may have come from the Forest Service in Washington. It's necessary to obtain local support for such programs, and the Southern Pine Association supported this movement. At that time it was made up of the leading lumbermen in the South.

ERM: Who were the leaders of the Southern Pine Association at that time? Was this before Herbert C. Berckes became secretary of the Association?

ELD: It may have been before Berckes came in, but I wasn't there yet, so I'm not sure who was the first secretary.

ERM: The first secretary was [John Edgar] Rhodes, wasn't it?

ELD: I believe it was, but I didn't know him. Berckes is the man I recall as secretary of the Association.

ERM: Was Herb always in the forefront in getting money for this kind of work?

ELD: Well, he helped and Albert S. Boisfontaine was another official of the Southern Pine Association who was helpful. But the men who really gave the impetus to such support were the members of the Southern Pine Association, the heads of lumber companies like Mr. Henry Hardtner, who was chairman of their forestry committee. Many of my dealings with the Southern Pine Association were through the forestry committee and Mr. Hardtner, who owned considerable land in northern Louisiana and who made available to the southern station anything needed in the way of timber or land to carry on experiments. Many of the early experiments of the southern station were conducted at Urania and Bogalusa, Louisiana in cooperation with these members of the Southern Pine Association.

ERM: These two men stand out as having really conceived the value of forestry and good forest-land management way in advance of their contemporaries. Do you have any insights as to why this was and why the others were so slow in following their lead?

ELD: Both of those companies, of course, operated on virgin or old-growth timber which was made up of trees that were a hundred to two hundred years old before they were harvested and had not been grown scientifically at all. These companies each had large sawmills which were constructed to operate only for a certain period of time before they would go out of business. However, Mr. Hardtner, through his observations and through his contacts with foresters, particularly with the Yale School of Forestry which operated a spring camp at Urania, became convinced that forestry could be a permanent proposition. He observed how trees grew, and after a certain period of time he found that he was cutting some trees that had grown up during the time since his mill was established. This convinced him that forestry was possible if fires and also livestock could be controlled. Around Urania one of the greatest sources of damage to the native longleaf pine was the hogs that rooted up the seedlings. It was found through some of the early experiments that these forestry tracts had to be protected and fenced to control fire and hogs.

ERM: Which came first, Demmie, Hardtner's real interest in forestry or the influence of foresters on Hardtner? Did he take the Yale forest group in just as a gesture of goodwill and then from that experience develop a real interest in forestry, or was it the other way around?

ELD: I think probably it was the other way around because Henry Hardtner attended President Theodore Roosevelt's Conservation Conference of Governors in 1908,

and I believe that was before the Yale group arrived. Now this has been covered pretty well by Frank Heyward in his lectures at the University of Washington on the history of industrial forestry developments in the South.[**] Although Frank came along a little later and worked at the southern station during the thirties, he has gone back into the history of industrial forestry in the South, and I think he covered it very adequately. He reviews the development of forestry at Urania and Bogalusa. Of course, he is now connected with the Gaylord Division of Crown Zellerbach Corporation at Bogalusa.

ERM: Yes, I know Frank, and I have a great deal of respect for him and a great deal of appreciation for his serious interest in forestry history.

Now, in the report that you made in 1940, you went on to single out some of the pioneers of southern forestry, among them men who have been previously mentioned like Hardtner and Colonel Sullivan and R. D. Forbes and a number of others, too. I wonder if we might just take that list of people and draw out of your memory some brief, thumbnail sketches of them as individuals with particular emphasis on what you see as being their most important contribution to the development of forestry in that region. Perhaps we could begin with R. D. Forbes.

ELD: Forbes, of course, was my first superior, the director of the Southern Forest Experiment Station when I arrived in 1925. Forbes had been the first state forester of Louisiana beginning in 1917; and when the station was established in 1921, he became its first director, so Forbes really was in on the ground floor there. He worked closely with Mr. Hardtner and Colonel Sullivan and others in getting forestry started in Louisiana.

ERM: Were they the prime movers behind a state forestry program?

ELD: I am sure that Hardtner was because, as a state senator in Louisiana, it was through his efforts that the first state forestry legislation was enacted. He was also chairman of the forestry committee of the Southern Pine Association, and he helped organize the Southern Forestry Congress, which was a rather loosely-knit organization made up of leaders in the South who were interested in developing forestry state by state. Although their first meeting was in 1916 (I believe right here in Asheville), they held other congresses in different parts of the South, and their main objective was to help develop state forestry organizations. Usually they would hold a meeting in some place like Jackson, Mississippi or Memphis, Tennessee or in one of the other southern states in order to stimulate local interest in the need for a state forestry organization.

[**] Frank Heyward, "History of Industrial Forestry in the South," *The Colonel William B. Greeley Lectures in Industrial Forestry* (Seattle: University of Washington, 1958).

I would say that the Southern Forestry Congress, of which R. D. Forbes was a long-time secretary, probably had more to do with setting up state forestry organizations in the South then any other one group. Also, there were other factors, such as congressional committees and the U. S. Chamber of Commerce which held hearings in the South to promote forestry. But I believe the Southern Forestry Congress had the most success with getting forestry started at the ground level and getting behind local groups to obtain state legislation that would provide for the setting up of state forestry organizations whose main job in those days was forest fire protection. And, of course, that was very difficult because not many people really believed in fire protection because fire was so prevalent that people had grown accustomed to it.

I remember when I first went south, fires were so frequent that we just passed by them and never made any effort to put them out. Part of the reason for this was that over much of the South there was no organization set up to fight forest fires, even though foresters well knew that fire protection was essential to the practice of forestry. This could only come through public education and local efforts by the states themselves, so in some areas there were foresters preaching the need for fire protection before there was any state forestry organization.

ERM: The forester in this period had to be pretty much of an evangelist, didn't he?

ELD: Yes, and I guess that's been true everywhere. There had to be promoters and pioneers before you could get right down to forestry practice; and although I don't consider myself a pioneer, some of these men I mentioned were real pioneers. Among them was W. W. Ashe from North Carolina who was a botanist primarily, not a forester, but he wrote the first comprehensive treatise on loblolly pine, which is still an excellent reference. It was published in North Carolina by the state. Mainly out of his efforts, I think, the state forestry work was initiated in North Carolina. Later he became associated with the U. S. Forest Service and largely through his efforts and his knowledge and experience of forest conditions, the national forests in the South were established. He is the man who determined the tentative boundaries for national forest purchase units on land that in those days nobody really wanted—that was usually tax delinquent, cutover land. We considered Ashe as an outstanding botanical authority on forest trees and vegetation. He represented the U. S. Forest Service in mapping areas where national forests might well be established.

Ashe died in 1932, so really his influence only lasted during the early period of forestry developments in the South. But his botanical work in the South is still authoritative. Ashe was a very quiet individual and never had much to say. In his traveling around the country one would hardly know he was connected with the Forest Service. In his work of locating areas for prospective national forests I think he didn't particularly want it known what he was doing. I traveled with him on

occasion and found him one of the best observers that I ever knew. We might be driving along the road at thirty miles an hour, which was pretty speedy in those days, and he would look off in one direction and might see a tree new to him and think it might be a new species. He'd say, "Stop the car!" And he'd get out and sure enough he might find something entirely new to us. That's just an indication of what a keen observer he was, and he probably knew more about the southern forests and their characteristics than any other one person.

ERM: Do you know where his personal papers might be found?

ELD: He might have given them to the University of North Carolina because he was a native of North Carolina, or his wife may have given them to the Forest Service. But it was he who helped establish the herbarium in the Forest Service in Washington where he was recognized as a leading authority on the trees and vegetation in this part of the country.

ERM: Are any members of his family still living?

ELD: Not that I know of.

ERM: Was his home in Asheville?

ELD: I don't believe his home was here; I think it was in Raleigh or some place down that way. He was very familiar with this part of the country.

ERM: What about Austin Cary?[*]

ELD: Well, Austin Cary was one of the real forestry pioneers in the South; his life and accomplishments have been pretty well written up by Frank Heyward, so I won't go into detail other than to say that Frank has covered his forestry accomplishments very well and, also, that most of his papers were left to the University of Florida forestry school and are now in Gainesville.[**] I knew Dr. Cary very well because we were both in the Forest Service at the same time, and he was working in the South in the wintertime and in Maine in the summertime. He maintained an office with the southern station in Starke, Florida and later in Lake City, Florida where our first centers in the naval stores region were located. We gave him stenographic help and also a desk where he could sit and write letters and articles. Actually, old Dr. Cary didn't like to use a secretary; he handled most of his correspondence long hand and his handwriting was so bad that hardly

[*] For more information on Austin Cary, see typed transcripts of tape-recorded interviews conducted by Roy R. White with Charles A. Cary, Inman F. Eldredge, E. Worth Hadley, James Hart, Frank Heyward, Jr., James H. Jones, Herbert L. Kayton, and G. P. Shingler, Forest History Society, Santa Cruz, California.

[**] Frank Heyward, "Austin Cary: Yankee Peddler in Forestry," *American Forests* 61 (May 1955): 29-30, 43-44; 61 (June 1955): 28-29, 52-53.

anybody, including himself, could read it. I understand that he left a great many notebooks that are almost impossible to decipher. Dr. Cary carried on quite a lengthy correspondence with the station and also with lumbermen in the South, many of whom he stimulated to start practicing forestry.

ERM: He was a sort of minister without portfolio, wasn't he, in the Forest Service?

ELD: Although Dr. Cary was a member of the Forest Service, he was so independent that even the Forest Service had little control over him. I recall that the Washington Office of the Forest Service rarely could keep track of where he was or what he was doing, but they knew he was a valuable forest extension man because he could do better than almost anybody in interesting lumbermen in forestry. He really had a knack for taking businessmen out into the woods and showing them how trees grew and instilling in them the fundamentals of forestry. He always carried an axe with him and did not hesitate to cut down a tree just to illustrate its growth rate by counting the annual rings. Observations such as this made a deep impression on many of these old-time lumbermen, and they had great respect for old Dr. Cary. I would say that of all the foresters who have worked in the South, he probably had more influence with the lumbermen, selling them forestry, than any other technical forester. Dr. Cary was a technical forester, and he was also a very practical man and knew how to speak the language of the lumbermen.

He was very peculiar in many ways, however, and his eyesight was not very good so he might often pass on the street someone that he knew and not say anything. I remember he often came in the station office in Florida and wouldn't even say "good morning." We overlooked his peculiarities as we recognized that he was an expert who was doing a lot of good for forestry, and so the station men were very happy to give him whatever help they could. I used to go out occasionally with him. He would drive along in his old Ford for quite a while and not say a word, and then he would say, "Well, let's stop here and get out and look at the trees." He didn't have too much use for the research foresters working in the South because he considered us all as mere youngsters; he was an old-timer and knew all the answers without benefit of research. Peculiar as he was, Dr. Cary did a lot of good in getting forestry started in the South.

ERM: What was the method he would use in appealing to people? How would he approach a lumberman?

ELD: He would barge right into a lumberman's office. He wouldn't spend time with any of the underlings; he'd just go to the general manager or company president and tell him that he ought to be interested in the future of his timberlands. He would take these men right out into the woods and cut down a tree or two and show them how rapidly these trees were growing and that forestry was not such a long-time proposition as they might have thought. Many a hard-headed

lumberman became interested in forestry by just such tactics, whereas most technical foresters would use another method of approach. They would try to convince lumbermen that they should be interested in forestry because it was good business, but Dr. Cary would get them right out in the woods and show them on the ground. He spoke their language.

Before we leave Dr. Cary I think I should mention Dr. Eloise Gerry because Dr. Cary and Dr. Gerry often worked as a team in the South. Dr. Gerry from the Forest Products Laboratory at Madison was much interested in the naval stores industry, as was Dr. Cary. Dr. Gerry was studying the anatomy of wood to find what caused the gum to flow from trees that were being worked for turpentine and the relation of the age and size of the tree to the amount of gum flow. She and Dr. Cary worked out improved methods of turpentining on the national forests first, and then later sold the idea to the naval stores industry. They preached that it was not good business to turpentine small trees, that it was much better just to limit turpentining to the larger trees because they produced more gum and it was less damaging to the forest. I mention Miss Gerry because it was she and Dr. Cary who had considerable influence in getting the industry to adopt more conservative methods of turpentining. Research men of the southern station worked out the details later, but Miss Gerry and Dr. Cary were real pioneers.

ERM: What sort of a person was she and where did she come from?

ELD: Well, so far as I know, she came from Wisconsin, and her interest developed because she was trained as a wood anatomist or a microscopist and was interested in wood formation and development. At the Forest Products Laboratory, of course, she worked on wood technology and because the naval stores (turpentine and rosin) are produced from the inside of a tree, that's the way she got into this problem. Because the naval stores industry was located entirely in the South, Miss Gerry had to get into the Southeast once in a while to obtain wood samples, and there's where she and Dr. Cary ran into each other.

ERM: They must have made a rather unusual team in a way, and yet a very effective one.

ELD: They certainly made an unusual team because each of them was different in their own way, but each was also an expert in their own fields. Whenever I think of Dr. Cary, I also think of Eloise Gerry. She retired from the Forest Products Laboratory some years ago and, as far as I know, is still living in Madison, Wisconsin. It would also be fine if you could interview her because she really was one of the old-timers, too, in forestry developments in the South.

ERM: You are a personal friend of Inman F. [Cap] Eldredge. What do you recall of his contribution to southern forestry?

ELD: Of course, Cap is another of the old-timers, and you might say that he was the forerunner of technical foresters in the South. He was a graduate of the Biltmore Forest School right here at Asheville and was the first forest supervisor in Florida in charge of the old Florida National Forest. Later, he left the Forest Service and became one of the foremost industrial foresters in the South. Then when the Forest Survey got under way in the South in 1930 while I was director of the Southern Forest Experiment Station, we looked over the field very carefully for a man to head up the survey. There was no one who had a better background of southern experience than Cap Eldredge, so I was much pleased when Cap agreed to come to the southern station and act as director of the Forest Survey. Although Cap had a good job in southern Georgia as an industrial forester, I think he longed somewhat to get back into federal forestry work and here was a challenge in a new field—something that had never been done before. The Forest Survey started in the South and in the Pacific Northwest in 1930. It soon became a major project of the southern station—not exactly research, but it furnished essential background for the great expansion in southern forestry developments during the thirties. We always considered ourselves most fortunate in getting Cap to take on that assignment, and he continued on that job until he retired from the Forest Service in 1944, just before I transferred to the Lake States.

ERM: To what extent do you feel these surveys stimulated the development of new forest products industries in the South?

ELD: I imagine that southern forest industries would have expanded if there had been no survey, but probably a little more slowly. When new industry comes into an area, it wants basic information on raw materials, and we didn't have very exact forest inventories in those days. All we knew was that there was a lot of timber in the South and a great deal of timberland; but how much of it there was, where it was, how rapidly it was growing, what the chances were of consolidating ownerships and of setting up new industries, that information was not available before the survey provided it. The survey very fortunately came just at the time when interest in forestry was really beginning to develop and expand. It didn't take long before the forest industries were the best supporters we had for the Forest Survey. In fact, they were pressing so hard for survey information that they provided additional manpower of their own as well as support in Congress, which was very important.

I would say that the Forest Survey probably had more to do with the rapid expansion of southern forestry in the thirties than any other one project. Forest research by itself, the gathering of information on how to grow and reproduce forests and how to harvest them to get the most timber and provide for future crops, is something that didn't seem to interest businessmen very much until the time came when they actually wanted the information. They did not look ahead

and foresee the need for such information, so they really did not support forest research in the early days. However, they could understand something like a forest survey from which they were getting something they needed and wanted. After that the industry people became real supporters of research. And Cap Eldredge and the friends he made in industry helped greatly in selling the value of forest research in the South and also all over the country.

ERM: Cap was, then, one of the very important people in developing forestry in this area.

ELD: He certainly was and, as I indicated, it's always a good thing to have the backing of the general public and industry. I think that Cap Eldredge personified the Forest Service to many people and was, through the friendships he established in industry, largely responsible for the excellent relations that grew up between the Forest Service and forest industry in the South.

ERM: Cap seems to have a remarkable ability for understanding and knowing how to cultivate people on all levels, whether they are at the top echelon or down at the lowest level of social or economic life. I have had a feeling in interviewing this man that he has that talent of being able to work effectively with people at any level—whether it is out in the woods with a crew or working with the top men of industry and government.

ELD: Yes, and, of course, Cap was one of the few southerners who had gone into forestry. Most of us who worked in the South came from other parts of the country. Forbes came from the northeast; I came from Michigan; most of the state foresters and other technical foresters in the South were educated in the North because there is where forestry education was centered in this country. Although Biltmore was located in the South, still most of the foresters who worked in the South were either northerners educated in the North or southerners who had gone north and then came back to the South. Cap Eldredge was a native of South Carolina and he spoke the language of the southerners. Actually, the South was a region that did not always welcome northerners. However, forestry education got under way rather slowly in the South, and the southern schools did not graduate many foresters until along in the thirties, so it was an advantage to have someone whom southerners could consider as one of their own boys. Cap Eldredge spoke their own language, knew their customs and way of life, and he was also a technical forester with a national reputation, having worked in various parts of the country.

What Cap said meant a lot more to southern people generally than what some of the rest of us would say. They listened to Cap with respect, and he appeared on the program at many of the forestry meetings down here. Whenever industry representatives became interested in the South, one of the first men they'd get in

touch with was Cap Eldredge. Cap also had worked long enough in the Forest Service so that he appreciated the place of research in forestry developments. Even before he came to the southern station he was a member of our southern forest research advisory council. At advisory council meetings, which were held annually, Cap always was one of the most active members and asked pertinent questions about the research program. He was fairly familiar, therefore, with our research program even before he became associated with the southern station. I think we can say that Cap had a great deal to do in obtaining support for research.

ERM: One of the things that impresses me in studying this whole history of forestry in this country, Demmie, is that the Forest Service seemed to have some genius for picking men and assigning them to work which gave them a rather full range for development of their particular talents. I think what you just told about Cap Eldredge is illustrative of this; I think what you told about Austin Cary is indicative of it. Was there a policy in the Forest Service in this regard, or was it just good fortune that it all developed in that way?

ELD: Well, forestry, of course, in this country was developed largely by the U. S. Forest Service through Gifford Pinchot and a group of young men in the early part of this century. They weren't old codgers; they were youngsters. They welcomed new ideas and they didn't have preconceived notions. The Forest Service usually selected the best man for a particular job, and the best man for the job of selling southern forestry during the twenties and thirties was a man like Dr. Cary. Although he had been a college professor, he was also a good woodsman and spoke the language of the woodsman, so the U. S. Forest Service assigned him to their forestry extension program. Cap Eldredge was a southerner; he was one of the best men the Forest Service could get to promote southern forestry. Until recent years the Forest Service has been mainly a young man's organization. Now some of us are getting older and retiring, but for many years most of these Forest Service men were comparative youngsters.

ERM: Now, this seems to be something of a tradition in the Service. Is it something that you associate with the personality or the organizational genius of a man like Pinchot? Was this a tradition born in those early days and continued to the present time?

ELD: These men were not only pioneer foresters, they also had the public interest at heart. Most of the forestry work began as a federal program and the pay was small. Most of us went into forestry because we liked the work and we liked to be doing something that would benefit the country. These men were interested in more than just making money. Cap Eldredge is a good example because I think Cap could have made more money by staying out of the Forest Service and working for industry. But he preferred public service, and I think many of us were the same way.

ERM: Do you think that this condition still obtains in the Forest Service?

ELD: Yes, I do.

ERM: And is there still a strong element of idealism involved in a career in the Forest Service?

ELD: That's my thought, and I'm sure that the technical men in the Forest Service are, by and large, high types of individuals—well educated and, above all, doing something more than just working for pay. They are working for the betterment of the whole community or region or the whole country. In selecting men with that feeling, the Forest Service got men who were not just looking for a living; it went beyond that. Pinchot, I'm sure, and Graves, Greeley, and others of the Forest Service leaders had the public interest at heart. And that follows even until today.

ERM: Demmie, I had an interview not very long ago with another man, a contemporary of some of these men whom we have been talking about. It was his contention that the really energetic men took a period of training in the Forest Service and then reached outside it for larger opportunities in the field of forestry, and he left the impression that he felt that this was pretty generally true. You take quite another point of view; I wonder if you would care to discuss that view more fully?

ELD: Well, I just mentioned Cap Eldredge as an example of the men who had opportunities to get out and did get out for a while, but came back into the Forest Service. Many of the foresters who later worked in industry started out in the Forest Service and obtained valuable experience there. I believe the Forest Service has always been glad to train men for other jobs—like teaching or industry work—because they take the viewpoint that these men are being trained for the good of the country. Now, of course, men are not all the same; some prefer to work for public organizations and others prefer to work elsewhere. Both are needed. But I cannot recall examples of men who started working for industry and then came to work for the Forest Service, although there must be some. We found the experience that the men gain in working for industry very helpful to the Forest Service organization because it gave them a broader viewpoint. I wouldn't say that too many men have worked for the Forest Service only for experience and then expected to find jobs elsewhere, although there have been men like that. Of course, during the Depression years the federal service was about the only opportunity for many foresters.

I tried to guide many of the men who worked in our organization into jobs where their talents could be best served. If a man felt that he would be happier or could do better in industry, I always encouraged him to move. Some people in the Forest Service didn't like to see some of their best men go to industry or teaching,

but I took the viewpoint that Forest Service training should help the man as well as benefit the public. Then if the man sought other employment to better himself, that was his privilege; and it should result in improving the status of forestry in the country as a whole.

ERM: There were some, I presume, who looked upon the Forest Service as a sort of *cause celebre*, and when a man left the Service, he was looked upon by some of these fellows as sort of a renegade to the cause?

ELD: Possibly in a few cases. But, by and large, we hoped that men trained in the Forest Service would be sufficiently broadminded so that they would not be anti-Forest Service after they left. There were a few that became that way, but I think most Forest Service men were instilled with the public-service attitude so that even though they left to go into other work, such as teaching or industry, they would still be good supporters of the Forest Service. I think ninety-nine out of a hundred were that way. You might find an occasional one who may have had some personal dissatisfaction in the Forest Service and who, when he got out of it, would speak against it. But they were exceptions.

ERM: Has this growing interest and activity in industrial forestry presented any real problems of recruitment to the Forest Service agencies, such as your research centers and experiment stations?

ELD: Yes. At different periods, of course, the situation varied. Following World War II, with many men coming back from service and not too many foresters available at that time, the competition was pretty keen. Industrial forestry was expanding at that time, and many companies were able to offer a higher entrance salary possibly than the Forest Service. Many of the youngsters who were looking for jobs had families and thought more, perhaps, of the immediate salary than of their long-term career. After all, forestry is a career no matter who one works for. So industry, in some cases, was able to offer possibly a few hundred dollars a year more than the Forest Service because the Forest Service was restricted as to the salary it could pay, depending on schooling and experience. There have been times when a man had a choice between several jobs and, if one offered more money, he often went to industry. However, there have been other instances where men have come into the Forest Service for less money because they wanted the training and experience they could get with the Forest Service. It has worked both ways.

I have never known anybody who regretted the experience he has had in the Forest Service because this has been the oldest forestry outfit in the country, with a good organization from the entering positions right up to the top. The Forest Service has a background record that other forestry institutions and forest industries do not have. I think that many of the foresters in this country have been

fortunate in receiving training in the Forest Service, even though they didn't stay there all their lives.

ERM: It has been said that there are a great many men in the Forest Service today who are there because it is a nice cozy niche they have created for themselves and this is the path of least resistance. In other words, a big government agency like the Forest Service is a haven for people of mediocre talent—people who would not last very long in industrial forestry. Do you think that is a fair evaluation of the situation or not?

ELD: I would say not, although I wouldn't say that all Forest Service men are outstanding or exceptional. There are some men in the Forest Service who have reached the ceiling of their ability but who are doing an adequate job. Most men do better at certain jobs than others, depending on their capabilities. If they do not work out well in some job, the Service tries to find something else for them to do. There are many men who have entered the Forest Service because they felt they liked that kind of work. However, they had to have a certain background of education and experience to get in, and then they had to do an adequate job or they couldn't stay.

ERM: Is their work constantly being put to the test?

ELD: Periodically, every man's work is reviewed and his future is discussed with him personally by his superior. If he doesn't come up to certain standards, either he is transferred to another place where he will fit in better, or as a final resort he has to get out. It's no place just to come in and sit.

ERM: I wanted to get another point of view from someone like you who has had a good deal of experience in the Service because we try to look at this history of forestry from many different angles, so that we are not getting just one point of view.

ELD: Foresters, of course, are human and there are as many kinds of foresters as there are kinds of people. But by and large, I think that men who go into the forestry profession have a little better conception of where they're going and what they're doing than the average run of folks. I would say that foresters are pretty high types of individuals.

ERM: And, in large measure, moved by fine motives?

ELD: Right.

ERM: Now, we've talked about a number of people. I'd like to hear a little bit about W. R. Mattoon, whom you knew personally.

ELD: Mattoon was closely identified with the South because he was the extension forester working out of the Washington Office in charge of federal forestry education work in the South. Although most of his work was with the state extension foresters in the southern states, he made a real contribution to southern forestry because of his publications and speeches. He was one of the best writers in the Forest Service on forestry matters. He wrote bulletins on the southern pines and cypress that were easy for people to understand. Through Mattoon's writings, many folks learned more about forestry than they would have otherwise. These pamphlets and bulletins were distributed by the Forest Service to farmers and others who wanted to know more about forestry. Also, the information they contained was used by the extension foresters as a guide to improve forestry practices.

In all of Mattoon's writings and speeches he was optimistic about the possibilities of timber growing in the South. You might say that he helped sell forestry to the South. He was a very friendly individual. He attended many meetings and made a favorable impression on people. He was a good example of a man in the Forest Service working for the public interest—not primarily for the pay, but to do a good job. Because he was a good contact man who covered a pretty big territory, he had a lot of influence in getting forestry started where there had been no previous forestry program. In some states there was a state extension forester before a state forestry organization was established. As an example, Arkansas had an extension forester for several years before it had a state forestry department.

ERM: Why was Arkansas so slow in developing it?

ELD: Well, Arkansas was one of those states where forestry hadn't been sold to the public, where the cut-out and get-out policy had predominated. Even though the Crossett Lumber Company set a good example, there were many Arkansas timberland owners who considered forestry as something theoretical. However, when forestry did get going in the South and the International Paper Company and others came into Arkansas, southern Arkansas in particular became one of the best forestry areas of the whole South.

ERM: And it's a model right now, isn't it?

ELD: Some of the best forestry practiced is in southern Arkansas. Charles A. Gillette was the first Arkansas extension forester, and I am sure that Mattoon had something to do with getting that work initiated there. Gillette helped sell the idea of forestry to the state. He had been there two or three years when a state forestry department was set up, and he was appointed the first state forester. He

is now with American Forest Products Industries, Inc., but he got much of his early experience in Arkansas.*

ERM: Do you have any personal reminiscences about W. R. Mattoon as an individual?

ELD: We all knew Mattoon as "Matty." He was sort of fussy and like an old woman in many ways, but always very pleasant and courteous. I think many people who got to know him thought of him as "Mr Forest Service." He was the only Forest Service man that many people knew in the forestry education field. I've never known anybody more friendly than Mattoon. He had to travel a great deal because that was part of his job. We never knew when he was going to show up, but he always stopped in to see the men working in research. We helped him on many occasions by reviewing his manuscripts and in giving him material based on research findings.

One of the ways of getting research results into use is through education and extension. That is, research men are not always good extension men themselves; they may be good at finding out things, but getting the results of their research into practice is not always their strong point. Men like Mattoon could take the findings of a research organization and put them into simple language that a farmer could understand, so we were always glad to see Mattoon and to work with him because we knew that he would help get our research results into use quicker than if we had to depend only on ourselves.

ERM: He must have been quite a nomadic character, wandering all over this area constantly.

ELD: Well, he was not much different in that respect from Austin Cary and Ashe and others who traveled around a lot, too.

ERM: Did some of them take their families with them?

ELD: They probably had families, but these men lived in Washington and spent most of their time in the field.

ERM: What do you recall about J. G. Peters?

ELD: Peters was one of the old-time foresters who was in charge of the states relations work for the Forest Service. Mattoon worked very closely with Peters, and Peters's job was to help develop interest in setting up state forestry organizations, mainly to facilitate fire protection. Another man who worked in that same organization was Hastings, A. B. Hastings. That particular office also included the

* American Forest Products Industries, Inc. became the American Forest Institute in 1967.

men who worked on Clarke-McNary inspection work under the Washington Office. Among these were Murray Bruner, H. I. Eberly, and Charlie Evans. These were contact men who checked over the expenditures of federal funds for cooperative fire protection by the states. They had great influence in promoting forestry, and Peters was the boss of that group in Washington. Whenever the Southern Forestry Congress held a meeting, Peters was usually on the program to explain the workings of the fire cooperative program between the states and the federal government because during that period forestry organizations were developing rapidly in the South, and Peters had much to do with stimulating their origin and development.

ERM: We've mentioned before Professor H. H. Chapman and his work in the South. What would you have to say about him?

ELD: Chapman, of course, was one of the pioneers in southern forestry because he brought the classes from the Yale forestry school into the South. In the early days they went to a different place almost every year—Texas, Alabama, Arkansas, Louisiana—but finally they set up a camp at Urania, Louisiana every spring. They spent part of their training period there and part of the time at Crossett, Arkansas, so the Yale students who came to these spring camps were instilled with the possibilities of southern forestry. It was Chapman who made these original contacts in the South, and he became much interested in southern forestry. Chapman was a great investigator of forestry problems. That is, he first came South before there was any federal forest experiment station, and he set out plots of his own at Urania and elsewhere to study tree growth and the effects of fire and thinning and to observe how reproduction got started. He did much to stimulate interest in southern forestry on the part of Henry Hardtner of Urania, the Crossett Lumber Company, and others.

He was looked to, not only by his students, but also by many others, as an authority on the South because even though he just spent part of each year in the South, he did gather a great deal of first-hand forestry information on his own. He put that information into writing and was one of the first, if not the first, to recommend the use of fire in reproducing longleaf pine. It is now well known that long leaf pine needs the use of fire for its best early development to keep down competition with vegetation and to control needle disease. That's now accepted as a fact, but in the early days it wasn't; and controversy developed between Chapman and other foresters. In the early days the Forest Service and state men as well were advocates of a "no burning" policy or complete exclusion of fire. There had been so much widespread burning in the South that it was generally taken for granted that fire never did any good. It took Chapman and others to stimulate the Forest Service in their thinking, so that they could work out the truth of the matter. But it must be admitted that Chappy was among the first to observe many of these things and to publish the information.

But when the Forest Service finally recognized the possibilities of using fire in the management of longleaf pine, there was a great deal of opposition on the part of state foresters and others to the Forest Service saying anything about it. I recall an annual meeting of the Society of American Foresters [January 1935 in Washington, D. C.] where there was one entire session on various aspects of the southern fire problem, including discussion of the benefits of using fire. There was a great deal of criticism of this program because here were men from the Forest Service, including Cap Eldredge and myself and others, indicating that fire could sometimes be of value. There were many foresters who said, "Well, even if you think so, you shouldn't say so."

There was a time when most of the owners or users of southern cutover forest lands thought that their chief value was for grazing, and those men knew that in order to have the best grazing they had to burn off the old, dead grass every winter so that the new grass would come up early in the spring and be available for cattle. The Forest Service was involved in some experiments at McNeil, Mississippi that brought out this information. It also showed that fire, when properly used, could be beneficial in longleaf pine management.

There was a great deal of controversy about whether the Forest Service should publish information of that kind even before they had the final answer. That question went right up to the chief of the Forest Service in Washington, who at that time was [Ferdinand A.] Silcox. Silcox stated, "If we find that there's any beneficial use for fire, we will say so." That gave the Forest Service the opportunity to tell what it knew even at the risk of losing some of our friends, particularly in the state forestry services, who in those days believed that there was no value in using fire. Chapman was in the midst of that controversy.

ERM: Chappy has always been in the midst of controversy, hasn't he?

ELD: Chapman always seemed to enjoy a fight and he was in many of them. He was a great backer of the Forest Service in some of the fights, but if he didn't like certain Forest Service policies, he didn't' hesitate to speak out, and we have to hand it to him for that. At any rate, he had quite a lot to do with stimulating interest in forestry in the South.

ERM: What do you remember about Major J. G. Lee of Louisiana State University?

ELD: I never knew old Major Lee very well because he had kind of passed out of the picture by the time I came along in 1925, but he was largely instrumental in the establishment of the forestry school at Louisiana State University. He was the first professor. In fact, he was a professor of botany there before they had any forestry school, and he took a great interest in forestry. Probably his influence didn't extend much beyond the state of Louisiana, except that Louisiana had the first

forestry school in the South, after Georgia, and Major Lee was largely responsible for getting the school started.

ERM: Did you know any of the state foresters of Texas?

ELD: I forget who was the first state forester of Texas, but E. O. Siecke was the second state forester.* Siecke was a graduate in forestry of the University of Nebraska, and I think he came into Texas as assistant state forester and later became state forester and held that position for many, many years. He was one of the deans among the state foresters for the whole country. He was looked up to and regarded as a leader in state forestry work. He took a great interest in the Southern Forestry Congress and in getting state forestry work organized in other states. He served as president of the national Association of State Foresters and did a great deal in his contacts with the federal Forest Service and with industry to stimulate forestry throughout the South, so his influence went even beyond Texas.

Siecke also took a great interest in the Society of American Foresters and served as one of the members of the council of that organization. He also was instrumental in organizing the Gulf States Section of the Society. He was on the advisory committee of the Southern Forest Experiment Station for many years and that's how I was thrown together with him quite frequently. I came to regard his advice and his knowledge as being very helpful to the southern station as well as to the whole cause of southern forestry.

I can tell you more about him than I can about any other state forester because in many of the other southern states the state forester changed frequently for one reason or another (usually politics), whereas in Texas the state forester was part of the education setup of the state. He had his office as a part of Texas A & M College and was one of the department heads of the college, and for that reason he was somewhat removed from politics. In fact, his was an appointive office, which differs from most state foresters.

ERM: In the South with the Democratic Party dominating the political picture, why were there frequent changes? I suppose from one administration to the next there would be a certain change of personnel, but not in party.

ELD: That's correct. Although the party doesn't change, politics are taken very seriously in the South and some of the intraparty scraps were more intense than between Democrats and Republicans in other parts of the country. In many southern states the party in power kept control by passing around jobs to their own supporters. When a new governor was elected, many jobs changed hands

* J. H. Foster was first state forester of Texas, 1915-1918.

and state foresters wee often included in that list. These jobs were considered political rather than professional.

ERM: Did that extend on down the line into the personnel who made up the staff of the state forestry department as well?

ELD: Yes, often it did.

ERM: It must have been very hard to maintain any continuing program under those conditions, wasn't it?

ELD: It was often very difficult.

ERM: Were any changes effected to follow in the pattern of the setup in Texas as time went on or has it continued to be a political office?

ELD: It depends on the state. Some states are more stable than others. Louisiana, of course, for many years was very unstable with its Huey Long and other dominant leaders. They kept in power by passing out jobs and favoritism. The same thing took place in some of the other states—Georgia, for example. But as time goes on, even in those states it is becoming recognized that certain types of work are of a professional character and need stability to keep them going. Some states have set up civil service, but that has happened more in other parts of the country than in the South. But I think even in the South the feeling is growing that forestry is a profession and that state forestry organizations are not supposed to be in politics, although that was the situation in the earlier days.

ERM: And does this spoils system in state forestry still exist in certain states?

ELD: Possibly to some extent, but it's getting less and less; most of the state foresters now have pretty steady jobs.

ERM: We talked a little earlier about some of the lumbermen of the South who showed leadership in this whole trend, among them Henry Hardtner and Colonel Sullivan. Do you recall anything more about either one of these men that you would like to set down for the records?

ELD: I knew Henry Hardtner very well personally because he was chairman of the southern station's research advisory committee, and he used his personal influence with southern leaders, organizations, and members of Congress to promote research programs and forestry in general. He often asked the station to help him prepare statements that he could use in promoting forestry in both public and private forestry fields. I imagine I saw Mr. Hardtner almost as often as any forester did. Since he was chairman of our advisory committee consisting of

about twenty-five leading businessmen and educators from all parts of the South, he was in a key position to promote forestry.

I recall in those early days one of the federal forestry programs that was proposed along in 1926, 1927, and 1928 was the McSweeney-McNary forest research bill in the U.S. Congress.* This was legislation that would place forestry research on a sound basis with increased authorizations over a ten-year period. Mr. Hardtner was very much interested in promoting this legislation, so I obtained the basic information for him, and he used it where it would be most helpful. I know of no proposed forestry legislation that had less opposition and proved more valuable to the whole forestry movement at that particular period.

I didn't have as much contact with Colonel Sullivan of Bogalusa, Louisiana because he was not as approachable as Mr. Hardtner, nor did he seem to have as much personal interest in the promotion of forestry. Mr. Hardtner owned the Urania Lumber Company and wanted to leave something to his family. Also, he wanted it to be a monument to the progress of southern forestry. Colonel Sullivan was the general manager of the Great Southern Lumber Company. He probably had some financial interest in the company but was not a principal owner. At times I thought that his interest in forestry was more window dressing than a really sincere interest in the future of his company. I did not find him very approachable; he was a "big shot" and to him I was probably just one of those long-haired technical foresters whom he considered more theoretical than practical.

However, Colonel Sullivan did have a lot to do with promoting a forestry program at Bogalusa, and he got many of his ideas from Mr. Hardtner. His company owned a large property mostly in virgin longleaf pine timber. The logging was done with steam skidders and railroads, so after an area was logged there weren't many trees left. In order to do something with their cutover land they either had to offer it for sale or hold it and plant it. They finally decided that the only way to raise another crop of timber on much of that land was to plant it. They did cooperate with the Southern Forest Experiment Station, however, to the extent of setting aside areas on which to carry on experiments, and they did take on a technical forester, Paul Garrison.

ERM: You say they set aside land on which to carry on experiments. Was this cutover land?

ELD: Yes. They didn't give us the land, but they allowed us to use it.

ERM: And did you pay the costs of planting or did they?

* McSweeney-McNary Act of 22 May 1928 (45 Stat. 699).

ELD: As I recall, the company furnished the planting stock, and the work was done under our supervision. The Great Southern Lumber Company had a forest nursery. J. K. Johnson, a nontechnical forester, operated the nursery and handled their early forestry work. That developed into the largest forest nursery in the South. Many difficulties arose in connection with the nursery, and the station helped on many of those problems, so we did have a very close liaison with the Great Southern Lumber Company people connected with the forestry program. But we didn't have a direct tie-in with Colonel Sullivan as we did with Mr. Hardtner. You could go in and talk to Mr. Hardtner about his forestry program and about forestry in general.

I'd say that in Louisiana they were the two lumbermen who were the first to show an interest in forestry, but there were several others connected with the lumber industry throughout the South who were also pioneers in forestry. These men had been contacted by Dr. Cary, Professor Chapman, and others.

ERM: Who were some of these men?

ELD: They included men like Alex K. Sessoms, president of the Sessoms Land and Timber Company in southeast Georgia. He was a neighbor of Cap Eldredge when he was at Fargo, Georgia. Sessoms owned a considerable area of forest land and was interested in both cattle and turpentine operations. He was in an area where forest fires were relatively frequent, and he recognized early that it was necessary to protect the land from fire if forestry was to be practiced. He also offered the Forest Service any of his forest land for research purposes and some of our studies were located there. He was just one of several men like that.

Colonel John Allison of the Allison Lumber Company in west central Alabama was another man who believed in forestry in principle, but he didn't know enough about what was required because he had no technical forester. However, he was sold on the idea of cutting lightly, primarily because he had an interest in hunting deer which exceeded his interest in forestry. He knew that in order to have good conditions for deer and other game he had to maintain a forest cover, so in all of his timber harvesting operations a good stand of trees was left and the forest was protected from fire.

Old Colonel Allison put on a hunt every year and invited all his friends to come. His forest was in the loblolly-hardwood type where the light cutting proved to be fairly good forestry. The small and medium-size trees were left to grow for the future and just the larger trees were harvested. Even today that is one method of forest management that is successful in certain timber types.

ERM: Do you remember any of the companies in east Texas that were important in the early days?

ELD: Yes, one of the companies in east Texas which showed an early interest in forestry was the Southern Pine Lumber Company with a sawmill at Diboll, Texas. Also, Earnest Kurth at Lufkin. But most of these outfits were in the lumber business, and rapid progress in forestry did not come about until the pulp mills expanded so greatly in the thirties.

ERM: What brought the pulp companies in here?

ELD: There had been a few small pulp companies operating in the South for many years, but I suppose that there was not the demand for the type of paper they made—kraft wrapping paper and boxes—until the late twenties and early thirties when more and more packaging was in the form of paper boxes because they were cheaper and better than wooden boxes. As the market for paperboard boxes expanded, it was found that southern pine was an excellent wood to use in making paper by the sulphate process. The work of the Forest Products Laboratory at Madison showed that southern pine made a superior kraft paper, and because the cost of wood in the South was low and labor conditions were good, when the market expanded the men in charge of the paper industry in the North and the East began looking into the possibilities of coming to the South.

One of the biggest spokesmen for the pulp and paper industry in the South at that time was Dr. Charles Herty. Herty was very familiar with the work of the Forest Products Laboratory. He was trained as a chemist and had worked for the Forest Service in the early years in the naval stores field, where he had developed the use of the clay cup for turpentining. He himself was a native of Georgia and was very familiar with many of the forestry problems down here and also wanted to do something to improve the South's economy. But his primary idea of promoting the paper industry in the South was through the production of newsprint, and he talked more on that subject than about any other kind of paper. However, the paper industry itself soon found that the South was an ideal location for making kraft paper for boxes, although one or two companies became interested in producing newsprint. The United States was largely dependent upon Canada for its source of newsprint, and the cost of shipping newsprint from Canada to the South was pretty high, so Herty worked with the Southern Newspaper Publishers Association and got their support for a newsprint mill in east Texas. That was one of the first paper mills to locate in east Texas—Southland Paper Mills of Lufkin, now producing newsprint. There's enough of a market right here in the South to take the output of several newsprint mills right now.

ERM: Is the Southland Paper Mills, Inc. owned by the newspapers?

ELD: I think it's owned jointly, although Ernest Kurth had a lot to do with helping to get it going. But he couldn't have done it all by himself; he had to have the backing of

southern newspapers themselves. Before any new mill comes into the South to make newsprint, it is essential to have contracts lined up for a number of years ahead. Most newspapers, of course, have long-term contracts for their newsprint supply. I'm sure that companies like Bowaters in Tennessee and International Paper in Mobile and Natchez, which are also making newsprint, had their output contracted for years ahead before they even started mill construction.

So although Herty talked a lot about making newsprint, actually the big development in paper in the South has been by the sulphate or kraft process. Now the South dominates this field and produces about 60 percent of all kraft paper in the country, whereas when I first came south, probably only 1 or 2 percent came from down here. It was the coming of these paper mills that gave southern forestry the boost that it needed. It opened up a market for small wood material taken out in thinnings and for the tops and larger limbs of trees cut for sawlogs that theretofore had been left out in the woods to rot. So actually the pulp and paper industry was built largely to use material which had previously been wasted.

Just in the last few years there has been another significant change. The pulp mills are now contracting to take the residues from sawmills in the form of slabs and chips, and this now makes up quite a sizeable part (more than 10 percent) of the total wood material that goes into making pulp. It has been found that the quality of the pulp made from sawmill residues is better than that from the round pulpwood coming into their mills. The reason for this is that the quality of wood for pulp improves as the tree grows. Small trees of rapid growth rate have a lower wood density, or less fiber per unit of volume, than do larger trees. So the slabs and residues from the outside of the tree really make the best material for pulp. Using these residues has proven to be a good thing, not only for the pulp mills which obtain that material at a reasonable price, but also for the sawmills which now can sell material that previously had to be burned or hauled away.

ERM: Along with this there has been a great trend toward consolidation and integration of industry, has there not?

ELD: Partly. Many of the old lumber companies that owned large areas of land put up their sawmills with the idea of abandoning them when the timber was cut out; they had no connection with the pulp and paper industry. However, a few of these lumber companies, such as the Great Southern Lumber Company in Louisiana, Crossett Lumber Company in Arkansas, and the Camp Manufacturing Company in Virginia, anticipated the opportunity for pulp and paper developments and established pulp mills of their own. Of course, the Great Southern Lumber Company went out of existence and was absorbed by the Gaylord Container Corporation and then later by Crown Zellerbach. The big sawmill in the south is a thing of the past. However, at Crossett they still have

two large sawmills and also a pulp mill which makes for a fully integrated operation. The same is true of the Camp operations in Virginia. But by and large, the big, old sawmills have gone or are on the way out.

The southern lumber industry still exists and is always going to be here, I'm sure, because we are always going to need lumber, but these mills are relatively small. In the future we are going to have closer integration between the lumber and the pulp and paper industries with the two exchanging some of their raw materials. The pulp mills will sell or exchange some of their sawlogs to the sawmills, and the sawmills will provide material to the pulp mills from their mill residues and wood waste. They trade back and forth even now. A lumber company that owns a little timber will agree to sell the thinnings and the tops to the pulp mill, and the pulp mill will sell some of its sawlogs to the sawmill. So it works to the benefit of both industries.

I would say that the coming of the pulp and paper industry to the South was the boost that the South needed to promote a real forestry program because it offered an outlet for much wood that otherwise was valueless. In the late twenties and early thirties when the pulp mills first came in, pulpwood could be had for twenty-five to fifty cents a cord stumpage. Then as more pulp mills were established and competition for wood increased, the price of pulpwood stumpage rose until now it is often five dollars or more per cord. That means that the timberland owner or the farmer with some woodland can now afford to invest money in his forest where before he couldn't. In the early days it was difficult to prove the financial advantages of practicing forestry when the market might not be available for twenty, thirty, or forty years in the future, and very few people are interested in what may happen that far ahead. The farmer, for example, wants to know what he is going to make this year or next year, at least. When he had no market for his trees or for thinnings or the tops of saw timber trees, it was difficult to encourage him even to protect his land from fire. Now by investing money in protecting his woods and in thinning his stands, he is able to obtain a regular income every year from his forest, whereas thirty or forty years ago you couldn't promise him any such opportunities. Here is where the pulp and paper industry has been a great boon to the South. Now, it's true that most of these pulp and paper companies came in from the North or were subsidiaries of northern mills. However, most local people were pleased to have new markets for some of their raw materials and an outlet for their surplus labor, and the industry brought more money into their communities.

ERM: It helped stabilize the economy in the South.

ELD: Yes. However, many of these pulp companies purchased pretty big areas of land which the owners were glad to sell because they got a fair price, and land values in some areas have more or less skyrocketed. It's now more difficult to block up

large areas of timberland at reasonable prices. Also, some local folks see that these companies are blocking up land so that there are considerable areas where nobody lives, and there is little or no farming.

However, most of the pulp companies are wide awake to criticism and are keeping their lands open for hunting, providing the people who still live there with markets for their wood, and are taking an interest in the local economy so that the people feel they are part of it. But there have been occasions when the local folks thought these big companies were getting too dominant and they have threatened to up their taxes. So there have been difficulties at times because many of these companies are more or less outsiders.

ERM: Is the Southern Pulpwood Conservation Association an endeavor to ameliorate this feeling among the local people?

ELD: That was one of the reasons for organizing this conservation group.

ERM: When was that group organized?

ELD: That was done in the late thirties. Among those who had the most to do with that were Walter J. Damtoft and Frank Heyward, the first manager of this group.

ERM: Frank was in on the very beginning, the formation of the idea?

ELD: Frank had something to do with it although it was primarily an industry undertaking. He was state forester of Georgia at the time and when this organization was set up, they asked Frank to head it up. However, the idea started long before that. It started back in the days of the National Recovery Administration with the adoption of Article X of the Lumber Code. That got many of the lumbermen and pulp people to thinking about practicing forestry because of the threat of public regulation of timber cutting practices, so they voluntarily agreed to abide by some simple rules of forestry. Even when NRA was thrown out, these southern timberland owners continued through the Southern Pine Association and the southern hardwood group to work toward the simple rules of forestry practice that had been recommended by the technical foresters and that seemed reasonable to adopt. However, public opinion also had something to do with the setting up of this conservation association because many examples could be found throughout the South of clearcutting by the pulp companies. A company would buy up a man's timber and cut it all off, evidently figuring that they wouldn't need to come back there again as there would be other places they could obtain their future supplies. However, many people didn't like to see those barren areas, and this conservation association was set up to help educate people to cut their timber according to good forestry principles and to help them select trees for cutting, leaving the basis for a future forest.

ERM: Didn't that require a change in company policy because they were, in a sense, the people who were doing the clearcutting?

ELD: They or the contract loggers who sold logs to the company. It didn't make any difference whether the pulp company was responsible for it or not—they got the blame. Even if the company obtained all their wood through some middle man and that middle man went out and skinned off a piece of land, the company would be blamed. In the long run it was to the advantage of the industry to see that good forestry was practiced. They did practice forestry, of course, on their own land, which was just good business; but they also found it good business to encourage others to do likewise. A pulp mill represents a huge investment and once it is established, it is expected to continue in business for a long time.

None of the paper companies planned to purchase sufficient forest land to meet their own needs for pulpwood indefinitely. I think the usual practice is to own enough land to meet around half of their needs and the balance of their wood requirements they expect to get from their neighbors. They want to keep on good relations with their neighbors, and they also want a permanent supply of pulpwood, so if they clearcut their neighbors forests, they will not be able to get another harvest of wood there for a long time to come. For that reason pulp mills give away many thousands of tree seedlings to their neighbors every year and employ conservation foresters to work with the landowners to show them how to cut their timber conservatively. Companies have been doing a fine job in that respect. I want to compliment Frank Heyward, in particular, as he helped get that work going and also Henry Malsberger who is carrying it on at the present time.

ERM: Do you think that is really one of the most significant and outstanding contributions that has been made in recent years to southern forestry?

ELD: It's a major contribution and one that the southern pulp industry can point to with pride. Now, it's true that the pulp mills have no compulsion over whether a man practices forestry or not. All they do is offer their services to help him in showing him how to practice simple forestry. If he still wants to have all his timber cut off, he can do so—it's his own land. It has been argued that for the good of the country all timberland owners should be compelled to practice simple measures such as fire protection and leaving the land in shape to grow another crop of trees. But, you know, people don't like compulsion; they don't like to be regulated and told what they can do and what they can't do, even though it will be good for them and in the public interest.

There may be times when a man has to clearcut his forest. He needs the money. There's nothing wrong with clearcutting if provisions are made right away to get another stand of timber on the ground by replanting. In fact, that is one method of

practicing forestry—by clearcutting and planting. But some owners just clearcut, and the land stays there for years and years without ever coming back to a good timber stand. Now, that harms not only the owner, but it reacts on the community because it takes land out of useful production. That is why the pulpwood conservation group and the public foresters and other conservation–minded people are trying to promote keeping land in production.

The Forest Survey has shown how much forest land is understocked as to trees and how much forest land is in good shape. Every Forest Survey that is made, and there have been several resurveys, indicates that the forestry situation is getting better all the time. It still isn't what it should be, but forestry conditions are improving in the South right along.

ERM: Your 1940 report of the Southern Forest Experiment Station also states that the work of the station was starved for want of adequate funds. This, you reported, was still true even in 1940, nineteen years after the station was opened. The recognition of the need for accurate, basic, forestry information was very slow in coming. Why was this the case?

ELD: I don't think there is any secret about it. Not very many people are interested in research as such. Take a big outfit like a chemical company or a steel company—they know that research is necessary to keep up to date, to keep up with their competitors, and to improve their product. But in forestry it's somewhat different because there are millions of owners of timberland and growing a crop of trees is a relatively long-time proposition, so the need for forest research is something not many people get excited about. Timberland owners would like to know how they can make more money out of their timber, but they are not too much interested when the final results may not be available until twenty, thirty, fifty years hence. Forest research, by and large, is expensive and a long-time proposition, so that's one reason why public agencies almost have to do it. Most timberland owners can't do much about research, especially small owners because they haven't the facilities. A large forest products industry, of course, is interested in research to improve and keep a check on the quality of its products, but any research it might do in forestry matters is going to be kept pretty much to itself. It isn't going to broadcast to its competitors what it has found. So the public agencies have a great responsibility to all the landowners, including the big ones, in the field of forest research.

ERM: Just as it has in agricultural research.

ELD: Very similar to agricultural research. And that is why the first forest research efforts in this country were started by the federal government. Of course, now many of the forestry schools and universities carry on phases of forestry research and that's fine. Some of the big wood-using industries are also doing forestry

research, but they are in it, for the most part, to improve their products and to cut costs. And they, of course, use the findings of the research work of the federal government and other agencies doing research.

ERM: Of course, industry is doing a lot of research in the matter of logging methods and transportation, which they freely exchange at their meetings.

ELD: Yes. That's a little different; it doesn't concern directly the manufacture of a product, but it does affect costs. It has to do with the harvesting and transporting of the raw material. You can't keep a secret there very long because when you develop new types of logging or milling machinery, somebody has to manufacture it; and if they are going to manufacture for you, they are going to manufacture for somebody else, too. That is a field in which industry can carry on very worthwhile research, and they are doing it to some extent. But when it comes to developing better methods of growing and reproducing forests and studying the relation between forests and stream flow and water supplies, the solution of those research problems are largely the responsibility of the public agencies.

ERM: There was some degree of success out in the West in the first twenty-five or thirty years of the century in getting private landowners to do something about the problem of fighting fires. There seems to have been a little more success out there than there was here in the South. Now, have you any insight as to why that was? I am thinking of such things as the state fire protection agencies, the Washington Forest Fire Association, and the Western Forestry and Conservation Association, all of which took a rather strong lead in fire-control work.

ELD: I think the reason for that is rather simple. Fires in the West were more spectacular and did a lot more damage to the timber than they did in the South. Actually, the forests in the South are rather resistant to fire, partly because forest fires were rather frequent in the South even before the first white settlers came. Indians used fire for hunting and keeping the woods open. Then when the white settlers came, they found that if there were no fire, the underbrush grew up and interfered with travel, so they burned to keep the woods open.

Then grazing came into the picture. Many of the settlers had cattle and found that by keeping the brush down by frequent burning, they were able to get earlier forage for their animals in the spring, and also it was easier to find their stock. Hunters didn't like to have the woods so overgrown with brush that they couldn't see far. For those reasons and others—including the control of the boll weevil, control of wood ticks and snakes, and the protection of turpentine operations from damage by wildfires—for all these reasons many people had used fire from early times. Frequent winter fires, when the vegetation was kept down, did not kill the larger trees. They did kill some of the little trees, but in those days little trees had no value; they were considered as part of the brush. Finally, burning the woods

became a custom and many people thought the woods ought to be burned over every year or two.

In some of our early forestry experiments the southern station tried annual burnings to compare it with periodic burning or no burning at all, and we soon found that annual burning was rather difficult to accomplish because there wasn't enough vegetation then to burn every year. Later on, when Chapman and others pointed out that the longleaf pine was actually helped by use of fire, we changed our thinking. Today there are very few places in the South where all fire is excluded—except in the hardwood forests where fire can do a lot of damage. There fire wounds the tree, and the disease gets in and may ultimately kill the tree.

But in the pine areas, once a pine tree gets up to fifteen or twenty feet tall and two or three inches in diameter even a light fire may not harm it. So now, instead of complete fire prevention, in many parts of the South it's the custom to use fire periodically after the trees get to a certain size, and such prescribed burning has become part of the whole fire protection system. Such controlled burning is done at a time when it will cause the least damage to the trees and will keep down the underbrush, thus lowering the hazard from accidental or unwanted fires that may occur.

ERM: Now, this is under conditions where you have more or less even age stands of trees, is it not?

ELD: To begin with, yes.

ERM: In other words, you are not worrying about killing off new seedlings that are just beginning to come along, but you are desperately anxious to keep that same fire out of areas where there is nothing but young growth.

ELD: That's right, except in the case of longleaf pine where even a longleaf pine seedling one year old is rather fire resistant. When it's two or three years old, if there's no fire, it's very liable to get a needle disease which stunts or kills it; whereas using a light fire controls this needle disease and lets the longleaf develop. So the use of fire in the South now is as a fire protection measure, part of the whole fire protection system. We don't think of this as a forest fire at all; we just think of it as another tool in the practice of forestry. Forest fires in the South, even in the old days, were not the same as fires in the West or the North (I mean the ordinary winter fire through the pine woods), and for that reason it was very difficult to get people in the South to think of fire as an enemy of the forest as it is in other parts of the country.

ERM: It didn't have the dramatic quality that it had in the other areas.

ELD: Some fires here in the South can get so hot and do so much damage that they can wipe out a whole forest, but in order for that to happen the circumstances must be just right. You've got to have a high wind and very dry weather and lots of vegetation to burn. If you have an area that has been burned by a controlled fire, there isn't sufficient vegetation on the ground, even under severe conditions, to have too bad a fire. But the most damage from fire in the South is done by a relatively few fires that occur when the weather is dry and windy and when the flames will go into the tops of the trees. Now, those blow-up fires really do great damage, and occasionally we have conditions like that. How to predict those conditions and how to do something about them, how to increase the fire protection forces during those periods, is something that research men are still working on.

They are putting up a new fire laboratory in Macon, Georgia right now to work on some of those problems. Research, even though it learns something new every year, is still a relatively long-time proposition, and many people do not understand the need for continuing research for many years. However, there has been enough support for research so that most research organizations which were once financed on a shoestring are now able to carry on a continuing program.

My recent study for the Southern Regional Education Board indicated that the current annual expenditures for forest research in the South come to around $5 million; forty years ago it was less than $100,000 yearly, if that.

ERM: Now, Demmie, we previously made mention of the Southern Forestry Congress and the important role it played in the development of forestry down here. It had its first meeting in 1916 and its final meeting in 1930. Could you give a rundown on who its founders were and what it accomplished?

ELD: I wasn't around, of course, in 1916, and I don't know nearly as much about the Southern Forestry Congress as a man like R. D. Forbes, who for many years was its secretary. But I have an idea that the Southern Forestry Congress was organized by a group of people who wanted a vehicle to promote forestry in the South. The Southern Pine Association was a group of lumbermen and they had their own interests. But this Southern Forestry Congress was made up of all kinds of people—doctors, lawyers, public officials and other public-spirited men. It was kind of a mixed group.

ERM: Do you think that the American Forestry Association had any part in setting this up?

ELD: I don't believe so, but their aims would have been similar. In fact, the Forest Service favored it, I know, and may have helped stimulate its formation. I'm not sure. I know that these Congress meetings were arranged periodically. They

weren't held every year, but at times and places where it was thought they could be most helpful in promoting forestry in a particular area. I attended maybe three or four of them, that's all. After state forestry organizations had been set up in each of the southern states, evidently the group behind the organization felt it had done what it had set out to do and just disbanded. So far as I know, they never had any dues and the only continuing officer was a secretary. That man was Forbes in the early years, and later W. R. Hine, who was the state forester of Louisiana, served at the final meetings.

ERM: Were they paid personnel or volunteer?

ELD: They were voluntary, but their organization allowed them to serve in this capacity, just as I could serve as president of the Society of American Foresters while I was director of the station here. I looked after the Society duties after office hours usually, but occasionally I could go to a meeting and represent both organizations.

ERM: What part did the newspapers and other media of public information down here in the South play in the development of forestry in this region?

ELD: The newspapers, by and large, considered forestry just as anything else—any topic that was of interest locally they would play up. They always gave good publicity to local events, and some of the newspapers, particularly where the man at the head of it was conservation minded, went even further. One of these men was Tom Wallace of the Louisville newspapers. He had a real interest in forestry and was one of the leaders in the Southern Forestry Congress although he was a newspaper editor. Of course, newsprint came from the forests, although it mostly came from Canada. Mr. Wallace was keenly interested in the development of this section of the country, so a few newspaper men like him attended conservation meetings and got behind the forestry movement.

I would say that the best publicity given to forestry in the South was through the *Southern Lumberman* and the *Lumber Trade Journal*. These were separate organizations; they were trade journals. Although separate for many years, later they combined and continued as the *Southern Lumberman*. Now, there were other trade journals, such as the *Southern Lumber Journal* in Jacksonville, the *Gulf Coast Lumberman* in Texas, the *Hardwood Review*, and the *Naval Stores Review*; and there may have been others, but the main one to promote forestry was the *Southern Lumberman* at Nashville, Tennessee. That trade journal and the *Lumber Trade Journal* before it both carried considerable information on forestry and promoted it wherever they could.

ERM: In other words, they had an influence on the owners of timberlands.

ELD: They really did, although they were set up in the beginning just to serve the lumber industry, you might say, and as a medium for discussing their industry problems. Forestry was not in the picture in the early years, but as it came along and as they had opportunity to promote the literature of forestry, they always did so. They often sent representatives to forestry meetings and reported on the progress of forestry in the South. The *Southern Lumberman* in its Christmas issues of the last fifteen or twenty years has devoted a big part of these issues to papers concerning forestry. I know that men not only on the staff of the southeastern station, but of the southern station and the Forest Service administrative organization in Atlanta have contributed many papers to the Christmas issues of the *Southern Lumberman*. The Forest Products Laboratory men have, also. That material was widely read by the large timberland owners and operators.

ERM: It is widely read, you feel?

ELD: It's very widely read and very well thought of, so that an article on forestry that appears in that journal will get better distribution and be read by more people who can use the information than an article published by the Forest Service which is distributed to a more limited audience. The more technical articles, which were too technical for those trade journals, went to the *Journal of Forestry*; and that journal, of course, has widespread distribution among foresters.

ERM: In other words, the editors and the publishers of these journals have had quite a substantial influence.

ELD: They had a great influence, and I can say that Stanley F. Horn, editor of the *Southern Lumberman,* and Mr. James Boyd with the *Lumber Trade Journal* were as good friends of forestry as you could find outside the profession. They really believed in it.

ERM: Theirs were the two outstanding contributions in the editorial field, you would say?

ELD: I would say those were the two, although the *Southern Lumber Journal* and the *Gulf Coast Lumberman* also were interested.

ERM: Who were the men on these other journals, editors or publishers, who showed the greatest concern?

ELD: I think Ben Wand of the *Southern Lumber Journal* was one.

ERM: What about Jack Dionne over at the *Gulf Coast Lumberman*?

ELD: Yes, they are the two men, that's right. I didn't work with them nearly as closely as I did with Mr. Horn and Mr. Boyd.

ERM: During the 1920s there was quite a good deal of investigation of the need for forestry in this country, and part of this was the preparation of the Capper Report.* This came at a time when you were out of the country working as a forester in the rubber plantations in the Far East. However, since you came back to this country just about the time these things were winding up, I wonder if you have any first-hand recollections of the Capper Report or of the hearings that the national Chamber of Commerce held on national forest policy, or even, perhaps, of the senate hearings on reforestation of the United States which were chaired by the late Senator Charles L. McNary? Could you throw some light on them and how they were seen by professional foresters of the times?

ELD: As you say, they occurred before I arrived in the South, but I heard about them even when I was in the East Indies. I heard rumblings about the Capper Report and plans for new forestry legislation. Out of that came the Clarke-McNary law providing cooperative fire protection and closer coordination between the federal and state governments in forestry matters. That was all accomplished before I came south and, so far as I heard, it was all to the good. All those discussions were necessary in order to sell the public on the need for forestry. It established the federal government's responsibilities as well as where the states fit in.

ERM: Was this all part of a conscious strategy on the part of certain leaders of forestry to build a bridge, let us say, between what had been sort of warring elements in the community—for example, the government forestry people, federal and state, and industry? Was this all a part of a strategy to bring these groups back into some more harmonious consideration of their relationships to one another in the practice of forestry?

ELD: Of course, there wasn't much practice of forestry in those days; it was mostly talk. But the question was how to get forestry implemented, whether through federal regulation or through cooperation. One group said, "We'll do it by cooperation," and the other said, "We'll do it by regulation." Well, the cooperators won because the Clarke-McNary law is a cooperative forestry act. I really wasn't around to get all the implications of that fight, but I know that both sides were working for better forestry and to get forestry going, and each thought that they were right.

Now, when it came to forest research, there wasn't so much argument as to who would do it, although when the McSweeney-McNary bill was enacted, it was

* *Timber Depletion, Lumber Exports, and Concentration of Timber Ownership*, June 1, 1920, commonly known as the Capper Report. Revised in 1931 and retitled *The Forest Situation in the United States*. Both were reports made to the U. S. Senate.

mainly a federal bill. But it provided for cooperation, and more and more the forest research program of the federal government has been carried out on a cooperative basis. It started out as strictly federal because nobody else seemed interested. Nowadays, however, through the cooperation of the Forest Farmers Association, which represents many landowners throughout the South, and the cooperation of the southern forestry schools and some of the big lumber and pulp companies, a good share of the current research work is on a cooperative basis. That was provided for in the law, but it wasn't spelled out as to just how much cooperation there should be. I know that just in my time forestry research has expanded greatly because of cooperative efforts. As I told you a little while ago, each of the southern experiment stations had a research advisory council made up of men like Henry Hardtner and Colonel Sullivan and others who were interested in the widespread development of forestry.

ERM: These were leaders in the community?

ELD: Yes. There were some railroad executives, a state forester or two, and a banker, a dean of an agricultural college, and a president of a university—men like that. But nowadays most of the research is carried on with the aid of local research advisory councils, serving each of the work centers I told you about (research centers of the federal government), and also serving to coordinate the research in each particular area.

ERM: So there is as little overlapping as possible?

ELD: Yes, to avoid duplication and also to guide the federal research programs so they will best serve the interests of those who are using the results of the work. There are about sixty-five research centers in the country now.

ERM: Is there an overriding advisory council that looks at it from a total regional point of view?

ELD: There's a national forest research advisory council to the secretary of agriculture, who appoints the council, and they meet annually. The last meeting they had was held down here in the South as a field trip. It was the first time they had ever visited the field as an advisory group. They have two or three members from the South, but they also have members from other parts of the country. Now, there is at the present time no regional forest research advisory group for the whole South. As you know, there are two stations here, and in each of these stations the territory is so big that it would be difficult to find a group to consider adequately so many different kinds of research. There are seven or eight different fields of research at each station, and no one man is competent to look critically at all these different lines of research. So I guess it's best to carry on with local research advisory groups.

ERM: And there is bound to be a certain amount of overlapping between two big districts or areas like this.

ELD: A certain amount of overlapping is all right. In fact, a little duplication is all right as long as it is known that there's some duplication. The men working in different areas of forestry can now get together and talk over their problems, and one of the best places is at the section meetings of the Society of American Foresters and through the various chapters.

ERM: Who would you say were the real architects of the Clarke-McNary and the McSweeney-McNary acts?

ELD: I was not around when the Clarke-McNary Act was being discussed, but I am sure that Colonel Greeley had a lot to do with it. I am more familiar with the McSweeney-McNary Act, and I would say that if any one person were responsible for that piece of legislation, if was Earle H. Clapp, who was made chief of forest research in the Forest Service in 1915. He spent considerable time outlining the need for basic legislation to promote forest research. He drew up the outline for such an act with the help of various organizations and with the close collaboration between Senator McNary, who had a deep interest in forestry, and Congressman [John] McSweeney of Ohio, who didn't know much about forestry but who recognized that this was a very important piece of legislation. I had an opportunity to talk with Mr. McSweeney about this legislation in October 1954, and he told me that at the time it was enacted it carried the largest money authorization that had ever passed Congress under the unanimous consent provisions (where a piece of legislation is brought before the floor of the House and passed without objection). It passed without a single objection, and that speaks well for the work that was done previously in enlisting the support of every member of Congress.

ERM: Now, what were the mechanics of getting this approval?

ELD: No different than much other legislation that is enacted by Congress. Senator McNary and Congressman McSweeney had the help of the Forest Service in preparing the legislation for introduction. Then the two authors of the bill depended on public opinion throughout the country to support it. That support came through men like Mr. Hardtner and others, writing letters endorsing it and discussing it in meetings. It was widely discussed by many people, and they let their congressmen know that they felt this was important legislation that should be enacted. Evidently such a good job was done throughout the country that the legislation went through in record time. Although I think it was first introduced in the fall of 1927, it passed in the spring of 1928, and it is very remarkable to have major legislation enacted in such a short time. Then it was signed by President Coolidge. But the fact that that legislation was enacted didn't mean that the

money was available. The law authorized these appropriations, and the authorizations were spelled out in each part of the bill which stated that a certain goal was to be attained in ten years; then it was up to the future congresses to provide money for those items. If this legislation had not been enacted, forest research would have been held back many years.

ERM: In other words, this is what gave forest research its real boom.

ELD: It was the biggest thing that ever happened to forest research and, as it turned out, it was not just federal forest research that benefited because the federal forest research program acted as a primer to others. Many of the states got interested in forest research, and in one way or another they assisted by loaning manpower or getting funds from state legislatures. Even now there are two state legislatures in the South that have provided money for research that goes to the federal stations for work that is being done cooperatively in those states. Now, that's remarkable.

ERM: Did the McSweeney-McNary Act provide matching funds with it based upon the same principle?

ELD: No, it just provided that the federal funds could be supplemented by others, but it was entirely federal. The Clarke-McNary Act was a cooperative act, where the federal government and the states worked on a cooperative basis, each providing part of the funds.

ERM: But not McSweeney-McNary; that was purely a federal process?

ELD: Purely federal, but it provided for the use of cooperative funds. Nowadays some of the federal funds are used to stimulate research by other people. For example, the southeastern station allots some if its funds to help North Carolina State College initiate research that is primarily their project. They contribute most of the manpower, but the station provides funds to get it going. Now, that's cooperation.

ERM: This all came about at the time that Greeley was chief forester, didn't it?

ELD: Greeley was chief forester until 1928. Then came Robert Y. Stuart, who was friendly to research, and Mr. Clapp was one of his right-hand men there.

ERM: What would you say was Greeley's importance as a forester in this whole story? How important do you rate him in the whole story of American forestry?

ELD: Well, I rate him right at the top along with Pinchot and Graves. He worked with both of them and followed right along. Of course, he may have looked at things a little differently than they did, but the objective was the same—get forestry into

practice. He was particularly interested in getting other people like the private timberland owners to do things; he wanted them to cooperate with the state and federal governments. Some of the chief foresters might have preferred that the federal government took more of the lead, but in a democracy we may get farther in the long run through cooperation than through force. I think that was Greeley's main contribution—carrying on and promoting forestry as a cooperative effort. Now, that may have been somewhat slower, but in the long run it probably got us farther.

ERM: Would you say that perhaps Greeley had a more profound impact on the development of forestry in this country than either of his two predecessors, as far as it has evolved to the present time?

ELD: Well, I wouldn't say that because these men worked at different periods. They were all leaders and they were all big contributors to the progress of forestry. They were the first three chiefs of the Forest Service, so without any one of them we probably wouldn't be as far along as we are.

ERM: Each one, in his own time, provided very important leadership to the whole movement?

ELD: That's right. Each provided what seemed to be needed at that particular time.

ERM: In the beginning Pinchot was the great organizing genius and the mobilizer of public opinion who gave forestry its first real recognition here and who launched a federal program and established the national forests themselves.

ELD: He didn't do it by himself, but he was largely responsible for it. Much was due to his friendship with Theodore Roosevelt, who was a great conservationist and through whose efforts many national forests were established that otherwise wouldn't have been.

ERM: What was the importance of Graves in the total picture? He came on in 1910 when Pinchot was booted out by President Taft. What was Graves's importance?

ELD: Graves carried on the principles that Pinchot had laid down. He had been Pinchot's right-hand man, so he just took over and carried on. He was a very scholarly gentleman, well educated, and probably the best man we could have had at that time.

ERM: In other words, he held the line, in a sense, in the time of trouble.

ELD: Even though Pinchot was out, the spirit of Pinchot kept going. The organization that Pinchot had set up was imbued with his principles and Graves was the leader that kept it going.

ERM: It has been said to me by others who were in the Forest Service at this period that the Forest Service had had a phenomenal growth within the Department of Agriculture up until Pinchot left, and then for a period of time it suffered. It was sort of in disgrace with the secretary of agriculture; the budget was not increased and the work did not develop at the same rate as before. And it wasn't until the 1920s that it broke out of this condition.

ELD: That may be. But, of course, along came the First World War. I was at forestry school until 1916, and we were taught that the federal government was the principal forestry agency in this country. It was the only agency to hire foresters and if we didn't like to work for the federal government, there probably wouldn't be any forestry jobs for us. There wasn't much talk in those days about private forestry. In fact, the forestry books we studied were based on European forestry where there was very little private forestry. So I guess we had to go through that period, really, before the climate for private forestry developed. That didn't really happen until after the war. In this country old-growth timber did not represent the cost of growing forests right from the beginning; it was something taken over from nature. The owners may have bought timberland for five dollars an acre, and yet it might have cost one hundred dollars an acre to replace it.

Even yet in the Pacific Northwest there is virgin timber that must be harvested before one can really practice forestry. You can grow more timber under forest management than you can through nature alone. When you start with what nature put there, you can't really practice forestry immediately. You've got to harvest that crop and leave enough trees to reseed the area, but you've got to go through a certain period of liquidating the virgin forest and that's what happened in America until the twentieth century. We had a surplus of timber.

People didn't think much about timber shortage until early in this century, and then there was a lot of scare talk about running out of timber—some claimed there wouldn't be any timber in a few years. Well, those alarmists went too far. They didn't know enough about how rapidly timber could grow, so it needed a research organization to get the facts. They couldn't rely on Europe because conditions there are entirely different. Forestry in this country had to develop as an American institution, and we had to learn about our trees, what they were best suited for and how best to reproduce them, and that has come through research. The real contribution of research has been to get at the facts. Now nobody questions that the facts are essential before one can develop a real forestry program.

ERM: Well, Demmie, the real growth of southern forestry came in the thirties, as you have recounted earlier, and this came at a time of a great economic depression. There was the Copeland Report that came early in that period. This was something that you had perhaps some part in or some recognition of because you were in the Forest Service then and making reports, I am sure, that became a part of that report. What would you have to say about that particular stage of things and its influence upon southern forestry?

ELD: At that particular time there were many theories about where we were headed and where we should be going in forestry. Nobody had all the facts, so the Copeland Report was prepared by the Forest Service, at the request of the Senate, to review all that was known at the time—how much timber we had, where it was located, how rapidly it was being depleted, what the future promised, and whether the federal government should take the lead or whether to leave it primarily to the states or private owners. So this Copeland Report, the name of which is a *National Plan for American Forestry*, was prepared with the help of the entire Forest Service. Each individual unit of the field service was given the job of compiling what information was available on the situation in its particular area, such as how much timber was left, who owned it, what the growth rate was, and so forth. That was based on the best information we had at the time, but we were handicapped greatly because there had been no Forest Survey. The Forest Survey was just getting really started. All this information was assembled in Washington just before [Franklin D.] Roosevelt came into office, and Earle Clapp had the responsibility for rounding up this information and seeing that it was put together.

The report was prepared just before Roosevelt came in, but it was not published until April 1933 after Roosevelt had been inaugurated. This report recommended a huge expansion in federal forestry in the area of national forests and also in providing overall fire protection, a large planting program, and everything that was deemed necessary to improve our country's forestry situation. The report proved very valuable from the standpoint of being a compendium of information on the forestry situation, and it contained a world of historical facts. It covered the historical development of state forestry, private forestry, the forestry schools, and forest research right back to the beginning. It came at a time when it may have had some influence in getting the CCC program under way, and Article X of the Lumber Code and other programs that were being discussed in those days.

Many of the recommendations in the Copeland Report, of course, could not be implemented because they assumed too much domination by the federal government, such as a huge federal land acquisition program. Actually, the federal government had purchased considerable land for national forests in the East in the early thirties and was to acquire more under the CCC program, but the estimates for federal forest acquisition envisioned by the Copeland Report were

entirely unrealistic for our way of life. The federal government could undoubtedly improve on the forestry job it was doing at that particular time, but the big task was to induce the private landowner and the private industry to do a better job. However, I think the Copeland Report did a lot of good in stimulating people to think more about American forestry problems, and it also stimulated Congress. Even in the middle of the Depression it made people think about "Where are we going in forestry and why aren't we doing more than we are? Why aren't we protecting more of our lands from fire?" We had had the Clarke-McNary law in effect for almost ten years and yet half the private forest lands weren't protected from fire.

ERM: Do you suppose this stimulated industry to get into the act and do more on forestry?

ELD: I know it did.

ERM: In other words, they were scared by it?

ELD: Industry men have told me that instead of taking a chance on the recommendations of the Copeland Report going through, they'd better do something themselves to promote a forestry program. Right along about that time came the NIRA [National Industrial Recovery Act] and Article X and that was the first time that many forest industry people became interested in what they should do in forestry. Many of them had just said, "Well, we'll just rock along until we're cut out, and then we'll move west and look for some more timber." But during the Depression many of these people who may have given only lip service before became really interested in doing something about forestry. Some hired foresters. The Southern Pine Association employed technical foresters.

ERM: That's interesting; they <u>hired</u> foresters. This was at a time when their business and their income was at low ebb, wasn't it?

ELD: Yes, but in order to carry out the NRA program they had to have some foresters.

ERM: But this meant they had to spend money that they hadn't previously been spending. In other words, they were adding to their overhead instead of diminishing it.

ELD: That's right.

ERM: Well, that again might lead one to wonder what motivated them to do this at a time like this? Was it again fear of government control?

ELD: Probably that, and also partly due to the fact that they saw there might be something to gain for their members. They had examples around, of course, like the Great Southern Lumber Company, which had pioneered in forestry and was starting about then to harvest some of the trees that they had planted only fifteen years before.

ERM: The "proof of the pudding" was there for them to see for themselves.

ELD: That's right. And people like Dr. Herty came along and told them what they ought to do, and he was speaking from the standpoint of what industry should do.

ERM: And some of the surveys were producing the concrete evidence that forestry did pay.

ELD: The trees were growing. People hadn't understood that before.

ERM: In other words, it was a combination of things. It was the result of research—Herty's and other research you were doing—the threat of federal legislation, the development of new industry such as pulp and paper.

ELD: The markets for timber were increasing even during the Depression.

ERM: The greater use of paper boxes and all that sort of thing, all these things seemed to combine in the thirties to give great impetus to the development of southern forestry.

ELD: And as these new pulp companies came in, they set a market for pulpwood and, of course, that was the payoff.

ERM: You've mentioned the Civilian Conservation Corps. What was the importance of the CCC to southern forestry?

ELD: Of course, the CCC was set up primarily to take unemployed boys off the streets and give them useful work, and in that respect it did a very good job. It took thousands of unemployed boys and got them out into the woods where they could do some useful work and learn something at the same time. This forest conservation program interested the boys, and also their families, in forestry, and it received a great deal of publicity all over the country. Many people heard about forestry who had never heard of it before. I would say that the CCC program really gave forestry a boost it couldn't get in any other way. Of course, President Roosevelt himself was largely responsible because he had become interested in forestry when he was governor of New York state. He had had forestry experience on his own land at Hyde Park, so when the proposal was made to take unemployed boys off the street and put them on forestry projects doing physical

work, it appealed to him. And it was during that period that legislation which would help solve the Depression had widespread appeal.

ERM: Who was the architect of the Civilian Conservation Corps?

ELD: I don't know as any one man was the architect, but the Forest Service in Washington was for it, and Ward Shepard, who had been dean of the Harvard Forest School, had quite a lot to do with it. Nelson Brown, who was close to President Roosevelt's forestry program in New York state, may also have helped. Anyway, it was not a difficult program to sell because here was an opportunity to put men to work doing something useful that would benefit the country in the long run. Although some of the CCC work had little immediate value, it taught those boys something about conservation and forestry and was of direct benefit to many forest communities. There was a lot of public discussion of the program—generally favorable. I don't recall that there was very much opposition to it.

ERM: Well, very happily this seemed to combine conservation not only of the natural resources but of the human resource as well. The two had, I think, a rather double-edged appeal to people.

ELD: Something needed to be done, and the WPA didn't seem to be working out too well because many people on relief were doing things that were more or less useless, like raking leaves. But when forests were protected from fire or roads built that would develop a forest or fire towers erected, people could see that that might benefit everybody.

ERM: Your mention of WPA prompts me to ask you whether any of the other emergency relief organizations made any contributions at all to forestry?

ELD: Well, the NRA, of course, did a lot through the Lumber Code. I think that the discussions that came from setting up Article X of the Lumber Code did more to get the public representatives and the state and private folks together to discuss forestry problems than anything that ever happened before. Previous to that the foresters had been talking about forestry pretty much to themselves, and many of the private operators hadn't given it much thought other than that it might be all right for somebody else, but didn't apply to them. But during the discussions concerning the Lumber Code, it was necessary for representatives of the lumber industry and the state and federal foresters to sit around a table and get down to brass tacks on what could be done cooperatively to prevent deterioration of the forests and to provide for future timber supplies, even though the forestry measures were simple. Out of those discussions came some real progress and even though the Lumber Code did not last long as such, it stimulated the Southern Pine Association to take on foresters, and when the Code days were over, it didn't give up those foresters; they were kept on.

Many of the industries which had agreed to the provisions of the Code and had carried them out, began to see something in forestry, more than what they had heard before, and they continued an active interest. So I would say that the Article X of the Lumber Code really had a very beneficial effect on the progress of forestry; it got many people to do things that they might not otherwise have done. They also found that it was good business, so it may have speeded up forestry in the South by several years.

ERM: In other words, this whole New Deal period had a very positive and beneficial side as far as the future of the forest industries was concerned?

ELD: Yes, I think it did a lot of good. The CCC also contributed to the same picture. Before that many of the lumbermen had rocked along from year to year, trying to make a profit but not thinking too far ahead. At this particular period, though, they had to look ahead and they had to look ahead together. The only place that they could get real information of the forestry possibilities was from the technical foresters. To me it was very encouraging when old, hard-boiled lumbermen would sit down with us and discuss the future of forestry on their operations, how it was going to affect them, and many of them really put something into it. I was surprised at the attitude of some of the men who had never shown any interest in forestry before that. They even admitted that there might be something to forestry and they wanted to do something constructive.

ERM: Demmie, at that particular stage in our history, with a strong liberal trend running in government, with a liberal, Democratic president, Franklin Roosevelt, elected to office, and a strong Democratic Congress riding in the saddle, it seems almost amazing to me that a lot more radical legislation wasn't written in this period in regard to forestry. We've talked about how there were men in the Forest Service coming up to this period who believed strongly in the philosophy of force, forcing the lumber operators to do their wishes or follow the kind of forestry that they wanted to see practiced. And yet this element within the Forest Service did not seem to rise at this particular point in history. Indeed, quite the other seemed to obtain. Why was this? Why did this trend develop in the way it did?

ELD: Basically, we are a democracy and we had not long before gone through the experiment of the Volstead Act, not very successfully where force really didn't succeed.* In fact, it made many of us lawbreakers. I suspect that a lot of folks started drinking liquor because it was against the law. In forestry matters, however, I'm sure that some federal officials felt strongly that force was needed to make people do what was good for them, what they ought to be doing for their

*Volstead Act. Federal prohibition act passed in 1919, made provisions for the enforcement of the Eighteenth Amendment.

own interests as well as in the public interest. But, as a matter of fact, this may have been overdone. That is, the proposal for regulation of forestry was so strong that it alienated a lot of people, including many members of Congress.

ERM: And even including Franklin D. himself. He didn't seem to be at all eager to enforce restrictive laws.

ELD: As I recall it, he didn't come out one way or the other. If he had favored government regulation, maybe something might have been done about it. However, the threat of these restrictive laws had a very beneficial influence on forestry because many people considered that they'd better do something constructive or restrictive legislation would be forthcoming.

ERM: In other words, a little hell and damnation, or threat of it, is possibly a good thing once in a while.

ELD: I am sure that it served a purpose at that particular time in getting people to do things that they wouldn't have done otherwise, and then when they did them they found out they were all right. So now the best forestry is being practiced by the big landowners who know it is good business. To the small farmer timberland owner, forestry doesn't seem very important. He is primarily a farmer and doesn't think too much about timber unless he can sell it, so the best way to get farmers to practice forestry is through education and by showing them what their neighbors are doing in forestry and maybe setting up some examples of good forestry practices in the vicinity. Americans, by and large, don't like to be forced to do things. If they can be shown how to do something, or how they can have a better living or make a little more money by doing things in a little different way, they may do it. But we are still mostly individualists, by and large, and probably always will be.

ERM: Now, right along with this, conservation agencies were set up by trade associations. What were some of these and how did they function?

ELD: Well, the Forest Farmers Association, not exactly a trade association but a group of timberland owners in the South, set up an organization during the late thirties, probably to offset the threat of government regulation, but also to give them a voice in legislative matters and to further the cause of forestry. The same thing was done by the pulp and paper industry; they set up their Southern Pulpwood Conservation Association.

ERM: Yes, and we did cover that a little earlier.

ELD: The Southern Pine Association, of course, was mainly a trade association to promote markets and to better conditions pertaining to the lumber industry but

not so much from the standpoint of forestry. However, at many of the Southern Pine Association meetings forestry was discussed and they always, at least for many years, had an active committee on forestry. So, although forestry was not a prime objective, it still came into the picture, and many individual operators who belonged to the Southern Pine Association were very much forestry-minded, right back to the days of Henry Hardtner.

The hardwood industry was a little slower in getting interested in forestry, but they also have a forestry committee and are promoting forestry research by the federal government, really backing it. About the only southern trade association that has done very little in the way of forestry has been the Southern Cypress Association, and I can understand that because the possibilities of growing cypress profitably are very small, if not nonexistent. There's a very limited area where this tree is found in commercial quantities, and it grows so slowly that it offers no real opportunity for forestry.

ERM: Let's go back a bit again into the period of your Forest Service career. There was a time when the Service seemed to be concerned with the problem of making forestry pay, that is, to get around to the point where you could prove that forestry was a paying proposition. This seemed to have been the subject of a good deal of discussion in the twenties. Was this an idea that sprang out of the philosophy of the men who were themselves working in research within the experiment station, or did it come from some other sector?

ELD: The McSweeney-McNary Act provided for forest economics research to determine whether forestry pays or not and under what conditions, and along about that time the southern station took on a forest economist or two. Dr. E. A. Ziegler and A. E. Wackerman were two of them and Russell R. Reynolds, who later headed the research program at Crossett, developed into one. Burt P. Kirkland of the Forest Service office in Washington was another economist who helped the station develop an economics program. These men dealt with figures on growth and dollar values, and taxation also came into the picture. All these factors had been studied more or less piece by piece before, but along at that time, during the late twenties, we really got to studying whether forestry was profitable—analyzing costs, making time studies, and determining the costs of logging and milling, for trees and logs of different sizes. Out of that came, I think, some very useful information that tied right in with forest management. It may have paid to harvest a twelve-inch diameter tree, but not a ten-inch tree. Before that study we didn't have the information on costs and returns.

ERM: Would you say then that the development of a school of forest economics research sprang from the grass roots of the stations up, or did it come down from headquarters?

ELD: I think the stations realized that something like that was important, but we never had the funds for such studies until the McSweeney act provided for economics research. And the man who was in charge of economics was R. E. Marsh in the Washington Office. Under his direction each of the stations started some economics work. We used to have arguments as to where economics left off and forest management began because the two really go right along together. How can you carry on a forest management program if you don't know something about costs and returns? Well, at the stations economics and forest management were set up in two different groups, but those groups worked fairly closely together.

Nowadays we think of economics as just part of the whole forestry picture. After all, in this country we aim to make a profit and in order to make a profit we should know the costs of the different parts of the operation—how much it costs to plant, how much to thin, what one can afford to pay for maintenance, and so on. So right now, although that is economic information, we consider it as part of the whole forest management program. How are you going to recommend that a man do certain things unless you can advise him that it's going to pay in the long run? After all, people want to make money out of forestry.

ERM: Then this was something that was generated in a large part by Ray Marsh's leadership from Washington?

ELD: It came under his division. Up until that time most forest research in the field had come under the division of forest management, or silviculture, growing trees, and not too much thought had been given to costs. Oh, we gave some thought to it all right, but we never went into the real economics of it. The same way with taxation. What was a reasonable tax? How should forest properties be taxed? That comes under economics because, after all, it is part of the cost of timber growing. But it was only after the McSweeney-McNary Act came into being and funds were made available for economic studies that the Forest Service really got into this picture.

ERM: In finding out whether forestry pays or not?

ELD: And how much it costs to do different things. Nowadays we take it as a matter of course. In our forest management studies we determine how much time it takes for certain operations, and this can then be translated into costs because costs vary from time to time. What it cost to do something thirty years ago is entirely different from the cost today. And the value of the dollar is changing periodically, also. Economics is not static; it is something very dynamic.

ERM: This, I take it, is an area of forestry research which you felt rather much in sympathy with and which you gave opportunity for development right away in your own department, in your own station?

ELD: Yes, I think some of the earliest research developments in the whole country came at the southern station, while I was there. The economic studies developed at Crossett in cooperation with the Crossett Lumber Company—time studies and what we call cost studies—actually helped more to sell forestry than by just putting out figures on growth or forest reproduction. We called it the Financial Aspects of Forestry Project.

ERM: Before this time, of course, there had been several Forest Service timber surveys made, and out of these there emerged public pronouncements by the chiefs who had threatened a timber famine.

ELD: Those surveys were very superficial. They were probably the best that could be done at the time, but actually they were just guesses. We ourselves were surprised, after the first Forest Surveys had been made, to find that there was much more timber and that it was growing much more rapidly than we had supposed.

ERM: Do you suppose, or do you suspect, that the early surveys and the prognostications which were made out of them may have had some, well, if not political purposes, at least the purpose of perhaps trying to stir up some support for forestry?

ELD: They undoubtedly scared some people and then they also worked the other way. After the Forest Surveys had been going awhile and we found that the forest situation was not nearly as bad as had been stated a few years before, people would say, "Well, you've been crying 'wolf' all along and now the situation is much better than you thought it was." Now, part of the difference has come in the progress we have made in improving forest utilization practices. That is, we are utilizing more of the tree than we used to. We are growing more timber, also. Those early prognostications were made on the basis that we were going to continue to do as we had been doing; actually we are improving all the time. We didn't make allowance for progress in forestry and that was one of the shortcomings of the Copeland Report. It was based on the best information that we had then but which was later found to be incorrect. Of course, the Forest Service used it, I think, in good faith saying, "Here is the situation." Then when the Forest Survey had been completed in certain areas, it was found that things were much better than they had previously been reported. So when it was said that we were using timber four times faster than we were growing it, that statement was based on the best information we had at the time. We tended to be

conservative and painted the picture blacker than it actually was, and that was probably all right.

ERM: Isn't this just another evidence of human nature at work? We try so hard to sell an idea that we'll lean over backwards sometimes in using information which seems to support what we're trying to sell.

ELD: Particularly if we don't have the exact information. Then the survey has shown us what we do have and the situation looks better. Well, we don't like to admit that we made a mistake. Actually, some of those early estimates indicated we would be out of timber in ten or twenty years. That time never came and the reason is that trees grow regardless; even without any forestry we would still have some timber. We are going to have more and better timber if we practice good forestry, but those early estimates didn't plan for any improvement, so I'm rather optimistic about the future. Forestry may not be progressing as rapidly as many of us would like, but some progress is being made all the time, and if this can be done under our form of government—without trying to force it down people's throats—in the long run we are going to succeed in our efforts.

ERM: I heard Dick [Richard E.] McArdle make a speech out in Flagstaff, Arizona last fall in which he seemed to be quite disappointed with the progress that forestry was making at this particular time.[*] He took the view that in other areas of life—medical research, engineering, communications and things of that kind—mankind, and particularly our own people in America, were making fabulous progress. We were just making progress at an accelerated rate, but in the sphere of forestry our upward progress was at a very much slower rate. He felt that this was too bad because the demands upon the forest resource were going ahead at this fabulously accelerated rate, and our progress in forestry was not keeping pace with it.

ELD: I think that's in line with the Timber Resource Review that was published recently, indicating that we are going to need a lot more wood in the future than we will have unless we greatly step up our forestry efforts in this country.[**] I suppose foresters should never be satisfied with current progress; we ought to always be wanting to improve the forestry situation and to succeed we've got to work at it continually. These things don't just come naturally. People won't do some things unless they are convinced that it's the thing to do. And I can understand Mac's desire for more forestry progress than we seem to be making. However, I'm somewhat of an optimist; I think we've made pretty good progress in recent years, even though it isn't all that might be desired.

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[*] For more information see Richard E. McArdle, *An Inverview with the Former Chief, U. S. Forest Service, 1952-1962*, conducted by Elwood R. Maunder (Santa Cruz, California: Forest History Society, 1975).

[**] Forest Service, U.S. Department of Agriculture, *Timber Resources for America's Future*, Forest Resource Report No. 14 (Washington, D.C.: 1958).