

Oral History Interview With

Ralph Sheldon Hosmer

November 4, 1957

Ithaca, New York

by Bruce C. Harding

Forest History Foundation, Inc.

This interview is the property of the
Forest History Society and may not be
quoted for publication without
the permission of the Society.

The general outline of this tape recording will be as follows: family background, the pre-college years of Professor Hosmer, his undergraduate work at Bussey Institution and the Lawrence Scientific School at Harvard; U.S. Division of Forestry (Forest Service) duty, Yale Forest School, and then his Hawaiian service.

HARDING: Professor Hosmer, your family background has been pretty well covered by what you've told me before and in published works, but I would like to have the material available on the tape so that a researcher would know what to consult. Now, you have here the "Hosmer Genealogy--Descendants of James Hosmer of Concord, Massachusetts," by George Leonard Hosmer. (Cambridge, Massachusetts, 1928). George Leonard Hosmer you said was a professor where?

HOSMER: Massachusetts Institute of Technology in Cambridge. Geodesy was his line, and a textbook written by him was used for many years, in different editions, in schools of civil engineering. Professor Hosmer traces the Concord, Massachusetts line of the Hosmer family; one of the two American branches. An older brother had come in 1632 to Boston and then, very soon thereafter, moved to Hartford, Connecticut, where he established that line. Unfortunately, no good recent genealogy of that branch has yet been written. James Williams Hosmer, after a couple of years in Cambridge, Massachusetts, became a free man and moved to Concord and established our family there in 1637. Descendants of the Hosmer line are still living in Concord.

For a year or so James Hosmer lived a half mile or so further west than any one of the other settlers and was therefore the far western settler in that part of Massachusetts. Over at the other end of the state some of my maternal ancestors were a good deal further west, in Deerfield, but they didn't come there until a few years later--Sheldon--but we are of pioneer stock.

The Hosmer family came from Hawkhurst in Kent, England. Rather interestingly, I'm in correspondence now with a very distant cousin, a descendant of those who did not move to America but stayed right there in Kent. The Hosmer family during Colonial times were primarily farmers, having to take time out to fight Indians. Coming down through the generations, perhaps the most notable member is Joseph Hosmer, who was a captain of Minute Men, and on the day of the Concord fight on the 19th of April in 1775 was the Adjutant of the Day. It is well recorded that when smoke began to rise from the town he turned to his commanding officer and said, "Are you going to let them burn the town?" And then the order was given for the "shot that was heard around the world." He served afterwards during the Revolution as a Major of the Massachusetts forces and as Quartermaster and helped materially in keeping the troops supplied. He likewise was the sheriff of Middlesex County, Massachusetts. The custom has come down that Harvard Commencements are always opened by the Sheriff of Middlesex County who comes in and strikes his sheathed sword three times on the platform as he says: "This meeting will be in order." That was one of Major Hosmer's duties.

HARDING: In addition to the Hosmer Genealogy I notice you have a "Who's Who in America" citation. The earlier editions of that are more complete than the more recent ones. Is that correct?

HOSMER: No. Different persons are in because after one passes on he appears in "Who Was Who."

HARDING: I mean in your own account. Has it shortened in recent years since your retirement?

HOSMER: Not as much as a good many have been, but certain books that I wrote some years ago have not been carried on in the later editions. I've forgotten just how far back I go in "Who's Who." I think it was before I left Honolulu. That was in 1914. Just a few days ago I okayed the sketch for the next volume. [A later letter from Hosmer includes the following comment on "Who's Who." "The oldest volume I now have, in which I appear, is Volume X--1918-19. But I sold one, perhaps two, of earlier date. I think I was first in Volume VIII."]

HARDING: And then also you have noted here "American Men of Science."

HOSMER: I became a member of the American Association for the Advancement of Science (A.A.A.S.) about the time I came to Cornell, and was made a Fellow four years afterwards. The official figures are "14F18."

HARDING: We can say then that the Hosmer family has been in the United States since early colonial times and has taken a part in Massachusetts history down through the years, and that at the present time Hosmers are pretty well scattered through the country? I believe you have a son near Buffalo.

HOSMER: Well, the Connecticut branch of the family seems to have scattered over the country a little more than the Massachusetts branch. Here in New York State most of the persons of our name whom I know appear to be of the Connecticut branch. But a good many of our name, of the Concord branch, are found in the west. One of my uncles, Dr. James Kendall Hosmer, was for many years the public librarian at Minneapolis. He was one of those who founded the Minnesota Historical Society, with which your organization was formerly connected. He was a historian and his specialty was books on the Colonial period. He has one book, "Young Sir Harry Vane (1888) and one "The Life of Thomas Hutchinson" (1896), the last colonial governor of Massachusetts.

HARDING: And he taught where?

HOSMER: He taught at Washington University in St. Louis before going to be the librarian at Minneapolis.

HARDING: When and where were you born, Ralph?

HOSMER: I happened to be born in Deerfield because my mother went home when I was about to arrive so that she could be under the care of her own physician and a great personal friend. So I was born in Deerfield, Massachusetts on March 4, 1874. I am now eighty-six and one half.

HARDING: Your father and his father before him were ministers, isn't that right?

HOSMER: They were Unitarian ministers. My grandfather left living in Concord and moved out to Unitarian parishes. He was given a doctor's degree by Harvard. He was for 33 years (from 1836 to 1866) at the First Unitarian Church in Buffalo, New York, and after the Civil War he was for a time president of Antioch College in Ohio. He later returned to New England where he was minister at Newton, Massachusetts. I can remember the Golden Wedding he and his wife celebrated in the early '80s.

HARDING: Tell me, what do you recall most about your boyhood in New England?

HOSMER: Well, my father was a Unitarian minister and was settled for awhile in Deerfield to take his brother's place during the Civil War while his brother, James Kendall Hosmer, the historian, was in service. My father then went to a parish at Bridgewater in Plymouth County, Massachusetts and then to Salem, Massachusetts, the old town on the coast north of Boston. For seven years I lived in that historic town of Salem, and some of the things that stand out especially are the museums. The old sea captains when they came back from the South Seas and elsewhere also brought something which they put in the museum. There was a good deal of truck brought back, but there were also some very valuable things. The museums in Salem are just pictures from hundreds of ships that existed in this country at that period. I began public school there.

HARDING: What were your special interests as a boy growing up?

HOSMER: Well, I happen to be an only child and I was always rather closely associated with my parents and other older members of the family. Perhaps, rather more so than most children are and the things that I most remember I think are family events. I remember my grandfather, of whom I've already spoken, used to come to visit sometimes as an older man.

HARDING: Of course, there was a good deal of talk of church affairs, I suppose.

HOSMER: Naturally. My grandfather married the daughter of Dr. James Kendall of Plymouth, Massachusetts, the minister of the first church there, probably one of the early Unitarians who organized the American Unitarian Association in 1825 in Boston. He was installed in Plymouth January 1, 1800 and pastor 57 years until his death in 1857. He was a very well known man. And that goes back to other New England lines through the Kendalls.

HARDING: Did you ever consider going into the ministry yourself?

HOSMER: No, I don't think I did. But I've always been pretty closely associated with the Unitarian churches, I believe.

HARDING: You have always been an active member of the local church?

HOSMER: Yes, including the one here in Ithaca.

HARDING: I see. Tell me, how did you first become interested in the field of forestry.

HOSMER: Well, I think I had some natural interest in trees and shrubs. But the real reason perhaps was that when I was about 15 I had the only serious illness that I ever had in my life, a pleural pneumonia, and just pulled through with the help of a skillful physician. When I finally began to get well he said, "The thing for you to do, Ralph, is to stay about two years out in the outdoors. Don't do too much work, and walk all you can, and just live outdoors." I had just the year before enrolled in the first class of the Boston Latin School, the famous old first public school in Boston, and I was in the middle of the second year. If I had gone ahead, that would have brought me into the class of Harvard '97, where our family had traditionally gone to school. But all that went out the window. I spent most of my time in those next two years walking around and riding on bicycles and keeping out of doors. My exploration of the adjoining country were visits to the Arnold Arboretum, which was five or six miles from where we lived in Dorchester, the southeast corner of Boston. Then Dr. Green, my physician, said, "I want you to go out and help my man do some chopping in our woodlots in Milton," which was an adjoining town. And so, going out with Pat, his Irish workman, with the dog along I learned under Pat how to fell trees, and that was perhaps the actual beginning of forestry.

HARDING: This was a period of convalescence for you, following your pneumonia attack, and during that time you were out of school. You were not going to any classes of any kind?

HOSMER: No. I did a little studying with a tutor, but for many of the basic subjects I never did have the proper training--then came the opportunity at the Arnold Arboretum, the great tree garden of Harvard University at Jamaica Plain, which was located in connection with the Bussey Institution, which was then the department of agriculture of Harvard University. Frederick H. Storar, who was well known for many years for his major textbooks, taught there. Agriculture and its relations to chemistry was the theme of that institution. While its number of graduates was not too large, many of the men who did graduate from that were successful in the world of science. Some at Cornell have been in that group, and I feel greatly indebted to--getting from intimate connection with Storar the scientific approach in his teaching. Although I've never done anything directly with his course in chemistry I got to know him personally very well.

HARDING: He had a very strong influence upon you, is that right?

HOSMER: Yes, he did.

HARDING: Could you describe him a little bit?

HOSMER: That was a three-year course. One year at the Bussey Institution at the stone building on the grounds of the Arnold Arboretum, and then two years in Cambridge at Harvard in the Lawrence Scientific School. I took various courses in geology and the basic subjects and then received in June, 1894 from Harvard a degree of bachelor of agricultural science, which was my first Harvard degree. Later I became a temporary member, so-called, of the class of '96 at Harvard College, that is, I attended certain same classes that the Harvard '96 men did. I've had the satisfaction of attending the 60th reunion of that class. My son,

who is also a Harvard man, '36, was having his 20th anniversary at the same time. He drove me to Cambridge. I expect to go to the sixty-fifth this next year in June. Am I saying too much?

HARDING: No, no, that's all right. Your study then at Harvard was pointing you in what direction of professional life? What did you aim to do after you got out of school?

HOSMER: Well, at that time I lived at home in Dorchester and went out to Cambridge every day--which was quite a long trip on the streetcar--rather than living at Cambridge. I was directing myself as far as I could toward something to do with forestry. Partly it was because of my work with the trees at the Arnold Arboretum and with one of the professors at the Bussey Institution. So little was known about forestry in those days that I could have been much better advised as to what to take in the way of courses at college. There was nobody that knew anything about forestry.

HARDING: where did you first hear of such men as Fernow and Pinchot and Schenck?

HOSMER: Well, they came somewhat later. I think I've been a member of the American Forestry Association since that period--certainly about '95 continuously.

HARDING: Who was your adviser at Harvard?

HOSMER: Well, as long as I was connected with Bussey, Dr. Storar and Benjamin Watson, who was the professor of horticulture in the Arnold Arboretum. I was working under John George Jack, one of the assistants of Charles Sprague Sargent, who was the head of the Arnold Arboretum. I never had anything directly to do with Sargent, but I did study dendrology with Jack, who was a very helpful person in learning trees.

HARDING: How did you look upon Sargent when you were a student there? Was he very highly regarded?

HOSMER: Oh, he was one of the outstanding leaders in the whole botanical field in the entire country, and particularly in Boston.

HARDING: Can you describe him to us?

HOSMER: Well, I actually didn't know him. I know how he looks from photographs, but I don't--

HARDING: Didn't you ever encounter him?

HOSMER: Very seldom. Most of his own work was done at his own home or after the Arboretum had the building. I think even so, he usually worked in his own study.

HARDING: Oh, I see.

HOSMER: At the azalea time each year, he and his wife opened their house for two or three days in the weeks when the flowers were at best, and I may have met him that way, but I can't say that I personally know him.

HOSMER: I had a connection a little while after I received my Bachelor of Agricultural Science degree from Harvard. I was employed by the Massachusetts Horticultural Society, and for a little while worked in their library in Boston. Then naturally I began to hear about forestry and some of Fernow's publications as the head of the then Division of Forestry of the U.S. Department of Agriculture in Washington. Many publications from his office were coming out, and at that time were on file in the library of the Horticultural Society.

HARDING: What were you doing specifically for the Horticultural Society at that time?

HOSMER: Well, I was sort of a general library assistant. They had frequent meetings, usually a monthly meeting and sometimes even more often. Reports of that were written up by the secretary. I usually read proof of the reports--"always read the proof three times"--and so I learned how to perform that useful job, and I got to know more people in that way. That was downtown in those days. The Horticultural Society is now down in Back Bay by the Symphony Hall.

HARDING: What could you say about the attitude of the horticulturalists at that time towards the new thought in forestry that was beginning to come over to this country from Europe?

HOSMER: Well, there was a great deal of interest shown by certain people. One of the most important men at the Horticultural Society, when I went down in Washington a little later, gave me a rather flowing letter of introduction, which rather surprised me when it was presented. He praised me a little highly than he perhaps should have. It was evident that it was to send me along the scientific work. That was in Division of Soils in Washington before I later transferred to forestry under Pinchot.

HARDING: Now, let's just go back a little bit here. You were working for the Massachusetts Horticultural Society for how long?

HOSMER: That's a matter of two years or so.

HARDING: Two years, and that was from when?

HOSMER: Well, I stayed in Harvard until June '95, and I went on up to Washington in '96. I guess it was a matter of months rather than years.

HARDING: You went then straight to Washington from there?

HOSMER: I've forgotten whether that was before or after the Horticultural Society but I worked for the city of Boston under the Metropolitan Parks System of Massachusetts. Some of the big bulldogs which are now on Park Place were being laid out. I actually set stakes and ran some lines in locating the Blue Hill Avenue which went out toward Blue Hills on the southeast side of Boston. That system was based on mapping done by Charles Eliot, the noted landscape architect and President Eliot's son--he was the one who made those plans.

HARDING: These included planting boulevard trees?

HOSMER: Olmsted and Eliot was the firm employed by the Metropolitan Park System of Massachusetts. So I came to know personally one of the Olmsteds. I was in a class together with him at Harvard.

HARDING: Was that Fritz Olmsted?

HOSMER: No. There was another Olmsted, a cousin of his, who was later in California, whom I had a great deal to do with. I don't want to say it and say it wrong.

HARDING: What directed you to going to Washington in search of a job? How did you happen to come to that decision?

HOSMER: Well, it was along in the mid-'90s there was no landscape architecture except in the state way in this work I've been describing. A good many people were pretty hard up and didn't have money for it and I didn't have influence enough to get into either of the leading offices in Boston. Forestry as a whole hadn't been heard of. I naturally had to get a job, and there was one offered, a position as forest assistant in the Division of Forest Soils in the U.S. Department of Agriculture by Civil Service examination. On the strength of the things that I'd had at Cambridge, (especially several courses in geology under Professor Nathaniel Southgate Shaler, the great geologist of Harvard in those days), I took that examination and passed it and was appointed to an office under Dr. Milton Whitney, who was the then head of the Division of Soils, and from the spring '96 to '98 I worked in that division.

HARDING: What sort of work did you do there?

HOSMER: Laboratory work for the most part.

HARDING: Analyzing soils?

HOSMER: Both analyzing soils so they could be classified and also moisture studies. Tubes with soils were sent in from various parts of the country. I shook them out of the tubes and measured them with a chemical scale--heated them overnight and measured them again and then from that data I secured the figures that we were after. Whitney attached my name to his and that was my first official publication: Whitney and Hosmer, Bulletin No. 9, "Soil Moisture" (1896).

HARDING: Bulletin Number 9 of the Department of Agriculture?

HOSMER: Number 9, of the Division of Soils in the Department of Agriculture.

HARDING: It was in the Division of Soils that Gifford Pinchot found you?

HOSMER: On July 1, 1898 Gifford Pinchot succeeded Dr. Bernhard E. Fernow, who had been the Chief of the Division of Forestry for 12 years. Dr. Fernow came to Cornell at the call of the University, to become Dean and Director of the New York State College of Forestry at Cornell University. It's well to give that whole title, because the present school of that name is the State University of New York College of Forestry at Syracuse University.

Pinchot took hold in Washington in July, 1898, and he brought in as his chief assistant Henry S. Graves, who later became well known as the Dean of the Yale School of Forestry.

HARDING: And he was known by Pinchot as "Harry" Graves, I understand.

HOSMER: Yes. Henry Solon was his name; Harry was his nickname. They'd been in college at Yale together. They were both deacons in the Yale Church, and Pinchot in his book, *Breaking New Ground*, says that they were both in competition for a football position and Harry got it. (Note from Hosmer in October, 1958) The book *Breaking New Ground*, by Gifford Pinchot, should be required reading for every one concerned with forestry history in the U.S.A. This, whether or not the reader likes or agrees with Gifford Pinchot. In this connection, see particularly parts one and two, five and six.) But certainly they always remained close friends. Grave's home was in Connecticut and he was of New England extraction.

HARDING: Graves joined the Division of Forestry by Civil Service examination, was that it?

HOSMER: All the positions of the scientific men were under Civil Service. I don't remember exactly when Civil Service came in, but it was in effect in the mid-90s. Of course, there were all kinds of political positions in Washington, something very different, very different indeed. So one of the things that Mr. Pinchot insisted upon all through his term of office was that only persons who had passed Civil Service examinations should be members of the Division, Bureau, or Service. I took this examination and passed and Pinchot requested that I be transferred to Forestry from Soils. I suppose it went to the Secretary for the final check--and he approved--I was transferred in the autumn of 1898 to the Division of Forestry under Gifford Pinchot, Forester, and in fact was the seventh man appointed under him.

It should be remembered that the title was the Division of Forestry until June 30, 1901; Bureau of Forestry July 1, 1901 until February 1, 1905; and Forest Service since that date.

HARDING: This morning you gave me a few words on the examination itself. Could you repeat that story for us, please?

HOSMER: There was very little in English about forestry in those days. Sir William Schlich, the leader in British forestry and for a good many years the head of the forestry school of Oxford University, England, had written a five-volume manual of forestry. Some of it was a straight translation out of the German and the

rest of it was based on German forestry texts. The Germans had done more in forestry than the French, although some of the French had done a good deal. There were one or two other English writers. One was Dr. John Nisbet. He wrote two books which were helpful to students of forestry. He was on the East Indian Forest Service of the British Empire.

There may have been one or two other books and there were a few bulletins from the Division of Forestry. There was also the magazine, *Garden and Forest*, started by Sargent, the head of the Arnold Arboretum. He was the man who compiled Sargent's *Silva*, 13 great volumes of illustrations and botanical descriptions of the forest trees of the United States. And of course the monthly magazine of the American Forestry Association of Washington, D.C., dating from the 1890s, which has appeared under a series of names over the years. From the standpoint of today the literature was pretty scant.

I studied all that I could get hold of. I remember there was one other book by a Scott McGregor, on the financial side. When I named this to Graves he looked at me critically--he had the sharpest eyes you ever beheld--smiled a little, and said, "Did you understand it?" I said, "I think, Mr. Graves, I understand parts of it." He said, "You're the only man that ever did!"

I got by the examination and was definitely appointed and said goodbye to the Soils people and moved across the street into the old building, the old brick building of the Department of Agriculture. Some older persons may remember that there was such a building on the mall in Washington, at 13th Street. Forestry had a very small space, one big room on the third floor, where in 1898, about a dozen of us were crowded in so that the desks touched all around, and on top of Graves' desk was a big sign, "Silence." Mr. Pinchot had a little hall--bedroom sort of place--as his office, and there were one or two other rooms up in the attic. As one came down those stairs he could see through the transom. But Mr. Pinchot was perfectly willing that anyone should see who was talking with him. When we moved to the Atlantic Building on F Street, some years later, the man who followed Gifford Pinchot hadn't been in his office five minutes before the transom was covered with a green cloth. The door was always shut, Mr. Pinchot's had usually been open. Pinchot was a man one worked with and not for, but I may say a word about that again later. One note here, he soon acquired a nick name, "GP", his initials.

HARDING: Your first duties in the Bureau of Forestry were what?

HOSMER: It was a very small staff and there was not much organization. Graves was the superintendent of working plans and George B. Sudworth was the dendrologist, whose books on the forest flora of the United States are still respected sources of information on that subject. Then there was one man in charge of the business end. And that in the beginning was about all the sections there were. There weren't very many rules in the Division of Forestry but those that Mr. Pinchot made were to be observed. One was that no letter should wait more than 24 hours before it was answered, except if it was very difficult, but even then the reply was to be sent within 48 hours, and you must give the exact date when the full answer would follow. All papers had to be initialed and dated. That made them useful records.

HARDING: I believe the National Archives has a considerable amount of the correspondence of the Forester's Office for those years.

HOSMER: I suppose it must be in that place. I've never tried to look anything up in the Archives, but there is a tremendous lot of material there. I understand the Federal Archives, on lower Pennsylvania Avenue, are already overflowing.

HARDING: That's right. They have records centers all over the country that will take in material of a non-permanent nature. It's the terrific problem that bureaucracy has caused.

HOSMER: One of the things that we learned to do in those days was to write letters of the type that Pinchot wanted sent out. Mr. Pinchot had certain favorite phrases which we naturally followed and he probably didn't object. He looked over the copies that we turned in and sometimes they got pretty vigorously edited. Our copies, after they'd been okayed by him, went to the typist. One of his especially favorite phrases was, "You will agree with me on that..." There were all kinds of "chiefs of divisions" but there was only one "forester." That made a real difference in a lot of ways.

HARDING: Your work with the Forest Service was concerned with a considerable number of field studies. Could you review a couple of those for us, please?

HOSMER: In October of 1898, after a lot of discussion and planning with Graves and others, the Division of Forestry published, as Circular Number 21, an offer to help farmers, lumbermen and other private timberland owners. Note: Further correspondence from Hosmer contains the following: This, Mr. Pinchot describes in these words on page 141 of his book, *Breaking New Ground*:

The offer included whatever was needed to get forestry going--work plans for conservative lumbering, with full directions for practical work, and assistance on the ground. Help was free to the owners of woodlots, owners of large tract paid the expenses of our men in the field, but not their salaries, and the cost of local assistants. Timberland owners who accepted terms of Circular 21 must (and did) put up good money to show they meant business and what they put up added just so much to our appropriation.

Within four months after I took office, applications had been made for help in handling nearly a million cases in the United States. This was one major offensive.

HARDING: Under what federal law was this carried out? There must have been some authorization from Congress to allow the Division to do this type of work. Do you recall what the authorization was, by any chance? I know this is a question just out of the blue?

HOSMER: I ought to, but not just right off-hand. I don't think it was special legislation; it was under the general rights of the Secretary of Agriculture to furnish information. But Mr. Pinchot was the first one to make use of it in just that way. Department of Agriculture officials had been going out to farms and tracts of land all over the country for specific things. I'm afraid I'd have to look it up to see just what statute...That's easily found. There's plenty of information about it. That was Circular 21, and two or three years later a similar offer, Number 22, was issued for tree planting, especially in the West. Mr. William L. Hall was in charge of a good deal of that, although for a year or more I personally had the title of Chief of the Section of Forest Planting.

HARDING: A good part of your work seems to concern the New England and New York State areas. Could you give us a brief story of that?

HOSMER: Circular 21 ran all the way from five-acre woodlots to large tracts of forest land owned by states. It was part of my duty to make examinations of both sorts, some in the Middle West, but more in New England. One or two of the lands owned by corporations, one in particular, became one of the first tracts to make up part of the White Mountain National Forest after the Weeks Law of 1911, when those lands were taken over by purchase by the Federal government. Another was for the state of New York when a forest working plan was made for Township 40, Totten and Crossfield Purchase, in the Adirondack Forest Preserve, which I will say more about in another tape.

That first winter, of 1898-1899, Mr. Pinchot sent me up into northern New Hampshire, an area with which I was somewhat familiar, for as a boy I had been there, on vacations, from our home in Boston.

HARDING: In that winter in New Hampshire in the logging camps, do you feel now, looking back on it, that the men out in the woods had a pretty primitive existence; or do you feel that the companies were doing the best they could by them; or do you feel the companies were cutting corners and not giving them the best treatment?

HOSMER: It was a rough life, of course. You got enough to eat, such as it was--and different from the food that men have in lumber camps today, especially in the West. Some of the camps were pretty primitive. Nobody got hungry, however. It's a hard life; the men worked tremendously and there was no outlet or recreation. Nowadays some of the churches are sending "sky pilots" into the camps, whereas in the old days the only outsiders that came were towards the spring, agents for tailors taking orders for suits to be ready at the end of camp in the spring, that they could have when they came out. They were the only outside people that turned up. When I came back, after occasional visits out, and brought newspapers in, if the papers I brought had accounts of prize fights, they thought I was a helpful person.

HARDING: Did they feel in any way hostile toward you because of your college background?

HOSMER: No. They didn't seem to. I don't think there was any trouble of that sort. A good many of these men were from Prince Edward Island and other maritime provinces. In later years French-Canadians have come to New York state and New England. I don't remember any incident when there was any sign of irritation. They didn't understand what I was doing, of course. They just wondered who this person was who had turned up. Most of the time I stayed in the camp boss's cabin, but in one or two of the camps I lived right in the big "bunk house" room where 30 or 40 men all slept together.

HARDING: Getting back to the Washington, D.C. phase, after your winter in New Hampshire, you went back there to work out the field reports?

HOSMER: No. The figures that I got from the study, stem analyses as we called them, of the spruce trees, were worked up by me later when I went to the Yale Forest School, and I guess became the property of Yale. I think they're still in that library. My thesis was never published, but some of the figures from it were used.

In the Oregon State College Bulletin Bibliographic Series No. 3, 1953, "Forestry Theses," my Yale thesis is noted on page 98, as 2033, Hosmer, R.S. "Some silvicultural notes on the spruce forests of New England and New York."

In the spring of '99 Graves took me up to the Adirondacks and we visited Nehasanee Park, Dr. Seward Webb's estate, where a working plan had been made by Graves and Pinchot, from which came a little book called "The Adirondack Spruce," and then in 1899, a bulletin, No. 26 of the Division of Forestry by Graves: "Practical Forestry in the Adirondacks." This was the first working plan made and published by foresters in the country. Bulletin 26 describes it with tables and map. Graves making an inspection trip in 1899, checking on progress. The visit also included a call at the adjacent Whitney Preserve, owned by the Honorable William C. Whitney of New York City (a former secretary of the Navy, and grandfather of the present ambassador to England).

HARDING: The Division of Forestry was doing work for the Whitney family?

HOSMER: Yes. Both for the Seward Webb and also for the Whitney family. They paid the expenses of the party.

HARDING: Do you know if the families carried out the working plan?

HOSMER: Yes, they have. It's going at this time. The 1957 meeting of the New York Section was held there, this past summer. It was a very interesting occasion because there were pointers at the different things in forest management that had been done there over the decades.

HARDING: It certainly would be a good example of an early working plan being put into practice and the results from that plan.

HOSMER: That was just an inspection trip that I went on along with Graves, but on it I did meet a number of Adirondack people with whom I had to do work in later years.

Then in May 1899, Mr. Pinchot put me in charge of making a working plan on the slopes of the Mount Marcy at a place called Tahawus, which was about as inaccessible a locality as there was in those years in the Adirondacks. You drove back by buckboard from the railhead at North Creek on the Delaware and Hudson Railroad about 50 or 60 miles, and then you were up on the side of Mount Marcy, the high peak. Those were the days of rather big parties of student assistants. The trained staff of the Division of Forestry was small because there just weren't any places to get men. The forest schools hadn't been established. But Pinchot conceived the idea of having student assistants, who receive \$25 a month, and their board and keep while they were in the field. Then in the winter in Washington, the salary was increased to \$40 and they were supposed to live on that, unless they had independent means, which few did. When I was transferred from Soils to Forestry, my salary was increased, but during the winter months when I was in New Hampshire there wasn't any salary. I was a student assistant so I went through that same process.

The working plan for the MacIntyre Iron Company at Tahawas was never published, but it was used by the company and it was one of the early working plans which followed those by Pinchot and Graves for Nehasnee and the Whitney Tract. The next year (1900) comes into another chapter, because we were then dealing with state lands. That is another story.

HARDING: Tomorrow we're going to cover the State of New York forestry as a separate topic. And this would bring us into the year that you took a leave of absence?

HOSMER: Yes. One more year after that I went to New Haven, in the autumn of 1901 so two more years elapsed. This was the summer of 1899 I was just talking about.

HARDING: What occurred between the summer of '99 and your leaving for the graduate School of Forestry at Yale?

HOSMER: That was two years on the townships around Raquette Lake in the Adirondacks, in the State Forest Preserve - townships 40 and 5, 6, and 41.

HARDING: We can get those tomorrow. Let's skip on down to the year of the leave of absence and your taking the master's degree in forestry at Yale. You went there as a second year student?

HOSMER: Yes. On the strength of the work that I did at Harvard, at the Arnold Arboretum in dendrology, and the experience that I'd had, especially with two working plans around Raquette Lake, Dean Graves thought that I should be admitted to senior standing. Yale offered a two-year graduate course. A bachelor's degree from some institution was required, so it was strictly, as it always has been, a graduate school. There were seven men in the original class, plus three more of us in 1901 who were allowed to join the original class. One of these was Richard T. Fisher who later was head of the Harvard Forestry School at Petersham, Massachusetts. So ten of us received the degree, master of forestry, in June, 1902, the first to be graduated in forestry from Yale University.

HARDING: Would you say that the training at the Yale Forestry School at that time was more technical and theory training, or was it somewhat practical also?

HOSMER: It had both features. The textbooks--I've already mentioned that there were only a few and they dealt altogether with European traditions, based on German models--were rather expensive and some of the students felt that they weren't worth buying, which was perhaps borne out by the fact Dean Graves, of course, had had European experience. He was the second American forester who had gone abroad to study. Pinchot was of French descent and went to the French forestry school at Nancy and was the only American ever to receive what was the equivalent of a degree there. Graves studied in Germany and Switzerland, and also somewhat in France, and with different German foresters. Overton W. Price, another of the leaders in the early days, also studied with these same men.

By far the most important of these European foresters was Sir Dietrich Brandis, who had previously been Head of the British Empire Forestry Service in Burma, India.

A good many outsiders were brought in. Pinchot himself gave courses of lectures. Professor James W. Toumey, who later succeeded Graves as the dean, was a botanist. He lectured on the trees of the country. Then there were entomologists and pathologists who came in and gave lectures. So there was really a good deal of technical training, as well as some that was taken in the Scientific School of Yale. But compared with the literature that was available later, it was the start.

Dr. Fernow, who was a German forester but became an American citizen soon after coming to this country in the late '70s, and was called from Washington in 1898 to head the college at Cornell, as I've already said, had worked out, in a book of his called "The Economics of Forestry," an outline for the teaching of forestry, and that was installed at Cornell in '98 when that school was opened. That formed the real basis for basic curricula which were used in later forest schools. Dr. H. H. Chapman of Yale who did more than anyone else to get technical training in forestry on a sound basis in all forest schools, under certain very strict standards, points out in one of his writings that practically all of the early schools followed Fernow's outline. One year, after he had left Cornell, Fernow gave at Yale a course of lectures on the history of forestry, using a book that he had written while he was at Ithaca. So it was by no means a meager course.

Although when one thinks of the material that was available in later years, it may now seem somewhat limited.

A long story leads out from the appointment by Gifford Pinchot in 1909, of a Committee on Forest Education, which made a report in *Forest Quarterly*, Volume 10, No. 3, 1912, entitled "Standardization of Instructions in Forestry." This was followed up in 1920 by a conference called by Dean Toumey in New Haven. The proceedings were published as Bulletin No. 44 of the Bureau of Education of the U.S. Department of the Interior, 1922. Then came the book, "Forest Education," by Graves and Guise, in 1932, and in 1935, Professor H. H. Chapman's "Professional Forestry Schools Report."

The story covered by these publications in an essential chapter in the development of the profession of forestry in the United States.

HARDING: Of course, the development of forestry education in the period of 50 years, starting with the crude course at Biltmore, at Cornell, and then later at Mont Alto Academy, and at Yale, and at Penn State College (now University), I guess has been quite a development over the years, and a rapid development when you think of the number of years that law and medicine have had to develop a curriculum as a profession.

HOSMER: The first school of academic character was that established at Cornell by Fernow in 1898. That school of Schenck was an entirely different sort of thing. It was like the "old master's schools" which the leaders of a century before in Germany--Hartig and Cotta--had provided. He lectured to the men in the morning and then took them out in the afternoon for field work. That, of course, was an excellent thing, but the school did not have the academic standing which the other schools that you just named did have.

HARDING: When you returned from Yale to the Bureau of Forestry in July in 1902, did you go into the same type of work that you had been doing before or were you upgraded?

HOSMER: I don't remember that there was any salary promotion then. It was a somewhat different sort of work. The summer of 1902 I spent in the state of Maine on another cooperative job with Maine under Circular 21. It was on a large tract owned by a lumber company on the shores of Moose Head Lake, up in the central part of Maine. We had a township there, on which we were studying spruce and balsam fir and also the growth of birch, beech and maple. Austin F. Hawes, for many years the state forester of Connecticut, had been with me before in the Adirondacks and was with me that summer and carried on hardwood work after I'd gone out in the autumn. We have been close friends ever since. That report was published by the Forest Commission of Maine as a state report in 1903. The field work was performed by another good sized party of student assistants.

HARDING: That would be available in Augusta more than likely.

HOSMER: It may be out of print but it was just a part of the annual report. The title was the *Fourth Report of the Forest Commissioner* 1902, Augusta, Maine, 1902. (Honorable Edgar E. Ring) "A study of the Maine Spruce by Ralph S. Hosmer, M.F. (Yale), Field Assistant in the Bureau of Forestry, U.S. Department of Agriculture." Pages 57-124, Squaw Mountain Township, Piscataquis County, Maine. That same 1902 Maine Report also has an article by Austin Cary, A.M. Forester called "Management of Pulp Wood Forests. System of Forestry practiced by Berlin Mills Company."

HARDING: On returning to Washington, D.C., your last assignment for the Bureau was in southern California. Is that correct?

HOSMER: Yes, in fact I was promoted, as I said before, so that in 1903 I held the position of Chief of the Section of Forest Replacement, which had to do with planting of forests on federal land and subsequently in national forests. Later William L. Hall had more to do with that work than I did.

Then, in 1903 the state of California wanted some aid and assistance from the Bureau of Forestry, which came under the scope of Circular 21. There were two or three parties; in the northern part of the state, doing certain things, and I was in charge of a party working in southern California, south of the Tehachapi Mountains and down through Los Angeles to San Diego. There were several sub-parties. One of them was studying eucalyptus trees, the growth of the different species; and there were various things

that Mr. Pinchot wanted looked up. I gave a course of lectures in a summer school run by the botanical department of Berkeley on Mount San Jacinto, a high mountain in southern California. From the peak you looked out in one direction to the desert and saw the Southern Pacific Railroad winding its way to New Orleans, the surface getting more and more bare and dry the further it went, absolutely no vegetation in sight except the occasional growth around the water tanks of the railroad; the rest [was] desolation itself. Then looking down in the other direction, to the highly irrigated citrus fruit orchards at Redlands and Riverside. One saw the height of the citrus industry in southern California, all made possible by irrigation, with water from the forested mountains. The full meaning of irrigation was evident in those contrasting views.

HARDING: Did you find in these field assignments that it took you a while to adjust to the variety of trees and the climate and the different conditions that you ran into?

HOSMER: I'd never been on the West Coast before that trip, so the trees were new to me. A man name J. G. Lemmon, who had been the state botanist of California, had published a small book with good illustrations and descriptions of trees. Also, a botany of California had been published by Miss Alice Eastwood of San Diego, in the extreme southern part of California. Copies of those were used by all of us.

HARDING: Has that work on California been published?

HOSMER: There was a good deal being done by the Bureau of Forestry, and there was a report which I must have written in the early autumn of 1903, but I went off to Hawaii before it was ever published, and as a matter of fact, I've never seen it. I've never taken time when I was in Washington to dig it out of the Archives. And I presume the work done by my party on the eucalyptus study is also to be found there. At that same time, the summer of 1903, there were other parties getting in the field in Southern California. There was field work necessary there, too, which led to the creation of national forests in a number of places in California. There were tree planting experiments going on, especially in the Angeles Forest. Then one of the forest experiment stations sent out photographers and to take pictures of various forest scenes.

Edward T. (Ned) Allen, one of the charter members of the Society of American Foresters, was another man who was working at that time in northern California. He made himself felt later, as the first state forester, in 1905.

HARDING: In evaluating your years of service with the U.S. Bureau of Forestry, what would you point to as an outstanding work?

HOSMER: Those forest working plans served a real purpose in their day. They did away with the old "land looker," where a man went through a forest and just looked at it and then said how many board feet there were. When the lumbermen found that accurate, detailed measurements could be made, and that the estimates told of what species the stands were composed, their value became apparent.

HARDING: Today's topic will be the development of forestry in New York state with special reference to Township 40. For background purposes a researcher would want to consult an item which would be available at the State Department of Conservation in Albany, and at many university libraries where there are schools of forestry. The title is *A History of Half a Century of the Management of the Natural Resources of the Empire State, 1885-1935*, by Gurth Whipple, published in 1935 by the Conservation Department and the New York State College of Forestry. Professor Hosmer, you wanted to relate a little of the story on the relationship of Colonel William F. Fox to the development of the New York forests.

HOSMER: Yes. New York and Pennsylvania of the original 13 states have large areas of forest dating from the time when the states were set up. Portions of this land were sold from time to time to different lumber companies and others. In New York, DeWitt Clinton, the great governor back in the 1790s, who originated and put through the Erie Canal, and other canals in New York state, was mindful of the Adirondacks and proposed that legislation be enacted regarding that forest. But nothing was done about it. In fact, nothing very much was done until the 1870s, when a commission was set up which finally made recommendations. There was much discussion because there were two opposing points of view--one group wanted to hold the

area as a park; the other wished that it be legitimately developed by conservative forestry practices as Mr. Pinchot later defined them.

An advocate of the latter point of view was Dr. Franklin B. Hough, who in 1876 was appointed as special agent in charge of forestry in the U.S. Department of Agriculture in Washington, D.C. That was the start of the Division of Forestry. There he remained for three years, when Nathaniel H. Eggleston succeeded him. On the "park side" was Verplanck Colvin, who had surveyed much of the Adirondacks.

In May 1873 a report was submitted which had chapters by both these men. But like several other reports, it was soon forgotten.

Finally in 1885, the work of a group headed by Professor Charles S. Sargent, of Harvard led to the passage in May, 1885, of Chapter 283 of that year. This is regarded as "the foundational law of conservation in New York state." Dr. B. E. Fernow aided in its drafting.

In 1892 certain areas within the Adirondack Region were designated by law as the "Adirondack Park," shown on the map by the "Blue Line;" and the lands owned by the state included within that line were named "The Forest Preserve."

In 1895 an amendment was incorporated in the [New York] State Constitution (Article VII, Section 7) that "all lands within the forest preserve shall be forever kept as wild forest lands. They shall not be sold, leased or exchanged, nor shall the timber there be sold, removed or destroyed." That wording stands today as Act XIV, Section 1 of the Constitution of New York state.

Consequently in New York state, all discussion that concerns forestry soon runs head on into VII-7 (Now XIV-I). As Gifford Pinchot said, in 1898 or 1899, "Forestry is being practiced everywhere in New York State except in the woods!"

Here is where Colonel William F. Fox comes in. He was superintendent of forests, under what is now the Department of Conservation. He served from 1891 to 1909 as a political appointee, but one who took true and deep interest in his work and he rendered notable service to the state. He was a Civil War veteran.

It was a suggestion of his, followed up by his securing the support of others, which led Governor Black to sign Chapter 122 of the Laws of 1898 which created the New York State College of Forestry at Cornell University--"the first school of collegiate rank on the continent of North America to give technical instruction in forestry and to train men for the practice of forestry as a profession."

Further, it was at Colonel Fox's insistence that the laws which created the College of Forestry at Cornell also had a provision that endowed the College with a tract of 30,000 acres in the Adirondacks, with the object of providing a demonstration forest on which various kinds of silviculture treatments could be showed and illustrated. Very few persons in New York state realized, at that time, that forestry was more than a name, or what it really signified.

Unfortunately, the tract that was picked for Cornell for its demonstration forest, at Axton, on the Raquette River, was not too good a choice. But it was the only one that seemed to be available. One trouble was that it was only ten miles from Saranac Lake. This is a very lovely lake, with many privately owned camps belonging to wealthy people, mainly from New York City, many of whom were among those who were strongest in the feeling that all the Adirondacks should be treated as a park.

They did not want to have any lumbering done, and especially not where it was anywhere near their own camps. It was from this group that came the political opposition which led to the overthrow of the (old) College of Forestry at Cornell, under Dr. Fernow, in June, 1903.

Colonel Fox, with his broad outlook on the whole subject, also had much to do with the application in 1900 from the Forest, Fish and Game Commission of the state of New York to the Division of Forestry of the U.S. Department of Agriculture in Washington for the making of a forest working plan for a typical township in the Forest Preserve, No. 40, of the Totten and Crossfield Purchase, the township which includes Raquette Lake. And in 1901, for a second plan, for the three townships, nos. 5,6, and 41.

These applications Mr. Pinchot was able to accept. For it gave the Division just the opportunity it needed to show, in published working plans, precisely what foresters were ready to do, should they have the chance to do so, by the repeal or a modification of the Constitutional bar of Article VII, Section 7.

The Working Plan for Township 40 was published in 1901, as Bulletin No. 30 of the Division of Forestry, U.S. Department of Agriculture, Washington, D.C., "A Forest Working Plan for Township 40, Totten and Crossfield Purchase, Hamilton County, New York State Forest Preserve," by Ralph S. Hosmer, Field Assistant and Eugene S. Bruce, Lumberman, Division of Forestry, U.S. Department of Agriculture.

Township 40, surrounding Raquette Lake, was selected as typical; especially so when enlarged in 1901 to include more of the upper Raquette River watershed.

The two working plans prepared respectively in 1900 and 1901 with maps, tables, charts and photographs, were also published in the large sized reports of the Forest, Fish and Game Commission in the years 1900 and 1903.

As one of the technical foresters of the Division of Forest, I was put in charge of the party, along with Eugene S. Bruce, Lumberman of the Division - a man skilled by long experience in the logging industry. Our task was to prepare forest working plans. Those were the days of large parties of student assistants. They were all college men, men who had gone at least halfway through college, if not actual graduates with a bachelor's degree, and they were employed for \$25.00 a month plus expenses which were furnished by the government and paid through appropriations by the State of New York. The salaries of the technical men like Bruce and myself were paid by the federal government.

The significance of the forest working plans which "Gene" Bruce and I made--I for the forest side and Gene for the lumbering, was that they were supported by tables and maps showing how the different bays of the lake could be used for cutting the logs into the water, when the time came, so that they could go down the river to Long Lake, and finally to Tupper Lake where the big mills were. Axton was on that section of the river. There were the plantations that Dr. Fernow was making at the summer camp of his college.

HARDING: It might be well just to read the title of this working plan into the record, so that we shall have a complete title. It's entitled "Forest Working Plan for Township 40, Totten and Crossfield Purchase, Hamilton County, New York State Forest Preserve," by Ralph S. Hosmer, Field Assistant, and Eugene S. Bruce, lumberman, Division of Forestry, U.S. Department of Agriculture, Government Printing Office, 1901.

HOSMER: The next year, 1901, the title was the same except that it read: "For Townships 5, 6 and 41." Only one bulletin was printed by the Division of Forestry, that for Township 40. But from Albany--in the seventh, eighth, and ninth reports of the Fish and Game Commission, there appeared in succession the two working plans conveying both the summer of 1900 and 1901, in 1901 and 1903.

Working plans for forests were something new at that time. Lumbermen were accustomed to hire men who were skilled in the woods and themselves had been loggers, who by walking back and forth through the forest could make a very good guess as to what the total number of board feet of a given species was on a given tract. They were guesses, to be sure, but they were pretty accurate. If a man had been doing that sort of thing for 25 or 30 years he got rather wise about what a bunch of trees would produce.

The foresters made actual surveys, by having parties of men go through the woods on definite lines - gridironing the tract, carefully measuring the trees in diameter, and estimating the heights, so that with so-called volume tables showing the board contents of the logs, with allowance for defects; very accurate estimates could be made as to what was standing on the land.

I was in charge of that work. We had some 25 or so men in the party. We also employed several local woodsmen. Gene Bruce's brother was one of them. He afterwards went as a forester to the Philippines. And another man, Larry Griffin, who had the same background as young Bruce.

While this working plan was never put into effect, it was accepted by the officials of the state with the understanding that, under XII-7, it could only be a recommendation and published as we expected it would be. And so Pinchot had his say. He'd answered his question, "Forestry is practiced everywhere except in the woods." He had showed how "conservative lumbering" could be done if technically trained foresters were allowed --with VII-7 amended--to give rational treatment to the forests.

In the State Report of 1901, pages 17 to 19, is a brief article by Gifford Pinchot, frequently overlooked, where he gives a number of reasons why it is desirable that such treatment be given lands in the New York State Forest Preserve. It is an item not to be forgotten.

Further, as to procedure, I may say that strips some 300 feet wide were left bordering all the shores of the lakes so that tourists, campers and visitors and others would not see cutover land for all the cutting was screened from view of the lake. They planned to cut very conservatively so that only the larger and mature trees were to be cut with many of the smaller trees being left and the cutting so arranged that they would make successive crops when the time came for that.

There had been only a few examples of forest working plans at that time. One for that vicinity of New York State had been made by Pinchot and Graves a few years before. After Pinchot returned from his training in Europe and his years at the Vanderbilt Estate in North Carolina, he opened an office in New York City, where he was joined by Henry S. Graves, later dean of the Yale School of Forestry, who had also studied abroad.

That plan was for the estate of Dr. Seward Webb in the Adirondacks at Nehasanee Park, a station on the Adirondack Division of the New York Central Railroad. This was only a short distance from Raquette Lake. That working plan was published by the Division of Forestry as Bulletin Number 26, in *Practical Forestry in the Adirondacks* by Henry S. Graves, 1899. This same working plan was extended to the William C. Whitney Reserve, which was in the same neighborhood. Forestry has been going on under that same working plan and is continuing today, after the tract has been cut for 60 years. Last summer (1957), the New York Section had a field meeting, a well attended one, at which some of the old-timers were present. Unfortunately I wasn't able to be there personally. I had worked on the Whitney tract and part of the figures that I got on the Whitney tract I made use of on Township 40.

For the Totten and Crossfield Purchase, the state again made provision the next year, 1901, for a second work plan for the three townships adjoining Township 40. This was done by a similar party, under Hosmer and Bruce. The work was started a little earlier and continued a little longer. The Division of Forestry did not publish that, but the Forest, Fish and Game Commission of New York did, as stated above.

Dean Graves, looking back on this incident, wrote me once from New Haven, a good many years later, that even if no practical operation in the field had resulted from our Township 40 Working Plan, not to minimize the importance of it. For one thing, it was the first time that any state had even attempted to set up such a project for public consideration, and this particularly in New York, where anyone who desired to know what this new profession, "forestry," was all about.

In 1950, in a brochure entitled, "Forestry at Cornell from 1898 to 1948." I tried to sum up "why the old college was abandoned and why the work at Axton stopped." That publication was privately printed and is now out of print. It may, however, be found in most "forestry libraries" in the United States. But because it does have to be looked for, I should like to insert here one paragraph, on page 11, entitled "Looking Back Fifty Years." It reads "For those whose memories do not run back as far as 50 years, a few comments may help to bring into correct perspective some of the happenings which led to the suspension of the New York State College of Forestry at Cornell University. It is hard to realize, without having experienced it, the change in the public's point of view on forestry which has taken place in the past half century. Then, save by a comparatively small group of far-sighted persons, even the broad principles of forestry were only vaguely understood. Very few indeed knew anything of the theories which support forestry practice or realize that there have been developed abroad systems of silviculture which, when followed, result in specific types and kinds of forests. As unfortunately is still true today, forestry seemed to them to center in tree planting rather than in management of forests. Several years had still to pass before Theodore Roosevelt was to hold forth on behalf of forestry and conservation. Next, in New York state, the situation was further complicated by the prevalence of the idea that the portion of the Adirondack Forests that is owned by the state as a forest reserve should be held and treated only as a park, which concept had been built up in a systematic way over a 30 year period. This had resulted in the amendment of the state constitution known as "VII-7," known today as XIV-I. Upholding that concept, as it still does today, was the active and politically powerful Association for the Protection of the Adirondacks. Too many owners of private reserves in the Adirondack region, any proposed treatment of the state forests that involved logging met the instant disfavor of this Association. An example was an outburst in a public hearing before the Conservation Committee of the State Senate held in Albany in 1924, when a prominent member of the Association referred to Dr. Fernow as "the man who introduced into the Adirondacks the iniquitous cutting of hardwoods."

The attack on the system of forest management used by Dr. Fernow at Axton came from a group of camp owners. Personalities also entered into the situation. Dr. Fernow was a forester who had been trained in the German methods under the leaders of forestry in Germany. Axton was an attempt on Dr. Fernow's part to show, in a prominent location what forestry really meant. Similarly, provided the people of the state of New York had been willing to try that experiment, the working plan for Township 40 was to show how the Division of Forestry, under Pinchot, would act.

It is of interest perhaps--especially to foresters--Dr. Fernow at Axton, during the five years the college was in camp there did considerable forest planting, to replace the hardwoods which he had cut and sold to a cooperage company at Tupper Lake. Bad forest fires in 1903 and especially in 1910 destroyed some of these plantations. But not a few of his plantations escaped that damage and have developed just as Fernow expected and predicted that they would. All of this is covered in articles over a range of years, which may be found in the *Journal of Forestry*.