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THORNTON T. MUNGER: FOREST RESEARCH IN THE NORTHWEST

An Interview Conducted by

Amelia R. Fry

Berkeley

1967

Produced under the auspices of  
Forest History Society  
and  
Hill Family Foundation





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At Forest History Society luncheon in Portland, Oregon, Thornton T. Munger receives his interview from interviewer Amelia Fry, August 16, 1968.

Below, "T.T." poses after lunch with long-time acquaintance Walter F. McCulloch, O.S.U. forestry dean and also a fellow interviewee in the Hill Foundation series









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## FOREWORD

This interview is part of a series produced by the Regional Oral History Office of Bancroft Library, University of California at Berkeley, under a grant from the Forest History Society, whose funding was made possible by the Hill Family Foundation.

Transcripts in the series consist of interviews with: DeWitt Nelson, retired head of the Department of Natural Resources, California; William R. Schofield, lobbyist for timber owners, California Legislature; Rex Black, also lobbyist for timber owners, California Legislature; Walter F. McCulloch, retired Dean of the School of Forestry, Oregon State University, Corvallis, Oregon; Thornton Munger, retired head of U.S. Forest Service Experiment Station, Pacific Northwest Region; Leo Isaac, retired, genetics research in the U.S. Forest Service Experiment Station, Pacific Northwest Region; and Walter Lund, retired chief, Division of Timber Management, Pacific Northwest Region. Copies of the manuscripts are on deposit in the Bancroft Library, University of California, Berkeley; The Department of Special Collections, University of California at Los Angeles; and the Forest History Society, Yale University.

Interviews done for the Forest History Society under other auspices include: Emanuel Fritz, professor of forestry, University of California, Berkeley, with funding from the California Redwood Association; and a forest genetics series on the Eddy Tree Breeding



Station with tapes by W. C. Cumming, A. R. Liddicoet, and N. T. Mirov, currently funded by the Forest History Society Oral History Program.

The Regional Oral History Office was established to tape record autobiographical interviews with persons prominent in the history of the West. The Office is under the administrative supervision of the Director of the Bancroft Library.

Willa Klug Baum, Head  
Regional Oral History Office

Regional Oral History Office  
Room 486 The Bancroft Library  
University of California  
Berkeley, California



## INTRODUCTION

Much of the forest research now being conducted in the Pacific Northwest has its roots in some of the early, albeit primitive, investigations that began in the decade before World War I. One man in particular has the continuity of experience to comment on the development of this phase of natural resource research: Thornton T. Munger, who came in 1908 to the "Division of Silvics" of the United States Forest Service in Portland, Oregon, as a greenhorn from Yale. In 1924 he became the Director of the Pacific Northwest Forest Experiment Station, then returned to full-time research in 1938 as Chief of Forest Management Research at the Station, a position he kept until retirement in 1943. The following interview was conducted to supplement the two existing sources of documentation of his career: his diaries, now deposited at the Forest History Society, Yale University, and his memoirs that were mimeographed in *TIMBERLINES* of the Thirty-year Club of the Region Six Forest Service in December, 1962.

From the beginning of the research efforts in the Northwest, the response of timbermen outside the Forest Service was little more than "a respectful hearing" for Munger and his associates as they spoke at logging congresses and industrial association





meetings. In fact, in those first decades, forestry research results had been used mainly by the timber managers within the Forest Service itself, although occasionally even there a lag developed between what research indicated and what the actual practices were. However, it must have been reassuring that, in Munger's words, "The bulletins and Research Notes issued by the Station were used as text books at the forest schools, [thereby spreading] the fruits of research to new generations of practicing foresters."

In addition, other factors later evolved which proved that the early investigations had begun at a propitious time in a field where research results depend on years and even decades of tree growth. It was after thirty years of silvicultural research when forest technology led to less destructive logging, and, coincidentally, forest owners began consolidating their lands into holdings large enough to allow planned cutting cycles. Then when the building boom got underway in the 1940's, the timber industry suddenly found that the practice of good forestry had become economically feasible. Forest managers in the Northwest began looking for the information provided by the growth studies, the regeneration research, the fire protection and control techniques, and the land management economic studies, all of which fortunately had begun long since at the Experiment Station.



What goes into the making of a leader in forest research? Thornton Munger grew up in New Haven in a house facing Hillhouse Woods, which he roamed at will. His nature interests were evident in his attraction to the "out-of-door poetry" of Wordsworth and Emerson, which began with his stepmother, who "could quote it by the yard." In school, he leaned toward "out-of-door things and science...I kept lists of flowers that I found and that sort of thing..."

His father, who was the subject of Benjamin W. Bacon's biography, Theodore Thornton Munger, was the minister of the Congregational Church in New Haven. As such, he earned recognition as a leader in the growing edge of religious and social thought. (He surprised staid New England by inviting both a rabbi and a Catholic priest to speak.) He was also a member of the Yale Corporation board and author of several books on general literature. Family letters, now deposited at Yale, show that many of the significant people of that time were in contact with Reverend Munger and often visited his home. It is probably true that young Thornton "didn't take much interest in what old theologians [were] talking about..." However, his career reveals the same awareness of societal needs and the integrity of commitment that probably filtered out through the table talk between his father and his distinguished guests.

Before Thornton Munger finished high school, he transferred



to Hotchkiss School in Lakeville, Connecticut, then--not surprisingly--entered Yale College in 1901. It was his college summers at Milford, the old Gifford Pinchot estate, working at and discussing forestry, that led him into the field. While he did not have forestry per se in his undergraduate curriculum, and while he mentions that he was intrigued by English as a study during these years, it was forestry that focused his post-graduate trip to Europe. With a "sheaf of letters of introduction" from none other than the Yale forestry school dean, Henry S. Graves, he contacted foresters in Germany, Switzerland, and Austria and studied their intensive management which over several generations had come to exceed anything being done or perhaps even needed in this country.

So it was that when he enrolled in the Yale School of Forestry (a graduate school) in 1906, he was probably less a novice than many of the entering aspirants. He describes the faculty as "young and vigorous," and well he might, for at that time in the new field of forestry most of the instructors on any faculty were themselves recent graduates.

Passing the test for the U.S. Forest Service upon graduation from Yale, he expected to go to the romantic West and run boundary lines, but instead was plucked as one of the chosen few to go to Washington, D.C. and work for Raphael Zon's "Division of Silvics," the research arm of the agency. But he



did not stay in the capitol long. Soon the Service detailed their two-month employee to Oregon to study the encroachment of lodgepole pine on western yellow (ponderosa) pine. Because just at that time Chief Gifford Pinchot was forming the six administrative districts of the Forest Service, Munger was assigned to the new Portland district office, and there he stayed through his entire career.

His tenure at the Station produced significant studies and also leading figures in forestry. A new college graduate named Richard E. McArdle "with boundless enthusiasm and inventiveness" tackled growth and yield studies; he was to become the Forest Service's Chief almost thirty years later. Walter H. Meyer, later a professor at Yale University, worked on mensurationist problems at the Station. And there are others, most of whom he comments on during the interview.

Before his promotion to Director, he worked on the genetic studies, the planting of growth plots, reconnaissance, and plantings at the Wind River nursery. There were also short-term investigations, such as an avalanche study in Washington and the experimental plantings on the Oregon Dunes to stabilize the shifting sands.

As Director, he was both administrator and researcher at first, but gradually the administrative duties kept him office-bound. His writing continued. The growth and yield studies





continued. Genetic studies continued. New studies were added. There was controversy over whether clear cutting or selective cutting should be used in timber management of Douglas fir, the selective method appearing more feasible to the forest economists, the clear cutting (or block cutting) urged by Munger and others for its more long-range silvicultural superiority. The controversial paper of Axel Brandstrom and Burt Kirkland was published, recommending selective cutting, and for a short time the Regional Forester's management policy was at odds with the Experiment Station's official recommendation. There was also the national Forest Survey of 1929, and insurance and taxation studies in which the Station participated as part of nation-wide projects. Through it all, Munger says he was "not interested in research for research's sake, but wanted to see research put into use, and so far as I had any influence, we did all we could to get the results before the public."

Outside his life as Director, Munger was deeply involved in conservation issues, such as the establishment of the Forest Museum and the creation of a large forest park north of Portland. As one might expect, these efforts are marked by the same perseverance and organizational ability that his directorship shows.

To conduct the interview, which was made possible by a grant from The Hill Family Foundation to the Forest History



Society, the interviewer flew from the Regional Oral History Office in Berkeley to Portland. There, according to previous agreement, Munger was interviewed intensively for four days. The interviewer had been armed beforehand with a sheaf of notes and questions which had been gleaned from Munger's diaries in the Forest History Society at Yale and sent to her in Berkeley.

His tall house of yellow shingles is one of a spiraling row of homes which, with stone retaining walls, wrap around a hill overlooking, on one side, the city of Portland with Mt. Hood in the distance, and on the other side a canyon with hills beyond. When he met the interviewer at his front door one overcast January morning in 1966, his cordial greeting was followed by a polite protest that an interview was probably unnecessary because he had said it all in *TIMBERLINES*. His New England sense of propriety was probably what caused him to acquiesce to at least a first session designed to supplement his previous memoirs.

Inside, the Persian rug, overstuffed furniture, and landscape paintings warm the living room. Tables, a desk, and bookshelves are enriched by family photographs and memorabilia. Although it was January there were sprays of early-budding shrubs in vases atop the grand piano, and potted flowers bloomed profusely in the windows. A tall copper ewer brightened a corner behind a large chair, and nearby a grandfather clock stood ready



to clang out the change of hours. From the windows of the dining room, Munger pointed out the next hill where sits the city zoo and the museum complex which will eventually include the site of the new forest <sup>Industry</sup>~~history~~ museum, his long-time project.

With tape recorder plugged in, the interview began with questions on his childhood, an area included in neither his diary nor TIMBERLINES. His answers, as can be noted in this transcript, are at first efficient, even cryptic--a reflection of his doubt that anyone would be interested in that topic. However, as the interviews progressed through the remaining four sessions, Munger's efforts became a serious attempt to portray the growth of Northwest research activities in as realistic a picture as possible. When events had faded from memory, he resisted any urge to answer with educated guesses such questions as those about his part in the Rexford Black hearing for the Society of American Foresters.

Munger carried on the conversations in a well-pressed business suit that included a vest adorned with a gold watch and chain. The rocking chair in which he always sat rocked gently, its squeaks lending a certain air of authenticity to the tapes. Each day the interview was closed off at four o'clock to allow him to visit his wife, who was very ill in a Portland rest home.

The efficiency that has enabled Munger to lead a productive



life in both the Station and in his civic responsibilities appeared also in his judicious way of operating during the interviews: he rarely indulged in the luxury of lost motion; he resisted any topics that might prove to be repetitious of previous efforts; he carried a clock-like sense of time in his head.

In general, each session followed an outline to which he  
\*  
agreed beforehand. One eye-witness story cropped up that had not been mentioned in the notes on his diaries and was only briefly included in TIMBERLINES: Gifford Pinchot's reaction the evening President Taft fired him as the Chief of the Forest Service. This was the climax of the Ballinger-Pinchot affair, a turning point because it dramatically brought into question Taft's image as a devoted follower of the Theodore Roosevelt policies. This episode paved the way for the new breed of Democrat, in the form of Woodrow Wilson, to take over the Executive Branch two years later. Munger, a young forester on a brief detail to Washington, D.C. in early 1910, happened to be a guest for a "family dinner" at the home of his brother-in-law, Philip P. Wells, when the other guest, Gifford Pinchot, arrived with Taft's terse message in his hand. Now, fifty-three years later, Munger has cautiously recorded all he could reconstruct about that dramatic evening.

Five months after these sessions were completed, the

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\*See appendix II for sample of proposed outline for entire interview.





interviewer had a chance to return to Portland, and Munger agreed to a final recording session on miscellaneous topics that had not been touched before. Later when he received the first draft of the transcript, rough-edited into chapters by the interviewer, he gave it the careful attention of his detailed mind, filling in uncertain passages, adding sentences here and there, and pointing out one or two accidental repeats of subject matter that had crept in because the sixth session had been held so long after the fifth. The pictures that are in the primary copies of the final transcript are also the results of his efforts.

This interview is part of an on-going series conducted by The Regional Oral History Office, Berkeley, with people prominent in natural resource conservation.

Amelia R. Fry

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\*See appendix II for sample of questions used in final editing.



## PHOTOGRAPHS

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Some photographs in primary copies only.



PART I

EDUCATION AND EARLY RESEARCH



## CHILDHOOD

- Fry: To begin with, when were you born?
- Munger: I was born in western Massachusetts on October 3, 1883.
- Fry: Was this in a town?
- Munger: Yes, in North Adams, Massachusetts.
- Fry: What did your father do?
- Munger: My father was a minister of the Congregational Church, and we moved to New Haven when I was quite small and lived there until I came west.
- Fry: Then you were in New Haven before the turn of the century.
- Munger: Yes.
- Fry: Do you remember very much about it?
- Munger: Quite a bit.
- Fry: Where did you live in New Haven?
- Munger: I lived on Prospect Street, which is the same street on which Yale forest school was later established, and where it still is.
- Fry: It might be interesting to have a description of your house. Do you remember that? Sometimes it's hard to remember the interiors.
- Munger: I remember every detail of it. My father built the house in 1890, in a residential district which was, at that time, fronting what was called the Hillhouse Woods, eighteen acres in the heart of the residential district belonging to the





Munger: Hillhouse estate. There I had an opportunity to roam over those acres, collecting chestnuts and flowers and coasting downhill as a boy. That has all been acquired by the college and has largely been covered by college buildings since then. That was quite a unique feature of my youth. I do laugh sometimes when thinking that our house had six bedrooms on the second floor and one bathroom, which was considered ample. The maids occupied the third floor, with no bathroom except in the basement for their use, a condition that seems very strange now for what was considered quite a comfortable house.

Fry: It does seem a comfortable house. Was it a parsonage?

Munger: No.

Fry: He built his own private house?

Munger: Yes.

Fry: How many maids were there?

Munger: There were always two.

Fry: Did you have a cook?

Munger: A cook and an upstairs girl, yes.

Fry: One of the two girls cooked, then.

Munger: Yes.

Fry: You must have some interesting memories about these maids and cooks. Could you give us an anecdote to give us a picture of what relationship they had to the family?

Munger: They were largely Irish girls, paid then just a pittance, and they stayed years and years and years with us. I had contact with relatively few, because each remained so long with us.



Munger: They were exceedingly contented and happy, I think, on their very small wage and very slight needs in comparison to modern demands.

Fry: I guess they did what we call babysitting today, and house-cleaning and washing. Were you much aware of their duties?

Munger: I was past the babysitting stage then, of course. They did everything except washing, because a washerwoman came in for the washing one day a week.

Fry: Did your dad do a lot of writing, besides his sermons, I mean?

Munger: Yes. He was an indefatigable worker and accomplished a great deal besides his pastoral duties, and he produced about half a dozen books.

Fry: It would be good to have a bibliography, if you have one.

\*

Munger: Yes, I do.

Fry: These were largely on theology?

Munger: No, on general literature. Some were volumes of sermons, but some were on general literature, like The Life of Horace Bushnel, which was one of them.

Fry: He sounds like a very literate man.

Munger: Yes, he was. I have his biography here that after his death was written by Benjamin Wisner Bacon. [The book is entitled Theodore Thornton Munger, published by Yale Press.]

Fry: Was he active in the community at all?

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See appendix IV



Munger: Yes. Our church was a downtown church, as he used to speak of it as a municipal church and wanted it to have a place in the life of the community. He organized a Sunday evening service that became tremendously popular by getting distinguished lecturers there--not sermons but lectures on Sunday evening. They became quite an institution. He surprised staid New Haven by having a Catholic priest there at one time in the Congregational Church and at another time a Jewish rabbi as speakers, which was something a little progressive for New Haven at that time. But now nothing would be thought of it.

Fry: In all, did he have pretty good community support, or was he considered slightly dangerous?

Munger: He had a very strong following and was one of the most influential people on the Yale Corporation for many years. He devoted a good deal of time to Yale University affairs.

Fry: He was not in any way employed by the University; he had no connection with the chapel officially?

Munger: No, he didn't.

Fry: Is there any particular issue or Yale University activity with which he was associated?

Munger: He served on the Yale Corporation, which is like a board of overseers, for many years, and he gave a good deal of attention to that.

Fry: Was his interest rather broad, then? Did it extend over the whole institution, or did he have a specialized role to play?

Munger: It was a broad interest. He did a little money raising for the college. I remember on one occasion he went to New York to see a classmate of his and came back and said, "Well, I got



Munger: a gift that will build a new law school building." I think the amount was about \$150,000, which then built a very respectable building which became the headquarters of the Yale Law School. My father got the money to finance it on a one-day trip to New York.

Fry: Was he equally successful in raising money for his church?

Munger: I don't remember that as an issue at all. I don't think he took a part in that; that was up to the deacons and the officers of the church.

Fry: I guess that you attended public schools in New Haven then.

Munger: Yes, until the third year in high school, when I went to Hotchkiss School in Lakeville, Connecticut. From there I went to Yale College, where I graduated in 1905.

Fry: Can you tell us anything about your school instruction that might be interesting for historians to know?

Munger: Well, my interest was toward out-of-door things and science, but the prescribed curriculum at that time didn't allow for very much of that until the late years in college. I kept lists of flowers that I found and that sort of thing.

Fry: Did you go hiking much?

Munger: Yes, a great deal, and bicycling.

Fry: What other activities did you use to satisfy this interest in the out-of-doors?

Munger: At that time, as I said, New Haven was quite close to woodsy areas, and in college days my classmates and I did a good deal





Munger: of hiking and snowshoeing in the park land and wild woods of the environs of New Haven.

Fry: Were you the sort of boy who always brought home various samples of wildlife from these hikes?

Munger: Yes, I collected everything, as boys do.

Fry: Were you encouraged in this by your father or your mother?

Munger: Yes, particularly by my mother, ( actually my stepmother, for my mother died on my third birthday ) who had a great interest in flowers and out-of-door things.

Fry: Did you plant a garden or anything like that at home?

Munger: In a small way, yes.

Fry: Nothing that would be significant in your growing up?

Munger: No.

Fry: Well, what other interests and hobbies did you have as a boy?

Munger: I think that that really sums it up--a general interest in the out-of-doors, flowers and animals, pets of all kinds, which I had.

Fry: Did you have any unusual pets?

Munger: No, I don't think so, nothing other than what the ordinary boy that loves the country picks up and collects.

Fry: Snakes, lizards, frogs, and so forth?

Munger: Yes. We always had about two months in New Hampshire in the summer, and that was where I had the pleasantest outdoor days of my youth, in the lake country of New Hampshire every summer.

Fry: Did you have a cabin up there?

Munger: No, we just stayed in farmhouses, as was done in those days,



Munger: for seven dollars a week.

Fry: And the farmers put you up?

Munger: Yes.

Fry: At this time, were you around any of the small tree lots that some of the farmers kept for timber cutting?

Munger: Yes, but they had no thought of practicing forestry on them. It was in those days that I got quite familiar with Eastern hardwood forests in that way.

Fry: Being a minister's son, were you interested in philosophy?

Munger: I wouldn't say so, no.

Fry: Did you have much of this in your home, such as discussions of theology?

Munger: We had many distinguished men as guests in our house. In those days it was the custom to entertain the visiting lecturers and preachers at the college chapel, so around our table I heard a great deal of stimulating talk that probably I didn't appreciate at the time.

Fry: Did this give you any particular outlook on social issues?

Munger: No, I don't believe so, other than the fact that my father was very progressive in his thinking for those times, which probably helped broaden my outlook on social action matters.

Fry: Would he have been a single taxer?

Munger: No.

Fry: I'm not quite sure what you mean by progressive.

Munger: Well, it's totally different from what we think of as being progressive now. As a theologian, he was exceeding liberal,



Munger: and in his attitudes towards social reforms he was a forward thinker.

Fry: Do you remember any specific issue, such as labor and its attempts to get organized around that time?

Munger: I remember one of my older sisters mentioning that one of his parishioners came to my father and complained about parcel post, saying that that was a move towards socialism and they ought to do something about stopping it. That perhaps is just a little indication of the attitude of the times.

Fry: So progressivism then was quite different from what it would be today. This is really one of the difficulties in understanding this in terms of the times in which it happened.



## VISITORS AND CORRESPONDENCE

Fry: Who were some of the visitors to your house?

Munger: [Perusing old letters] Mother kept some letters that she thought were interesting, most of them in regard to being at our house. That bunch came to me.

Fry: It might be a good idea to identify some of these people who corresponded with your parents and who were visitors in your home.

Munger: Here are two from Lyman Abott. He was editor of The Outlook.

Fry: He visited your house frequently while you were a boy living at home?

Munger: Not frequently, but now and then. I don't know if some of these people were at the house or not.

Mrs. Ballington Booth Clibbon, Salvation Army, was a speaker in the church. She signs her name here Catherine Booth Clibbon. That was the split, you know, in the Salvation Army. Would people know who Emory Bradford was?

Fry: Some would. Do you remember much about him?

Munger: Somewhat, yes, but some of this was while I was in college, and I wasn't eating at home all the time.





Fry: I would like you to talk about those whom you had contact with.

Munger: Here's one from John Graham Brooks; he was a well known person. Samuel Capin was the head of Smith College, I believe. There are some letters here from John Greenleaf Whittier, but he never visited at our house. I never saw him, but he and my father exchanged letters. My father went to his house. Here is Samuel Crothers, quite a well known author.

Fry: Did you meet Crothers?

Munger: Yes, I remember him.

Fry: How did you meet him?

Munger: Just as a youngster would, at the table. I suppose I heard him when he preached at the church.

Here's somebody--the president of Williams College, but I can't read the signature. And George W. Cable, editor of the Century.

Fry: Do you remember anything about him?

Munger: No, I can't say I do. Some of these--I don't know who they are, and I don't believe your readers would be interested. Here's a letter from President Eliot of Harvard, but I don't think he came to our house. I had seen him and met him.

Fry: Most of these were men whom your family entertained because they came to New Haven to give speeches at the chapel, is that right?

Munger: Yes, or at my father's Sunday evening services. But some of



Munger: these letters aren't in regard to the house guests. Isn't it remarkable how these busy people wrote longhand letters?

Fry: Yes, it is.

Munger: No secretaries. I think they worked harder at it than they do nowadays when the men get their secretaries to do all the work.

Fry: You mean you think they really sent out more letters?

Munger: Well, they made more effort themselves than they do now when they just tell a secretary to go and answer this and tell them I can't come or I will come.

Fry: Yes, I can see they are more a reflection of their true personalities.

Munger: Then they wrote nice longhand letters, friendly letters. It established a kind of relationship. There are a lot from Richard Watson Gilder, editor of the Century magazine. This particular letter is, I think, probably one of his earlier ones when I was still pretty small.

Fry: I hope we can file some of these letters along with this interview. You have quite a collection of them.

Munger: These are partly in regard to some articles that my father was writing for the magazine. Daniel Gilman, head of John Hopkins.

Fry: Do you remember anything about Gilman?

Munger: No.

Fry: He's a pretty important Western figure too, I think, as first



Fry; president of the University of California.

Munger: Here are several from Edward Everett Hale, who wrote "A Man Without a Country." I don't think he came to our house. The three or four letters are mostly about a statue of Nathan Hale being made for the Yale campus. Cuthbert Hall--I don't think he came to the house.

Fry: We have quite a list here. Do you remember any of these men in particular?

Munger: I have only my recollections of them as a small boy. You know that teenagers don't take much interest in what old theologians are talking about.

Fry: You just have a vague memory of this period then?

Munger: Yes. I do remember that George A. Gordon was a marvelous storyteller, and he used to have the table in gales of laughter, exchanging more or less ministerial jokes. He was quite a frequent visitor and admirer of my father.

Fry: Could you identify George A. Gordon for me?

Munger: He was the pastor for a long time of the Old South Church in Boston. He was a Scotchman and came to this country as a stonemason. That is the most swanky church in Boston. He was a big, burly, genial Scotchman with a good deal of a brogue, but he certainly had Boston at his knees.

Have you ever heard of Sheldon Jackson?

Fry: I'm afraid not. Who was he?

Munger: He was in charge of Alaska education and was general agent. He's



Munger: the one that introduced the reindeer to Alaska as a food supply for the Indians, and it was considered quite a stunt. He went to Finland and got the European reindeer, which is different from caribou, and brought them to Alaska.

Fry: This is right up the alley of your interests. Did you get to talk with him?

Munger: Well, not at that time. This was in 1903. I was in college, but I do remember that he was quite short, and he said that it was a great convenience because when he was travelling in stagecoaches he could lie down the length of the seat. [Laughter] That little incident stuck in my mind as a joke on himself.

Here's William James, of January 11, 1899. It says, "I'm obliged to say 'no,' for I have found it necessary on grounds of health to forswear all lecturing outside of the college classrooms, and this resolve is likely to be permanent, to my great regret. But for this, I might gladly accept your flattering invitation." You know he was the brother of the novelist.

Fry: The main thing I wanted to get down here was a picture of the very enriched environment in which you lived.

Munger: Well, I don't think that these had a great effect on my interests.

I gave you the name of Hamilton Mabie, didn't I? He was editor of the Christian Union. These letters were in the late 1880's and '90's. He was quite a well known writer and editor. I don't know what to do with these letters. I don't know if





Munger: autograph collectors care for this kind of stuff.

Fry: Well, I think some of those ought to go into archives, because they are from people who probably have correspondence placed in archives already.

Munger: Archives where?

Fry: It could be either at California or on the east coast at Yale.

Munger: Yale grabs on to everything, of course. They've got lots of room there.

Fry: I'm sure they would be very interested in those if you're ready to give them up, or see that they get deposited in a safe place.

Munger: Some of them are rather interesting--the ones that discuss their reading, and so on.

Fry: I think that all those would fit into collections at Yale and the local literary and theological scene there at the turn of the century.

Munger: Yes. Maybe in culling them over they might find some that are worth preserving. My children I don't think are particularly interested in them, and they don't know who any of these people are. They are entirely detached from that environment.

Fry: People working in that field would find these letters very valuable, and they should be made accessible to them and also properly catalogued and kept in a safe place.

Do you have anything you would like to add to this picture of social life in your family, these people who came and went



- Fry: and how it affected you?
- Munger: Booker T. Washington was one that occurs to me that was significant.
- Fry: Did you get to talk to him? How did he impress you?
- Munger: Yes. Well, as a very brilliant man, a gentleman that was at home and at ease in any group, any group, any company. Of course I knew little about him at the time, because that was before I had read his Up From Slavery and he had become more of a national character.
- Fry: Did he stay overnight at your house?
- Munger: Yes.
- Fry: Why was this?
- Munger: He had lectured in New Haven.
- Fry: I just wondered if he had trouble getting hotel accommodations, since he was a negro.
- Munger: Well, I think my father anticipated that by inviting him to the house, yes; but he probably would have had trouble--at the leading hotel, anyway.
- Fry: What about your mother and sisters and brothers? What were they like?
- Munger: My mother was so interested in encouraging my interests in out-of-door things that I think it was quite a stimulus to me.
- Fry: Was she the typical busy minister's wife?
- Munger: Yes, I think so. She did a great deal of his pastoral work with him.
- Fry: How many brothers and sisters did you have?



Munger: I had three sisters, no brothers, all older.

Fry: That sounds like a pretty lethal situation. [Laughter]

Munger: Yep.

Fry: All those big sisters bossing you around. What kind of interests did they have which you remember, I mean something that would be relevant to your own life. Do you remember participating in anything with them?

Munger: No. They were considerably older, so that I didn't join in the things that they were doing particularly.

Fry: There was quite an age gap, you mean.

Munger: Yes.

Fry: What sort of periodicals do you remember seeing and reading in your home?

Munger: There was one that made quite an impression on me, "Dumb Animals," I think. It was in regard to protecting animals. Otherwise, we had the usual line of magazines that were prevalent in those days, mostly non-illustrated, as they were in those days.

Fry: Did you like to read?

Munger: Not particularly, no.

Fry: But you did have quite a flow of material coming in?

Munger: Yes.

Fry: And I guess you had a library in your home available to you, didn't you?

Munger: Yes. Sets of all the classics. The remnants of it are still here.

Fry: Do you remember browsing in any particular books before you



Fry:       went to college?

Munger: I mentioned that I enjoyed Shakespeare, and I enjoyed the out-of-door poetry, like Wordsworth and Emerson, especially through the influence of my mother, who could quote it by the yard.





## YALE COLLEGE

Fry: You went through your last two years of high school at the Hotchkiss School and entered Yale College. Did you know when you entered Yale that you were going to be a forester?

Munger: No, but I early took an interest in it because of the proximity of the recently established forest school. Pinchot was quite in the limelight then as a pioneer in the forestry movement, and I thought that was something that I would like. So all my summer vacations while I was in Yale College were spent more or less in forestry activities. In 1902 I went to the short summer course in forestry at Milford, and the next year I worked in the Maine woods on a party studying the growth of white birch. The next year I was manager of the Yale forest school summer camp, so that gave me quite an introduction to the subject of forestry.

Fry: You were "manager" of the summer camp?

Munger: For lack of a better term, that is what I called it. It was sort of a roustabout too. I would do the buying and see that the cooks did their work.

Fry: I see. This study of growth of white birch in the Maine woods-- how did you go about studying that? What methods were used then?

Munger: That was what was called stem analysis. We cut down sample trees and then counted their rings, which is quite difficult to do,



Munger: because white birch rings are very obscure. In that way, we determined the rate of growth of individual trees and stands.

Fry: Did you use any special statistical methods?

Munger: I had nothing to do with working up the data. All I did was chop down the trees and count the rings, and others did the work in Washington later on. That was a summer that I have long remembered, traveling entirely by canoe and having as our woodsman a French Canadian who used to argue about whether the world was flat or round. He scoffed at the idea that it was round.

Fry: What did he do as woodsman?

Munger: He was camp-tender and chopper.

Fry: What did you do at the summer camp at Milford?

Munger: The first summer Yale conducted a short course (and I think that year, 1902, was the first year of it) to acquaint people with what forestry was all about. We studied dendrology and the rudiments of forestry and forest mensuration. It was a short course to acquaint people with forestry to see whether they were interested in going on with it or not, and I found out there that I was.

Fry: Did they bring in professors to give lectures?

Munger: Yes. All foresters were young then, but they had a group of young men, most of whom became distinguished leaders in forestry later.

Fry: Who were some of them?

Munger: Walter Mulford, who later became dean of the University of



Munger: California, James Toumey, who was a full-time professor and at one time dean of the Yale forest school, and others whose names I've forgotten.

Fry: Did Pinchot drop in?

Munger: This was on the Pinchot estate, and he visited the camp at times. In that way we got the personal contact and inspiration from his magnetic character and his enthusiasm for forestry.

Fry: Did this impress you and the rest of the boys at the time?

Munger: Yes, his magnetism was what attracted many people in those days to the profession.

Fry: Of the people on the staff, who impressed you most?

Munger: It's hard to say. It was between Mulford and Toumey; they were both, to us youngsters, very stimulating teachers. There were ideal out-of-door conditions, living and eating together in camp.

Fry: Did you do any work in the woods?

Munger: Oh yes. Well, not work, but a great deal of the curriculum was in the woods of the Pinchot estate.

Fry: There was no research that you helped out at Milford?

Munger: No.

Fry: What was your curriculum like at Yale College?

Munger: At Yale in the freshman year you had no choices; Latin, Greek, mathematics, English, and a language were required. The sophomore year you had a choice of five subjects out of ten. By senior year there was considerable latitude in the choice of subjects. I chose a good deal of science then--geology,



Munger: minerology, forest physiography, and botany.

Fry: Did you have any great loves in these other areas, such as languages, math, or English?

Munger: I had a very great dislike of Greek, which I had to repeat one term of in my sophomore year. I had no great capacity for mathematics, so that was kind of hard work. But I enjoyed English and took a good deal of English, which stood me in good stead since then.

Fry: Was this writing or the study of literature?

Munger: Both composition and the literature. That was my minor during senior year.

Fry: Did you have any *favorte* authors or poets at that time?

Munger: Well, that's a pretty hard question. I read all the plays of Shakespeare, partly for my own pleasure rather than in course work; also most of George Eliot, J.F. Cooper, Scott, Thackery, Hawthorne, etc. I think I read everything that John Burroughs wrote.

Fry: What about history?

Munger: I had the usual modicum of history, from classical to modern, but most of that I took in prep school.

Fry: In your life as a student at Yale College, did you live on the campus in a dormitory, or did you stay at home?

Munger: I lived in a dormitory most of the time but took some of my meals at home, which was within walking distance.

Fry: We've gone over the curriculum; what were some of the extra-curricular activities that you were interested in besides the





Fry: summers in forestry?

Munger: Nothing was outstanding. I wasn't an athlete particularly. I sang in the chorus for the bicentennial celebration and participated in small group activities like Snowshoe Club.

Fry: Was that a hiking and camping group?

Munger: Yes.

Fry: What about student political life? Was that very evident when you were there on campus?

Munger: No, it wasn't active in my day.

Fry: What did you boys do for recreation?

Munger: In those days, relatively few were actively engaged in sports. It was a situation that has been overcome now. Hundreds of us used to walk out to the athletic field to watch the others play, and it was about a three mile walk out there and back. There was quite a proportion of the college community that walked out to the Yale playing fields to watch the others practice or play games.

Fry: This wasn't football, was it?

Munger: Both football and baseball.

Fry: What about student ale houses? Were any of these around Yale at that time?

Munger: Oh yes, and they were patronized by some, over-patronized by a few, but they didn't form a very important part of my life.

Fry: Was there very much contact with your professors outside of class?

Munger: No, I think very little. That is a situation that is now much



Munger: better at Yale. Some of the classes were very large for those days--just lecture courses where the professor didn't know the names of the students. They were inspiring teachers, but there was no very direct contact outside the classroom.

Fry: Did you have any favorite professors in your undergraduate days whom you would want to comment on?

Munger: Well, Herbert Gregory in geology was a very inspiring teacher; Kryder in physics was another. Professor Sumner was the internationally known economist whose lectures were very significant.

Fry: Have you ever been able to trace anything in your career back to some special class or course that you had at Yale that was quite significant for your later career?

Munger: No, I wouldn't say so, except for the course in forest physiography, which I was able to take in my senior year and which was given by Isaiah Bowman, who had just written a book on the subject, which we used as a textbook. That has been a very useful source of knowledge for me since then.

Fry: When did you get your Bachelor of Arts degree?

Munger: 1905.

Fry: Did you go right to Europe after that?

Munger: When I graduated in 1905, I had an opportunity to travel. I wanted to go directly to the forest school, but Dean Graves of the forest school recommended that if I had a chance for travel in Europe, particularly studying European forestry, to take it then rather than later. So I went to Europe then for about nine months, three of which I spent in observing and studying



Munger: forestry in Germany and a little in Switzerland and Austria. That was a rich experience, and I've never regretted that I lost a year from my career in that way. Dean Graves gave me a sheaf of letters of introduction to German foresters that I used with good success in seeing significant forests, particularly where there were English-speaking foresters. Although I had had four years of German in college, I had no speaking knowledge of it when I got to Germany, but I learned awfully fast then.

Fry: How did this trip materialize for you? Did you go with your family?

Munger: No, I went with a bunch of classmates, and we bicycled in England for awhile and then walked in Switzerland. Then, after they had gone back home, I went to southern Germany and was by myself for three months, visiting different forests. I was six weeks in one forest, where I took German lessons from the Frau Oberforster and forestry lessons from the Oberforster.

Fry: What was it that you really got out of this and took away with you?

Munger: Well, I saw many of the typical methods of forest management in southwestern Europe. I had enough background in forestry so that I could comprehend what they were doing then, and it has stood me in very good stead since then--understanding the European methods of selection cutting and clear cutting, in spite of the wholly different economic bases that they had there from what we've had in this country.



Munger: The cheap labor and the high values were so different from conditions in this country, and that was what made European forestry so difficult to introduce in this country. It didn't fit our economic limitations. But now in this country we have developed our own systems of forest management and silviculture.

Fry: What can you tell us that would indicate some of their forestry practices which you observed?

Munger: The German foresters then were, as I presume they are now, highly educated, technical men who are both good silviculturalists and good managers, because they have to manage in a business way the forests in their charge. In southern Germany, nearly all the forests were communal forests, that is, they belonged to a village. And some oberforsters had several of these communal forests to manage.

Fry: They were hired by the village, then, to manage these?

Munger: Yes, I think so, although there was some connection with the province--Baden or Bavaria as the case might be.

Fry: Where was the one you spent six weeks in?

Munger: That was in Saltzberg, in Baden, which is on the edge of the Rhine Valley and the edge of the very large Schwartzwald, or Black Forest.

Fry: This intensive management, then, was an experience which really stood you in good stead later on when you were working?

Munger: Yes. It was something so far beyond what was being done in this country by our wasteful methods that it was an inspiration





Munger: to see how the systems of Germany had worked out.



## YALE SCHOOL OF FORESTRY

- Fry: So when you came back and started at the Yale School of Forestry, you really had a pretty good educational head start.
- Munger: I had a little head start that helped me out.
- Fry: Were there some Germany-forestry-oriented professors at that time on the Yale school of forestry faculty?
- Munger: Yes. Dean Graves had got his forest education mostly in France, as had Gifford Pinchot, because there was no forest school in this country at that time. Graves was thoroughly conversant with European forestry.
- Fry: Did you have Graves in any courses?
- Munger: Yes.
- Fry: How was he as a professor?
- Munger: He was a very live wire, dynamic, and I would say, <sup>inspiring.</sup> ~~inspiring.~~ Everybody at the forest school worked hard, and they all enjoyed their work and all enjoyed their professors. There was quite a different attitude from what there had been in undergraduate days.
- Fry: You mean in undergraduate days it was a little bit less serious?
- Munger: Well, yes. Perhaps in my case some of the courses were taken because I had to take them. It was partly that the youth of the undergraduate made his attitude different from the post-graduate student.
- Fry: You really felt that other students were just as serious as you



Fry: were about forestry?

Munger: Yes.

Fry: I'd like to know more about your reactions to other faculty members in the school of forestry there. You must have met men there with whom you had contact a great deal later on in your life.

Munger: Yes. The faculty was all quite young except for Professor James Toumey, who taught dendrology. But the others--H. H. Chapman and Ralph Hawley--were graduates of the forest school just three or four years ahead of me, and they were young and vigorous and very capable and have since then earned the reputation of being very competent, outstanding professors.

Fry: What about fellow students? Who was in your class who has become outstanding or with whom you have kept in contact?

Munger: Well, we had quite a cosmopolitan group that had come from all over the country, all of whom went there because they were thoroughly interested in the subject and took their work seriously. Many of them in that class have become quite outstanding in their profession. Notable among them is H. R. MacMillan, who later became Chief Forester of British Columbia and then had a serious breakdown with tuberculosis but bounded back from that. After he recovered from tuberculosis, he formed the H. R. Macmillan Export, Shipping, and Lumber Companies and became the largest and most successful lumberman in British Columbia. He was the youngest member of the class and also, I think, valedictorian.



Fry: Are there any others whom you remember especially as outstanding?

Munger: Several went into teaching, including Nelson C. Brown, who became the author of many textbooks on forestry. Do you want a recital of the other classmates?

Fry: Just the ones with whom you had a lot to do, perhaps your special friends.

Munger: Julian Rothery was one of the most picturesque characters, a great raconteur, and he became a forester for the Great Northern Paper Company.

Fry: Right away?

Munger: After a few years of consulting forestry, which followed a few years in the Forest Service.

Fry: I guess that most of you were being trained to enter the Forest Service, is that correct?

Munger: At that time, there was practically no other employment except the Forest Service and a few forest schools that were starting up, so that most of our class took the civil service examination for Forest Assistant with the expectation of going into the Forest Service in spite of the fact that the salary was not tempting.

Fry: In such a new field, do you remember any unusual uses of materials which were more or less in lieu of textbooks that had not yet been written?

Munger: Well, we used a good deal of the German literature that had been translated, such as Schlich's five volume Manual of Forestry,





Munger: and certain textbooks that had just been written. Then, of course, in matters of surveying and mensuration and so on, there were existing texts.

Fry: What do you think now of some of the subject matter that you had then, particularly the technical?

Munger: I think that it was rather remarkable that we got such a good course when the profession was so new and the professors were so new and there was a dearth of texts and experience to go by. I think the Yale school did a remarkable job of preparing us for a really professional career. It wasn't the idea of a vocational career. Some of the forest schools that started about that time had a course in cooking and a course in packing pack-horses, but Yale never went in for that sort of thing. It was held on a strictly post-graduate, technical basis.

Fry: And it was kept as broad as possible, I guess?

Munger: Yes. It was set up for a national basis, not provincial as some of the schools that have since become quite provincial in their teaching.

Fry: Didn't you go down to the South some time while you were in forest school?

Munger: The last term of the forest school was always held in the South, on the property of some large timber holder. We had our own camp and cook, and we then did field work out from the camp and learned practical experience in cruising and evaluating timber and studying some mill practices. In fact, we made



Munger: production studies in the sawmills. That has been continued ever since. Our class studied and camped in central Alabama for about ten weeks, and I was convinced at that time that I was not suited for living in the South.

Fry: Why?

Munger: The heat and the discomfort of the insects, and the nature of the people was so different from the New Englanders I was used to.

Fry: What was it that seemed most different to you in the people of the South, a general lack of education?

Munger: At that time, the standards of living and food and general education was so low, at least in the rural South, which was all that I saw, that it was quite astonishing to a northerner.

Fry: Do you remember what lumber company this was on whose grounds you were carrying on your studies?

Munger: It was ~~Kee~~<sup>Kay</sup> Lumber Company in Coosa County, Alabama.

Fry: That sounds like a good Alabama name.

Munger: Yes.

Fry: Was this your first experience at doing the production studies in the sawmills?

Munger: Yes.

Fry: Did you think that this was helpful to you?

Munger: Yes, although I didn't follow up particularly on the manufacturing end of forestry, it helped us learn our way around sawmills.

Fry: Then after this was over, you went back to Yale and received



Fry: your diploma, is that right?

Munger: Yes.

Fry: Did you have to write a paper for your degree?

Munger: No, I don't think so. We did that as we went along. But no final exams--no.

Fry: At Yale did you find any specialized interests within the general field of forestry?

Munger: No, I hadn't really narrowed it down to any particular field.



## DIVISION OF SILVICS, WASHINGTON, D.C.

Fry: Maybe we can move on to what you did when you first got out.

Did you take the civil service examination too?

Munger: While we were in the South, the Yale forest school crew was given a special civil service examination. That was two days of seven hours each. I remember that I wrote just as fast as I could for seven hours each day, and subsequently I felt sorry for the person that had to read all of that to grade the papers. But that was a thoroughgoing test of what you really knew. I got through the examination, as most of our class did, which assured us of appointments as Forest Assistants at one thousand dollars a year.

Fry: Did you have to buy your own uniforms?

Munger: No. They didn't have any uniforms in those days. That came later.

Fry: Did you hear right away about the results of the exam, and were you assigned a post right away?

Munger: Quite soon, yes, so that I got an appointment to go to Washington July first, 1908. I reported there expecting to be sent west to engage in what to us seemed the rather romantic life of boundary examination or administering these frontier forests. But instead, Raphael Zon wanted me to go into research. He was in charge of the Division of Silvics, which is research.





Munger: In fact he ordered me to, but said if I didn't like it I could get out and transfer to administration. So I started out in Washington working under an electric fan on a variety of office jobs for nearly two months. Then a request came from the West for somebody to study the encroachment of lodgepole pine on ponderosa pine. Well, I had never seen either species in the forest, so it seemed rather presumptuous to assign a forester who had hardly graduated from forest school to study this complicated subject, which nowadays would be assigned only to somebody with a couple of Ph.D.'s. But I went west for this three-month study and have been in the West ever since.

Fry: I'd like to ask you what was going on in Zon's office for those two months while you were there. Do you remember much about that?

Munger: Yes. As I look back upon it, it rather amuses me. I was asked to write some instructions on phenological observations, and I didn't know what phenological observations were until I looked it up. Then I was asked to revise a silvical leaflet on two or three different species. There was a big file of miscellaneous material, and they were condensing it into silvical leaflets on the various species of the country. I did two or three of those purely as an editorial or a compilation job. Then I was supposed to make a study of ash in the southern states, and I did some preliminary work on that. And then came this call for somebody to come to Oregon to make



Munger: that study of the encroachment of lodgepole pine on ponderosa pine.

Fry: Did you volunteer for this, or were you just assigned it?

Munger: I was just assigned to it.

Fry: What did you think of Raphael Zon?

Munger: Well, he was a very brilliant and highly intellectual, well-educated man, and a very pleasant person to work with. I saw a good deal of him in later years. He has been one of the outstanding names in the forestry profession.

Fry: He certainly has. Did he pretty much delegate everything to you and let you carry the ball?

Munger: I would think that was his general tactic--not dictating the details of how you did anything but turning you loose on a project and expecting you to deliver the results. His right-hand man was Samuel Dana.

Fry: Were you there when Dana was there?

Munger: Yes. He was Zon's right-hand man at the time and did a good deal of the field inspection work on the silvical studies.

Fry: Did you do any work for or with Dana when you were there?

Munger: Not that first summer but on many occasions since then, yes.

Fry: Dana seems to have been quite close to Zon through all this. Is this the way it seemed to you?

Munger: Yes. Dana was Zon's understudy in those days.

Fry: Did they get along quite well?

Munger: Yes, I think perfectly. Dana was in the Maine woods when I



Munger: was there in 1903, also on this study of white birch and poplar, and he wrote it up afterward. But I was in another crew, so I was not in the woods with him except for a very few days in 1903. However our acquaintanceship goes back to that time.

Fry: You and Dana both have a lot in common in your love for writing.

Munger: Yes. He's very distinguished in his enormous production on all sorts of subjects, and he's still at it.

Fry: Zon must have had a way of choosing people who could not only do research in forestry but who could handle the English language.

Munger: I think he partly did that, and partly they were picking research material from those near the top of the civil service list.

Fry: So this assignment was really kind of a plum, wasn't it?

Munger: Yes, depending on how you looked at it. Some people looked down on research in those days and would have considered it a lemon.

Fry: Was this point of view widely held among your classmates?

Munger: Yes, I would say so; in general the more romantic administrative frontier work appealed to them more than what they considered the ring-counting work of a researcher.

Fry: And you really preferred at that time to go to Oregon and run your boundary lines?

Munger: Yes. I supposed that would be my assignment.



Fry: So you finally did get to Oregon. By the way, how did you travel to Oregon?

Munger: Train, the only way to come in those days, to Portland, and then by horse stage all night to Prineville, and then seventy miles more to Bend and Rosland.

Fry: So you started out then on the problem of encroachment of lodgepole pine on ponderosa pine. Can you tell me how you educated yourself sufficiently to proceed with this?

Munger: Well, the forest school education had trained me in observation, so that I just kept my eyes open and used some of the techniques of making counts of seedlings and of trees under various conditions. I rode hundreds of miles horseback in central Oregon in this territory, where there is a competition between ponderosa pine, which used to be called western yellow pine, and lodgepole pine. I wrote a lengthy report at the conclusion of it, which I think is still sound, but others have other theories as to what is happening in this conflict between the two species.

Fry: What techniques did you use for this study? Could you explain them a little bit more? In other words, how did they differ from the way it might be done today, which would be very complex?

Munger: Well, in an empirical way I studied the composition of the forest, which had both lodgepole pine and ponderosa, by observational methods and some counts. I found many places where





Munger: there had been a ponderosa pine forest which had been killed by repeated fires and had been replaced by lodgepole pine. In other places where the lodgepole pine seedlings and the ponderosa pine seedlings were in competition, the lodgepole pine were getting the best of it. There was what I called a tension zone, which was suitable for both species, and there the lodgepole pine seemed to be gaining ground, I thought as a result of repeated fires which are disastrous to the ponderosa pine but not to the lodgepole, because it is such a prolific reproducer after fires. There was also a zone that was confined wholly to lodgepole pine, but there was the tension zone in between where the two species were in competition. And that worried W. H. B. Kent, a western forest inspector, who had his eyes open for problems that were going on, and who had suggested that this study be made.

Fry: In your recommendations, what was this controversial recommendation that you mentioned? You said that there is still some debate on the question today.

Munger: Since then there has been some study made in the same territory, and they thought that the problem was one of soil temperature, whereas I thought the condition was due to the presence of frequent forest fires.

Fry: Were you able to complete the study in just the few months that you were on it, or did you carry this on?

Munger: No. I wrote the report when I came back to Portland after



Munger: three months in central Oregon. The subject was dropped then.



## DIVISION OF SILVICS, PORTLAND, OREGON

Fry: From there, where did you go? Was it Portland, or did you go back to Washington first?

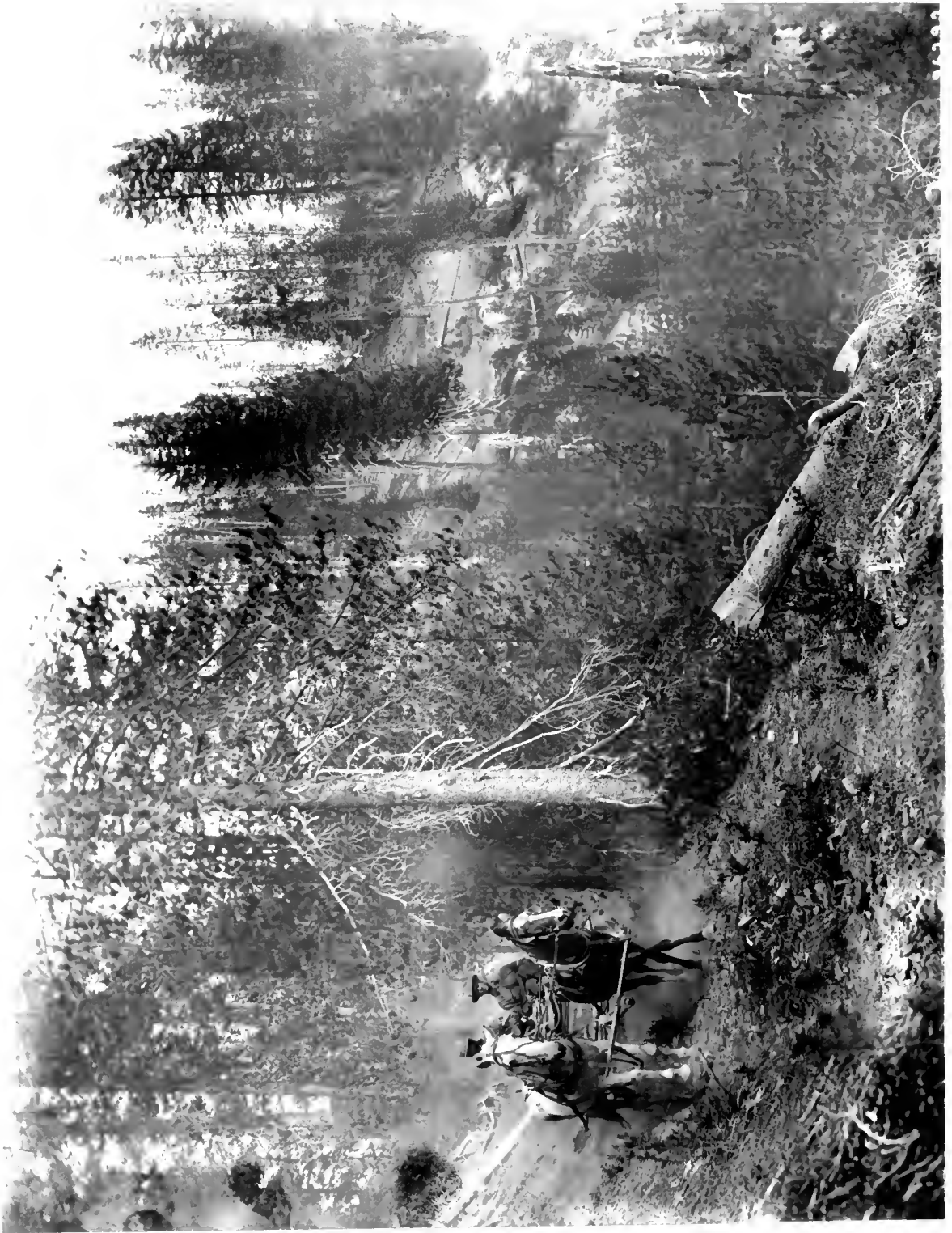
Munger: Well, I expected to return to Washington after this assignment, but late in the fall I got word to report to Portland, December first, 1908, because Gifford Pinchot was reorganizing the Forest Service into six western districts with headquarters at various western cities, each of which was to be a little miniature Washington office. I was designated to go to the Portland office, which covered the territory of Washington, Oregon, and Alaska at that time.

Fry: Was this in research?

Munger: Yes. The set-up provided for a Section of Silvics, as it was called, which was really research. I have since thought how wise it was that, in spite of the tremendous job the Forest Service had in getting these national forests under administration and adjusting the boundaries and building up a personnel and putting in the developments (the ranger stations and trails), they still allowed for space for research, small though it was. So I was in charge of the one-man Section of Silvics in the Regional Office, which was then called the District Office, in Portland.

Fry: Do you think that this policy of continuing a certain amount









Fry: of research was the result of Zon's influence, or was this mainly a Pinchot idea?

Munger: Of course the old Bureau of Forestry was really entirely an investigative or research organization. Not until 1905 did it take over the administration of the national forests. So the Forest Service inherited the concept of research and continued it on in the new Forest Service even after it had the national forests to administer, which became its major endeavor after 1905. That spirit of giving a place for research has persisted ever since with an increasing volume and better acceptance.

Fry: You went in under Fred Ames, didn't you?

Munger: Yes. Fred Ames was the chief of the Office of Silviculture and this was a section under Fred Ames, who graduated from the Yale forest school two years ahead of me, so he was quite an old man in the profession then.

Fry: Tell me how you first settled down in Portland. Where did you live?

Munger: Half a dozen of us went together in what you would call a boarding house and lived there on our meager salaries. Shortly after that we rented a house in a good residential neighborhood and employed a cook and maintained a bachelors' hall there for a number of years, until, one by one, we got married and broke up the group. That was headquarters for visiting foresters and for the Society of Foresters' meetings for many years.



Fry: What did you think about the people in the West as contrasted to those in New England?

Munger: Well, I enjoyed the western frontiersmen as I contacted them and got to know them well. They were, at heart, very unsympathetic with the Forest Service, most of them, and very critical of the Pinchot policies, as they called them, because they'd tread on the toes of many of them--stopping their land-grabbing and charging for grazing and doing away with the Land Office graft. But personally they were very fine to get along with. I was very fortunate when I went into this central Oregon country that I could ride horseback, because if you didn't know how to handle a horse, you didn't get any respect from the westerners in those days. I was able to hold up my end of it in that and was fortunate because I had ridden from boyhood.

Fry: But there were some foresters who couldn't ride?

Munger: A great many of these eastern forest school boys came out and didn't know which end of a horse to get onto.

Fry: It's interesting that as violently as the Forest Service policies were opposed, that in your personal relationships you had a rather warm spirit between you and the frontiersmen.

Munger: That was my experience. I don't think it was universally so, because some of the forest supervisors had a pretty tough time with the people that they were trying to put off who were trespassing, and with those charged for uses that they didn't want to pay for. But by and large, we greenhorn foresters







Munger: from the eastern forest schools got accepted quite quickly.

Growth Studies: Douglas Fir, Ponderosa Pine

Fry: What were some of your first duties as head of the Section of Silvics?

Munger: Well, I was sort of a roustabout there. When inquiries would come in from the public wanting to know about this or that, asking technical questions, I'd handle them. There were reports of diseases or insect pests, and I, although not a pathologist or an entymologist, ran them down and reported on them in several cases. In the first year, I thought the most important thing we could do was to make a study of the growth of Douglas fir, because that was the key to forest management in this region. So I started in 1909 a study of the growth and management of Douglas fir, and that was my principal activity that year and again in 1911, when the study was completed.

Fry: These were growth and yield studies, weren't they?

Munger: Yes. That first one was called The Growth and Management of Douglas Fir.<sup>\*</sup> It opened the eyes of foresters to the great potentialities of the Douglas fir forest as being profitable

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\* Forest Circular 175, published in 1911.





Munger: for management, but it didn't open the eyes of the lumbermen very much until a number of years later, when they began to realize the potentialities of growing Douglas fir as a crop.

Fry: How did you go about organizing your team, if you had a team, and preparing your growth tables? Did you use some of the same processes that you used in your studies in Maine?

Munger: In part, yes. We visited even-aged stands, of which there were a great many second growth stands, and laid out sample acres and made a tally of all the trees on the sample acre. We studied stands all the way from thirty years old up to a hundred and twenty-five, and they weren't very hard to find, because there was a great deal of second growth Douglas fir on old burns. So we got a sequence showing the volume of wood at thirty, forty, fifty, sixty years old and built our yield table in that way for different qualities of land--good, medium, and poor.

Fry: Is it true that up to this time it had never really been documented that Douglas fir had this rapid growth?

Munger: Yes. Ten years before, E. T. Allen, who was then an inspector in the old Bureau of Forestry (although that wasn't his title; he was a special agent, I think), made some study which was never published but was available in manuscript form. Our work did not hinge on that study at all; this was an independent study.

Fry: Can you tell me the difference between yours and Allen's?



Munger: No, I don't think I could. I've forgotten what the nature of his report was.

Fry: ] Was there a concerted effort to show your results to forest owners?

Munger: From the start, I was not interested in research for research's sake but wanted to see research put into use, and so far as I had any influence, we did all we could to get the results before the public. That came much greater into being a little bit later. Our initial studies were directed more toward the application by the private owner than by the Forest Service. We knew the Forest Service would not employ a cut out and get out policy, but we were concerned about private owners. So we did direct our studies toward application by the private owners. The results were presented in various ways at the annual meetings of the Western Forestry and Conservation Association, the Logging Congress, and so on. Well, we got respectful hearing but not much follow-up application.

Fry: Your Douglas fir growth studies were in Oregon, and there was another one simultaneously in Washington, is that right?

Munger: No, it was all one. Washington and Oregon were both in this district.

Fry: Didn't you also have Dean Frank Miller working on this in Washington?

Munger: We had two different crews, and while we started working together after we got our techniques worked out, he took the



Munger: north and I took the south, mostly.

Fry: So you used the same techniques then?

Munger: Yes. It was all one study, and I did all the office work. He went back to teaching at the University of Washington; he was on for only a couple of months.

Fry: When you were with your crew, did you do a great deal of the field work, or were you relegated to the office?

Munger: No. In those days, I was in the field always with the workers, but that was usually during a short season. Then in the wintertime I was engaged in the office work.

Fry: Do you remember enough about your research methods, such as measurement of height and things like this, that you could look at that now, from the standpoint of having come a long way in research, and evaluate the accuracy you were able to get out of the study?

Munger: Well, general as were the studies that were made in those days, I think subsequent studies have substantiated their dependability and reliability. The Douglas fir growth study was made in 1909 and continued in 1911, and the results were published subsequently. In 1910, we started a similar study on the growth of Ponderosa pine. There again there were two crews in the field, and I divided my time between them--one in the Blue Mountains, and one in southern Oregon. That subsequently resulted in a publication.

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\* "Western Yellow Pine in Oregon," U.S. Department of Agriculture professional paper 418, 1917.



Fry: Did you use roughly the same methods in both the pine and Douglas fir studies?

Munger: No, the technique was quite different, because one grows in even-aged stands and one in uneven-aged stands. So in the case of ponderosa pine, we were studying the individual tree, supplemented by stand studies rather than plot studies of the volume of an even-aged stand on an acre.

Fry: Oh, I see. In this study, were permanent plots established?

Munger: No, not then. But speaking of permanent plots, that is something that we started then that I have been very grateful for and I think others have ever since. In 1910 I put in a series of permanent sample plots in even-aged stands of Douglas fir. They were the first permanent growth plots west of the Mississippi, I'm quite sure. The trees were all tagged, and they were remeasured periodically and are still being remeasured.

Fry: Where were these?

Munger: They were scattered over the Douglas fir region. We started in 1910 putting in those plots, and they have been added to from year to year for some time.

Fry: And they're not abandoned even now?

Munger: No. They are still being measured periodically, and I hope will continue to be. They have been the most convincing evidence that lumbermen needed to show that those stands do





Munger: grow, because we could show that the stand had so much in 1910 and so much more in 1915 and 1920 and so on. We pioneered in this field of permanent growth plots in the West.

Fry: How did you get permission to put in this permanent growth plot? Was this your idea, or did it come down to you?

Munger: Well, they were nearly all put on national forest land; the trees were all tagged and nails were put in them, so it was just taken for granted that that was all right.

Fry: From whom did you have to get permission for this? Do you remember how all this came about?

Munger: It was all in the Forest Service, so we from the Regional Office could go in and do what we wanted.



Direct Seeding Efforts

Fry: Didn't you try some direct seeding quite early on the national forests?

Munger: Yes. About 1909, when James Wilson was Secretary of Agriculture, he felt the Forest Service was not acting fast enough in doing reforestation work--seeding and planting. He was a farmer, and his concept of forestry was chiefly that of seeding and planting. The Forest Service had no nurseries and no supply of seed, but Secretary Wilson said, "That doesn't make any difference. Get some seed from Europe, or get some seed from the trees from the East." So the Forest Service, somewhat against its best judgment, was compelled to do some direct seeding before it was really ready for it.

I had very slight connection with that program. I remember one instance in which there was an area in the Mt. Hood National Forest that seemed appropriate for direct seeding. We had a supply of eastern seed and European seed. In November, "Bush" Osborne and I with the local ranger rode into this place and established camp. I think we had five horses with us, and in the night our tents began to sag and, we found when we got up, there was about six or eight inches of snow on the ground and it was snowing hard. So we thought that we didn't want to get caught up there for the winter, so we went out and very



Munger: hastily disposed of our seed on the snow and got out of there to a lower altitude before we got snowed in. The horses had no feed, of course. That was perhaps an unusual example of the attempts at direct seeding. People who have gone through that area since then have been surprised to discover once in awhile an eastern oak or a European pine of some kind and have wondered how in the world it got there. Well, it got there because "Bush" Osborne and I scattered the seed on eight or ten inches of snow in a great hurry.

Fry: Did you make periodic checks of this to see what happened?

Munger: I've never been back to the area, but I've heard of it; others have.

Fry: The results of this directive then just lasted for a little while, is that right?

Munger: No. Very shortly after that the Wind River Nursery got into production, and the Forest Service built a seed kiln and was able to get seed in large quantities, so we were able to do our sowing and our planting with our own local-grown stock, which was much superior.

#### Sand Dune Planting

Fry: You did some sand dune planting around 1910, didn't you?

Munger: Yes. Some complaint came to the office that the sand dunes on



Munger: the Oregon coast were encroaching on private lands and covering up cranberry bogs, roads, and so on, so I went down and made a hasty reconnaissance of the situation and, in the course of that, tried planting various things in sheltered locations. I didn't attempt to plant them where the sand was in full drift, but I did plant things like Scotch broom, blackberry, pine that showed some prospects of being able to maintain themselves on sand. It was quite amateurish, but at least it was a beginning. At that time, there were complaints that too many cattle were allowed to graze on these dunes, and I recommended very strongly about discouraging permitted cattle on the sand dunes, to which, I think, after awhile some attention was paid. Particularly, damage was being done by grazing on the spit at the mouth of the Umpqua River, where the sand was blowing across the spit and filling the bay. Then the U.S. engineers were digging out the sand and dumping it in the sea. It was thirty-five years later that the U.S. engineers made an effort to stop the sand from blowing into the bay.

Fry: By planting?

Munger: By sand dune planting, yes, by grass planting.

Fry: Did you more or less just go out and plant this on your own, or were you sent out? Was this on national forest property?

Munger: Yes, that sand dune country is mostly national forest, and when it wasn't, nobody cared what it was in those days. Some of it was public domain. But I worked usually, when we did this small





Munger: scale amateurish planting, with the local ranger accompanying me.

Fry: There was some direct seeding done apparently on the Siuslaw National Forest this same year, and you went out to inspect that. Do you remember anything about that? It was seeding in deforested fern patches.

Munger: No. I, in rather a casual way, inspected some of the early plantations' seeding; in general the direct seeding was not successful, but the planting was very successful at that time.

Fry: This same year was the year of that avalanche, which you write about in your Timber-Lines account, and this seems to me to almost get into the field of geology when you had to go out and check on sources of avalanches.

Munger: Well, foresters were supposed to be jacks-of-all-trades, and when there wasn't anybody else to study such problems, they turned to the Forest Service. This avalanche, which swept a couple of stalled trains off the track and buried about a hundred people, roused the Forest Service to thinking that they would like to run down the cause of that avalanche. So I spent I think several weeks up there later in the spring climbing over the slopes and trying to figure out what happened. I found there that there were two kinds of avalanches: one I called canyon slides, where there was a slide every year down

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Thornton T. Munger, "Recollections..." Timber-Lines, Thirty-year Club, Region Six, Supplement to Vol. XVI, Dec. 1962.



Munger: in a well-marked path. Another kind I called a slope slide, where a whole slope slid off like the snow off the roof of a church after it's been heated. I ascribed that largely to the deforestation that had taken place on that slope, which emphasized the importance of keeping those slopes well forested.

Fry: When you had travelled in Europe, had you found out anything casually about this business of protecting the slopes from avalanches by planting?

Munger: Well, I saw in Austria the elaborate work that they had done there on the control of wild brooks. They called it wild bachverbauung. But I don't recall that I looked into the subject of avalanches at all, so I was quite a novice at the subject until I got on the ground there.

Fry: I'd like to get an idea from you of how you look back upon these reconnaissance projects.

Munger: Well, in comparison to the way things are done nowadays with a large crew and endless money and plenty of Ph.D.'s, the pioneering work of this kind in studies of sand dunes and avalanches and so on seems rather crude. But viewed from the point of view of the times, it was very helpful and constructive, although the modern technician would possibly sniff at the technique employed, which was observation, largely, and empirical. These studies of avalanches and other analogous studies were made simply by ocular study of the ground, using such geological



Munger: knowledge as you had and such knowledge of forest influences as we had then.

Fry: What about insect control? Did you make many field trips out to check on insect infestation of trees?

Munger: Well, once in awhile there would come into the office a report of damage, and they didn't know what the cause was. I recall going out on three or four trips of that kind to try to diagnose the trouble. But soon after the days which I'm speaking about the Bureau of Entymology took over with men that would do that kind of thing.

Fry: I see. I notice that you made one field trip with the bureau men in 1910 with also a few lumbermen along. Was this just to inventory the bugs, so to speak?

Munger: Well, there was a serious outbreak of the western pine beetle, that brought the Washington office of the Bureau of Entymology out to look at it, and we joined them there.

Fry: So this was mostly in pines. I notice that lumbermen went along too.

Munger: It may have affected their timber too.

Fry: What could you do for insect control in those days?

Munger: I had nothing to do with that at all, but the practice was felling and barking the infected trees while the insects were active inside. But there are modern techniques now that are being experimented with.



Eye-Witness of Pinchot's Receipt of President Taft's  
Letter of Dismissal

Fry: You had a rather astonishing brush with a high point in history, when you happened to be having dinner with Forest Service Chief Gifford Pinchot the night that he received his letter from President Taft which informed him he was no longer an employee of the federal government. Could you recount that and tell us your reactions as you remember them at that time?

Munger: I don't think I can add anything to what I wrote, <sup>\*</sup> and I wonder if I remember it all.

When I was back in Washington on a detail and was visiting my sister, whose husband was a classmate of Gifford Pinchot, Mr. Pinchot was invited to just a family dinner there.

Fry: This <sup>\*</sup> says that her husband was Philip P. Wells, a Yale classmate and close friend of Gifford Pinchot, and that this was the evening of January 7, 1910.

Munger: Mr. Pinchot came a little bit late and, apologizing for his tardiness, said that as he left his house he was given a letter by a White House messenger. He'd opened it and read hurriedly, saw what it was about, the contents of which he was anticipating. As we sat down to dinner, he read those letters. It was a most dramatic moment, hearing him read his letters from President

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Munger, Thornton T., ibid. p. 13.





Munger: Taft and from Secretary Wilson dismissing him from the Forest Service--the Forest Service that he'd created and made an important national institution. But, as he explained and as is well known, he had courted such action by going over the head of his superior, really to the public, to call attention to the scandal that was going on in Alaska in regard to the coal lands. That was the so-called Ballinger-Pinchot controversy.

He did a good deal of telephoning during the dinner hour and showed a marvelous composure and courage in the face of such a reprimand and didn't evidence his disappointment, which he must have felt in the attitude of the President and of the Secretary in failing to appreciate his concern for protecting the public's interest in these Alaska coal fields. \*

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\* Gifford Pinchot's own account reads: "On the evening...of January 7, 1910, I was going out to dinner--I have forgotten where. As I was about to leave the house I ran into General Crozier, who had just come in to dine with my mother [sic]. While we were greeting each other the doorbell rang. I opened the door, and a messenger from the White House handed me an envelope. I looked into the envelope, found the letter I half expected, walked upstairs with the General, waved the letter at my mother as we entered the dining room, and said, "I'm fired."

My mother's eyes flashed, she threw back her head, flung one hand high above it, and answered with one word: "Hurrah!"

That was the stuff my mother was made of. We talked for a few moments, and then I went on to my dinner." Then follows a section entitled "The Morning After." Pinchot, Gifford: Breaking New Ground, Harcourt, Brace and Company, Inc., New York, 1947, p. 451.



Munger: So he said he'd have a meeting of the Forest Service the next day and announce it to all of them, as he did, and then advised everyone--and I was there--to stay by the Forest Service. It was a sorry day for all the Forest Service fellows to see him be lost as its leader. They were very apprehensive about what the future would be. Mr. Pinchot had said at this dinner that he was particularly apprehensive of whether the axe would also fall on others who were his right-hand men, but it didn't.

Fry: Maybe we can go back a minute: can you explain Philip Wells' relationship to Pinchot? What was Philip Wells' occupation?

Munger: He was an attorney, but at that period he was an assistant attorney in the Forest Service in Washington.

Fry: Had he had any part in the Ballinger-Pinchot controversy?

Munger: Mr. Pinchot had attracted to him a number of his classmates whom he knew and trusted. George Woodruff was the Chief Law Officer, and Phil Wells was his understudy, and Herbert Smith, another classmate, was editor of the Forest Service. There may have been others that were of that Yale group that were associated with Pinchot during his activity there.

Fry: Do you think that these Yale classmates of Pinchot more or less offered him support and that he could talk this over with them at mealtimes all during this controversy?

Munger: I have no doubt that he conferred with them as to what action to take on this Pinchot-Ballinger controversy.

Fry: So they were all more or less expecting this, then?



Munger: Yes.

Fry: Was there anyone else at the dinner?

Munger: Besides my sister's children, I think there was somebody else whose name I've forgotten, a friend of the family. It was just a family affair.

Fry: I wonder if you can remember it enough to describe the kind of house and where it was in Washington and what the dining room looked like.

Munger: Well, Washington is notable for these block houses, in which they have no side windows. They called them gunbarrel houses with the rooms in a string.

Fry: You mean common walls between the houses?

Munger: Yes, and that was common even in the rather good residential districts. This was quite close to Rock Creek Park, and these houses were usually three stories with a basement, as this one was. Brick and dreary looking on the outside, but rather pleasant inside.

Fry: And on the first floor I guess you had the living room and dining room arrangement.

Munger: Yes, on the ground floor, the dining room having windows onto the garden, and then the living room on the street, and the kitchen was tucked in at the side somewhere.

Fry: Was this a very informal dinner?

Munger: Yes, entirely so.

Fry: Was it served by Mrs. Wells, by your sister?



Munger: No, they had a colored maid, yes, I'm sure they did.

Fry: But the children were at the table with you?

Munger: Yes.

Fry: That makes it informal. [Laughter] What were the ages of the children? You mentioned that Lewis was a thirteen year old.

Munger: Elizabeth was seven.

Fry: I gather even the children were caught up in this and knew what was going on, because you wrote that the thirteen year old took time to cry about it.

Munger: Yes, the children knew it, because Gifford Pinchot was quite at home in their household, and they saw him off and on.

Fry: What was your reaction to this? Do you remember your own personal reaction when Pinchot read this letter?

Munger: Well, it was a terrible shock to think that our leader and really our hero was gone. The youngsters there in the Forest Service quite worshipped Pinchot and had the highest admiration and respect for his leadership, and it was an awful blow to think of losing that. They were very obviously worried about the future of the whole Pinchot policies, so-called.

Fry: You count yourself in that group?

Munger: Yes. As I say, I had only been in the Service a year and a half.

Fry: You had met Pinchot before this, hadn't you?

Munger: Well, I used to meet him in the summers at Gray Towers. When the Yale forest school was at Milford, he was an occasional





Munger: visitor and lecturer in the summer school there.

Fry: So you and he had this acquaintance.

Munger: Yes. I had seen him there since 1902 or so.

Fry: Then he knew you also that night.

Munger: Yes.

Fry: Could you describe this farewell meeting the next morning at the Forest Service? Were you there?

Munger: Yes, but I don't remember it well, except, as I say in there, that his final word was, 'Stick by the Forest Service.' I don't recall any further details of the meeting.

Fry: The write-up here by you is on page 13 of the Thirty Year Club's Timber-Lines, Volume 16 of December, 1962. It kind of left me with the feeling that Pinchot was really quite cheerful and had already brought himself to accept this and might even be looking forward to carrying on a fight outside the Forest Service. Did you get that impression there that night?

Munger: Well, in a long afterward analysis of the situation, I think that he'd made up his mind that was the thing, to sharply call this to the public attention, and that he was willing to sacrifice himself and his leadership of the Forest Service for the sake of accomplishing that purpose, which it did, I think. The Forest Service went on. He passed it down to other hands that he felt were capable of carrying on. But of course he did not give up by any means his activities in conservation, because shortly after that he organized this conservation association,



Munger: which carried on outside the Forest Service things he couldn't do as a member of the Forest Service. But without speaking for him, I think he was terribly disgusted with President Taft's lack of support of the Theodore Roosevelt policies and unwillingness to probe the Ballinger Alaska land scandals.

Fry: Is it your understanding that these Cunningham coal claims were really illegal?

Munger: I think so, yes.

Fry: That was an interesting bit of history. You were fortunate to have been there.

Munger: Yes, it was a dramatic period to be in on--quite by accident.

#### Wind River Nursery--Established 1910

Fry: Well, the very same year, 1910, was when the Wind River Nursery was established on the Columbia Forest, now the Gifford Pinchot Forest. Were you in on the origin of Wind River Nursery?

Munger: Yes, in a secondary way, because the Section of Planting and Mr. Julius Kimmel and I worked very closely together. About simultaneously with the establishment of the Wind River Nursery, we established the Wind River Experimental Forest there. The movement to establish experimental forests was just beginning. A couple of the other districts already had experimental forests, and we placed it there thinking that most of the research would



Munger: be in connection with planting techniques and nursery practice, of course a concept that was wholly outgrown very soon. So the early work at the Wind River Experimental Forest was largely in developing nursery and planting techniques for Douglas fir, a species that had never been worked in before, and it was a brand-new field.

Fry: Why did you choose Douglas fir?

Munger: It was the major species. At the nursery that's all they grew, practically.

Fry: Did Julius Kimmel come here specifically for that assignment, or was he already there at that time?

Munger: No. He came to the Regional Office on December 1, 1908, the same time that I did. He had had a year of experience in planting work in another region and was put in charge of the planting here and continued in that role until his retirement.

Fry: So he was in charge of Wind River Nursery and you were still in the experiment station primarily?

Munger: No, I was in the Section of Silvics, the research section; we were both in the Regional Office. He was chief of the Section of Planting, but not the immediate supervisor of the nursery. There was a resident supervisor there at the nursery. Kimmel was in the Regional Office in charge of the overall planting program.

Fry: Do I understand it correctly then that in 1913 the research field headquarters were moved to the Wind River Experiment



Fry: Station, and this was a new experiment station in 1913, is that right?

Munger: Not exactly. There had been research there for a couple of years before that, largely engaged upon planting techniques. But it formally had the status of an experiment station, I guess from 1913 or 1914 on. Wind River had very much to commend it for a center for research studies of all kinds.

Fry: How was it selected to be an experiment station?

Munger: It had in the neighborhood some virgin forest, a great deal of burn, a great deal of second growth, and considerable recent cut-over land (some on private land) as well as the big nursery there. So there was a great opportunity for study of all sorts of things from there, and that's why it was selected. It has still been maintained as a very important research center. At one time it was considered the most visited forest center in the United States, except possibly for Biltmore, North Carolina.

Fry: That was because of its diversity?

Munger: So much was going on, and the diversity of forest that could be seen there.

Fry: So you needed a head administrator for this, someone to live at Wind River. I have here in my notes that you interviewed J. V. Hoffman for this position.

Munger: Yes.

Fry: Where did he come from?

Munger: He was a Minnesota graduate who was working up at the Priest





Munger: River Experimental Forest. Coming west from Washington I stopped off at Newport and hired a sleigh and drove out ten or fifteen miles to where he was headquartered on what was then the Priest River Experimental Forest. I thought his qualifications were good, and he was interested in the job, so he was put in charge of Wind River and was there for a dozen years.

Fry: He worked out rather well then, I take it.

Munger: Yes, fine. Not quite a dozen years.

Fry: Did you officially have some connection with Wind River in your position there?

Munger: Well, Wind River at the start was under the Regional Office, and I, as a member of the Regional Office, had jurisdiction over it. A few years later these experimental forests were all put directly under the Washington office for reasons that are not clear to me. It didn't change the relationship very much, but technically for a period there they were under the Washington office directly, sidestepping the Regional Office.

Fry: Who was chief then? What period was this?

Munger: This was in the late 1910's.

Fry: After the experimental forests were put under the Washington office, did you still visit Wind River and keep in touch with what was going on?

Munger: Yes. It didn't change its relationship very much with us in the Regional Office except in details of direction.

Fry: In your diaries you mention an arboretum there.



Munger: When we built our first building and our little greenhouse there it seemed appropriate to plant some exotic trees, and there were some growing in the nursery. So we started in a very small way plantations of such exotic trees as we got hold of. That was subsequently very greatly expanded, more land cleared, ultimately resulting in a very large collection of mostly conifers. And it's still maintained as one of the interesting arboretums in the region, devoted mostly to conifers and on a rather difficult site, so it was a chance to test what some exotic trees could do in that climate and soil.

Fry: Do you know of any instances in which planting of exotic trees was adopted in larger planting projects on the part of private industry or the Forest Service then?

Munger: Well really, in spite of testing all these exotic trees, we couldn't find anything better than our own Douglas fir for general forest use here. That arboretum is still maintained and there are progress reports written every five or ten years on it.

Fry: You kept some sort of file cards on each of these trees, I gather, for growth studies and things like that?

Munger: Yes. The trees are measured periodically.

Fry: Well, you did some other studies before Wind River became the Regional Forest Experiment Station. Some of these, such as the white fir decay study, might have been rather significant.

Munger: That was a minor study primarily conducted by a pathologist, but we co-operated on it.



Fry: Was this Dr. Meinecke?

Munger: Yes, Dr. Meinecke, now of San Francisco. We co-operated on it, because the prevalence of rot in white fir was troubling people, and we wanted to know how to detect it and what caused it and what methods of management might be used with the species. But in 1915 my work was broadened out somewhat and I became the Assistant Chief of the Division of Silviculture. There I worked on timber sales, reconnaissance and other things, with much less time devoted to research than I had in the Section of Silvics. The research was left largely to the Wind River people with a certain amount of supervision from the Regional Office, which I principally gave. From 1915 to 1924 my work was largely administrative in the Division of Silviculture, as it was called then; later it was the Division of Forest Management. I think they changed it again; I think it's now the Division of Timber Management.

Fry: Was Silvics a parallel division?

Munger: No, it was a sub-section under that. The Section of Silvics sort of dissolved about the time that Wind River was established.

Fry: Where was Fred Ames in all this?

Munger: He was Chief of the Division of Silviculture, as it was then called.

Fry: So the working relationship between you and Ames was still roughly the same then.









Munger: Yes, I was his understudy but doing the timber sale, cruising and reconnaissance work rather than the silvics work.

Fry: What men were doing this research then, at that time?

Munger: It was Hoffman and his assistants, of which he had a very scant number.

Fry: Did you manage to visit Wind River often?

Munger: Quite often, yes. I continued to visit there.

#### Douglas Fir Seed Study

Fry: Your diary also mentions a Douglas fir seed study going on in 1914. Was that part of this planting program at Wind River?

Munger: No, that was quite separate. When the Forest Service began to make timber sales in the Douglas fir region, the idea was of leaving two or three seed trees per acre. Since in most Douglas fir forests there are what are called "conky" trees, those that have considerable rot, it was the practice to leave those for seed. Some people objected to the thought of leaving "conky" trees as parents for the next generation, saying it was like using the milk of tuberculous cows--I remember that expression. Some of us didn't subscribe to that, but in order to prove the point, we instituted a study of the progeny of "conky" trees and sound trees. But it was very greatly expanded, and it covered not only "conky" trees but trees at



Munger: high altitude and low altitude and young trees and old trees.

We gathered the seed from some 125 parent trees and grew the progeny from them, and then they were all planted in six or eight plantations scattered over the region. That was called the Douglas fir seed study, or the Douglas fir heredity study, and it was a pioneering endeavor in genetics, which now is being pursued so vigorously and intensively by forestry agencies for many species. Those plantations were the subject of meticulous examination measurement for years, and still are being examined, although the trees are good-sized now. The seed was collected in 1912, and the outplanting was done in '14 and '15.

Fry: So you were studying more than just susceptibility to rot as a genetic factor.

Munger: The great value of the study has been discovering the hereditary traits from parents at different altitudes and different latitudes in the region. That overshadowed the study of "conky" versus sound trees, which had no significance. Several progress reports have been made and published on that study, but it was a pioneering study really of genetics but done by a technique that to modern researchers seems a little crude, but it was the best we could do then.

Fry: You mean in your seed selection, your original methods of getting seed were crude, or your measurements?

Munger: Instead of very systematically getting a perfectly logical sequence in altitude and latitude and age, we had to get seed



Munger: where we could, because in those days it was a matter of going in on foot and gathering the seed. It had to be done in a very short time with a very small personnel, so that there was a little hit-or-miss in our seed sources. It wasn't a scientifically perfect sampling according to modern standards.

Fry: So you started this as a genetic study of rot but it enlarged. Were you free to just enlarge studies like this if you saw that this was feasible?

Munger: Yes, I wrote the working plan for it, including whatever I thought necessary.

Fry: Did you get to have any dissemination of this information through the industry?

Munger: Yes. The study has had already considerable practical application in deciding where seed collecting is done for reforestation purposes. We found out, for example, that there is a district in northwestern Washington where the progeny is superior to that grown anywhere else, and we found that age of the parent tree apparently hasn't much to do with it. We were testing both young trees and old trees. So there's been a good deal of practical application in reforestation from the lessons we learned from that study.

Fry: In other words, this northwestern Washington district, then, is the one they would go to to get seed for planting Douglas fir down here in Oregon.



Munger: Yes, so long as it isn't moved too far from its native haunts.  
That was another point, that it isn't good to use seed of too great a contrast between the site of its parents and where it's to be used.

#### Methods of Cutting Study

Fry: I'd like to ask you about your Methods of Cutting study.  
This study occurred around 1912 or 1913.

Munger: Yes. The management of the western yellow pine forests, now ponderosa pine, was entirely experimental. There had been no experience to see what methods of cutting would work the best, so some of us thought it would be a good idea to make a large-scale test of different degrees of cutting. With the help of T. J. Starker and one or two others, I put in a forty-five acre plot, which was divided into thirds. One third was to be cut leaving 15 per cent of the stand, one leaving 25 per cent, and one leaving 35, as I recall. That was a regular timber sale, and cutting proceeded on that basis. Then careful measurements were kept thereafter of the growth of the surviving trees and of the reproduction that came in. That study was examined periodically for a good many years and yielded rather interesting data. However, in later years the Forest Service was able to employ a much lighter cutting than was involved in any of those





Munger: plots and, as a present practice, leaves about 50 per cent of the volume of the stand in the first cut. But we were ahead of our time in preaching that in 1913.

Fry: What kinds of reactions did you get if you talked to timber operators?

Munger: Well, with the stumpage so low and the margin of profit so slight in those days, the loggers thought they couldn't afford to go into a stand unless they were going to be able to cut nearly all of it. So the Forest Service was under pressure to cut as heavily as possible. For that economic reason we had to sacrifice some silvicultural advantages in those early days.

Fry: Did you have any results of that study that were unexpected? Did you find out some things that you didn't expect to find out when you first designed the study?

Munger: Well, yes. Everything was new to us then. In those days we didn't know whether the seedlings that came in before the forest was cut, that is, the "advance reproduction," would respond to the added light and make good growth. We found that they did, which was an unknown fact before.

#### Reconnaissance, Extensive and Intensive

Fry: There was a long reconnaissance survey begun about 1912. I



Fry: think it lasted about ten years. Would this have come under your jurisdiction?

Munger: I think beginning about 1909 or 1910 each national forest was supposed to make an inventory of its resources, and that was called the extensive reconnaissance. That consisted in one or two men estimating the timber and type mapping it in a rough sort of way. The maps were then quite crude, but it was an attempt to get a general inventory of the nation's resources, in this region anyway. That occupied the technical assistants, some of them a year, some took two or three years to do it. I personally did only a small area in which we happened to have a special inquiry, and I covered 100,000 acres or so, mostly horseback on the Malheur National Forest, as a part of the extensive reconnaissance.

But shortly after that, the Forest Service embarked upon making what was called intensive reconnaissance, which maps on a scale of four inches to the mile with a detailed cruise forty acres by forty acres. Selected areas, particularly those that had potential possibilities for timber sales, were cruised in that way, usually with a crew of ten or so men. I for several years gave overhead direction to that and spent considerable time in the field with each of the crews, laying out the project and instructing the student assistants in their techniques and making a general inspection of what was being done. That occupied a lot of my time from 1915 until 1924.



Fry: Could you give us a picture of the sort of personnel you had on your crews and how well trained they were for this job?

Munger: We had in the regional office two or three men who were particularly qualified for that kind of work and devoted all of their time to that. They were sent out from the Regional Office. Some of the time there was a surveyor or engineer with them to do the topographic work, sometimes not. Then these men were supported by usually about eight or ten students, who were called student assistants or field assistants, who did the routine line running and tree measurements. The most important one of the crew was the cook--and the hardest to get--because this was nearly always tent work, often pretty well in the back country.

Fry: Was this your job to find those cooks?

Munger: No. We relied upon the local supervisors to get that type of help or axemen if they needed them--the day-labor type. They usually provided the packhorses and so on for the moving, although later we had a couple of automobiles for the use of these parties. In that connection I recall that I bought the first automobile that was bought by the Forest Service in this Region, with many raising eyebrows as to whether it was practical. Up to that time they had been paying mileage wholly for privately owned automobiles; but I thought we should buy, and we did, and of course after that it spread very rapidly, and the Forest Service went in a big way to get



Munger: automobiles.

Fry: Was Ames a conservative one on that?

Munger: Very, yes. On everything.

Fry: But you managed to get it through anyway.

Munger: Some of these helpers, the field assistants, stayed the year through, not just during their college vacation, but went on a much longer period, because we often had crews in the woods six months. Then they came in and did the office work, mostly in the Regional Office, in the winters.

Fry: You described a moment ago some of the cruder techniques used in the extensive reconnaissance. Now on this reconnaissance I gather that you would have used more specific measurements.

Munger: Well, they used a high degree of control in making a good map, and it was drawn on a scale of four inches to the mile. Then the crew of two men--compassman and a cruiser--gridironed the country, usually twice through each forty, double run they call it, measuring the trees on a strip a chain wide, which gave 10 per cent sample. Those are the maps and the cruises on which timber sales were made. This was largely in anticipation of making timber sales.

Fry: I noticed that you had two kinds of crews, a strip crew and a transit crew.

Munger: Some of these crews had a surveyor to do the primary topographic work, and of course he was a transit man. The skeleton of the map was sometimes made by a surveyor from the Regional





Munger: Office working with the foresters. But the major part of the work was done by these student assistants in cruising on the strip.

Fry: Has this been published anywhere?

Munger: Well, of course the maps are used currently, but it wasn't anything to be published.

Fry: Nothing on the timber inventory or the type map?

Munger: No, it was simply used currently as working maps. But we'll discuss later the forest survey, which is quite a different proposition altogether.

Fry: When you visited the crews in the field, what was the object of your visit? What were you looking for?

Munger: I tried to join them at the start to see what area we should cover, realizing that many of these watersheds were known only from the distance. The local rangers knew there was a big body of timber, but they hadn't any idea of the composition by species, volume, quality, loggability, etc.

#### Inspection and Fire Control

Fry: I asked you in a conference off the tape yesterday if there was much to discuss in terms of fire control, fire prevention, and fire fighting in these days before World War I, and you felt that there wasn't. But I do want to ask you some related



Fry: questions about that. For instance, in your inspection trips, I thought maybe the issue of controlled burning or brush burning would have come up. Did it?

Munger: Yes. That was a perennial problem both in the Douglas fir and in the ponderosa pine region. The Forest Service started very early in the ponderosa pine region piling and burning brush, and that was just taken for granted as a desirable practice for a number of years. But some people had doubts as to whether it was necessary or desirable, so we started quite early some experiments in leaving the slash and seeing what happened. But the forest [fire] protectionists were so leary of leaving any unburned brush around that the pressure was great to pile and burn all of it--that's in the ponderosa pine region. Likewise in the Douglas fir region there were many arguments as to the desirability of leaving the slashings--giving fertility to the soil and keeping the soil cooler--which seemed to offset the desirability of burning it to reduce the fire hazard. But the Forest Service, under the pressure of the forest protectionists, usually insisted on broadcast burning of the cut-over on clear-cut areas. That practice has been by this time considerably modified.

Fry: Who were the protectionists?

Munger: One branch of the Forest Service was devoted to forest protection; it was a branch of each Regional Office. And people were wont to say then that fire protection is 90 per cent of



Munger: forestry, and in some people's minds the emphasis was given to putting protection ahead of everything else--the welfare of the seedlings, or the success of the reserved stand, of the seed trees and seed supply.

Fry: Was there any external pressure from public-spirited groups who felt that this shouldn't be done?

Munger: Quite early both Washington and Oregon passed legislation making it compulsory to burn slashings, and so that set the pattern in a way for what was done on the national forests.

Fry: You had some incendiarism on the part of the backwoods settlers that was kind of a problem, particularly on the Siskiyou National Forest. Do you remember that?

Munger: Yes. That was in southwestern Oregon. Particularly the national forest administration was plagued by incendiarism, because it was a brushy country and the settlers were wont to set fire, for various motives.. Partly they liked to explore for minerals and they liked to expose the ground, and partly they liked to hunt and could do better if the brush was out of the way, and partly just for plain cussedness, to spite the Forest Service. It was a difficult administrative problem for a number of years, but one that I had very little to do with.

Fry: In forest fires themselves, what do you think about the organization for fighting fires at that time?

Munger: Well, the Forest Service gave great emphasis to the matter of [fire] protection, because there was no public consciousness as to



Munger: the necessity for putting out fires and even the necessity for not setting them. Then there was lightning to contend with, so that the Forest Service pioneered in a splendid protection system, centered about lookouts, with a man during the summer season to detect fires, and building the telephone lines to connect the lookouts with the nearest ranger station or guard station. Forest protection had pre-eminence among Forest Service activities for a number of years, as it properly should have in those days. Meanwhile, there was a public consciousness built up to regard forest fires as a bad thing.

Fry: Was there any kind of in-service training for the rangers on firefighting and detection?:

Munger: I don't remember just when that began, but fairly early the Forest Service had a training school at the beginning of each fire season for the temporary employees. During fire season a great many extra people were put on--smoke chasers, lookouts, forest guards, and so on, many of them college students, and they were given ten days to two weeks training at the beginning of the season. I forget just when that commenced, but quite early.

Fry: Were there any manuals written at this time?

Munger: Yes. Quite early there was a manual. There was one set gotten out by the Western Forestry Conservation<sup>and</sup> Association as well as one by the Forest Service with very full instructions. That









Fry: So when you married her, you had to move out of this bachelor's quarters that you had. Where did you live then?

Munger: We were in the same house. We put the others out and we lived there for awhile.

### Land Policies

Fry: Can we talk a minute about land policies? There was the Forest Homestead Act on June 11, 1906, and I wonder if, even though you were in the Section of Silvics, if you didn't have to make some decisions and have some first-hand contact with decisions to allow certain areas to be homesteaded.

Munger: Well, in the period from 1910 to probably 1925, there was a great land hunger--to get possession of any land that had any possibilities of being homesteaded. Under the Forest Homestead Act, there were a great many people applying for little scraps of land in the national forests. At one time, the Siuslaw National Forest had 1,100 claims that had to be examined, and there was considerable difference of opinion in the Forest Service as to the policy of allowing these homestead entries. There was a sentiment that the Forest Service was in a precarious position, and after Pinchot's dismissal from the Service, the next administration was, I think, rather fearful



Munger: that the whole Forest Service national forest system might be jeopardized if they weren't rather liberal in granting land of possible agricultural value. So that was reflected in the administration in the Regional Office. However, Ames and I and the Office of Silviculture were not sympathetic with that at all. We thought it was entirely unnecessary to grant these little fragments of land for homesteads, and we habitually disapproved these reports that favored granting these homesteads, because those had to go across our desk. That caused a considerable feud between the Division of Silviculture and the Division of Lands, that was much more open-handed than we were.

Fry: Were you overruled on this, so that most of these did go through?

Munger: Generally, yes. Our remonstrance was of no avail, and the policy went through of being very liberal in granting these homesteads.

The hotbed of them was in the Siuslaw National Forest with the little, narrow strips of good soil along the creeks. I think a homestead could be a mile long, so that it meant just little ribbons of land that had the effect of cutting the national forest to pieces as a suitable unit for management.

Time, however, has proven, I think, that the Office of Silviculture was right, because many of the homesteads granted



Munger: at that time have been abandoned and have since been bought back or have gone tax delinquent and come back to public ownership. That was only one phase of the disagreement in land policy.

I remember in the administration of Graves, when he was Chief Forester, the question came up of eliminating a good deal of land in central Oregon of rather low forest value, but some land speculators were claiming it had agricultural value and were putting the pressure on the Forest Service to open these lands to homestead entry. There was a considerable area that constituted then the Paulina National Forest of lodgepole pine and juniper and some nice ponderosa pine. I remember when the matter was being considered; Dean Graves was there, and I remonstrated against the elimination, which was rather a bold thing for a youngster to do to his superior. Graves' eyes flashed, and he said, "It isn't a question as to whether this land's going to be eliminated or not, it's only a question of where the line shall be." He was drawing a blue pencil line around what the elimination should include, and it went through. Since then the land has nearly all come back into public ownership.

Fry: How?

Munger: By forfeiture or lack of <sup>proving</sup> ~~moving~~ up. It was not agricultural and was low-grade forest land. It was another one of the unfortunate mistakes made when the Forest Service was afraid that





Munger: if it didn't throw out the golden apple they'd lose the race altogether.

### Timber Sales

Fry: Could we go on with some more on timber sales? We had been talking about your activities in reconnaissance and so forth, and I wonder if you could give us an idea of how the demand on the part of industry was for timber sales at that time?

Munger: During the 1910's and perhaps later, there was some pressure on the Forest Service to sell more timber. Some of the Congressmen were saying, "We're spending money administering these areas, and we're getting nothing back." At that same time, most lumbermen didn't want the Forest Service to sell timber, because they didn't want their timber to be put in competition with their own private timber that they were paying taxes on and getting land-poor from lack of disposing of it.

However, the Forest Service did make quite a number of sales beginning as early as 1907 or so, but in rather restricted spots where there happened to be accessibility to a railroad. One of those was in the Blue Mountains, where the Sumpter Valley Railroad penetrated a lot of nice national forest ponderosa pine. There were some mills near there that were



Munger: eager to buy national forest timber. But on the west side it was only in a few localities that timber was being sold, and then not in very large quantities, and then only at what now seems absurdly low prices but was all the traffic would bear then, more too in some cases.

Fry: Why wasn't more sold on the west side?

Munger: Well, because most of the national forests were not penetrated by accessible railroads and because there was such a wealth of private timber outside the national forest that logically should be cut first. On the Umpqua National Forest I remember there was not a timber sale made of any consequence until probably 1930.

Fry: Was this because of the advent of trucks about that time or because the private timber was petering out around it?

Munger: It was because of the absence of transportation, both highways and railroads.

Fry: Wasn't there quite an industry in railroad ties and shingle bolts about 1910? How did this affect your timber sales?

Munger: There was quite an active timber sale business in shingle bolts in northern Washington, the shingle bolts being driven down the rivers. That was small business, but it was very important business in northern Washington at that time. It was a good deal of a headache to the U.S. Forest Offices, because these were difficult to administer; it was difficult to measure the volume and keep track of the utilization in



Munger: the scattered areas along these western Washington rivers.

Fry: This was because of the distances involved?

Munger: They were often back from roads, and because the shingle bolts are driven; down the streams, they used that means of getting them out.

Fry: What about the railroad ties? Were they equally difficult to administer?

Munger: Well, there was another rather active seat of timber sales in northeastern Washington, particularly in the cutting of hewed railroad ties for the Great Northern Railroad that penetrated that area. That was small timber sales that meant a good deal of supervision and not much return.

Fry: This was all under your supervision at that time, is that right?

Munger: The forest supervisors made the timber sales up to a certain amount; their authorization varied with the national forest. Over that amount, the sale contract was drafted and approved by the Regional Office, that often had made an examination of the area in advance. But then the inspection of both the large and the small sales was done by men from the Regional Office in Portland to see that the contracts were being complied with, and I did some of that.

Fry: Did you take any particular area, or did you just work this out between you?

Munger: Well no, but it so happened that I did more in Oregon and Ames



Munger: did more in Washington, I think just by happenstance.

Fry: What were some of the main difficulties in supervising the cutting under the terms of contract?

Munger: The loggers were on such a narrow margin at that time, the product was so very cheap, that they were very reluctant to spend anything extra and wanted to cut the corners wherever they could. But the Forest Service contracts were rather rigorous as to demanding complete utilization; that is, low stumps, using the trees well into the tops, and using even the semi-defective logs. That became some bone of contention--to secure thrifty, close utilization of the trees that are supposed to be cut--and also in fire protection. The timber sale contracts were very meticulous in requiring fire precautionary measures, which were, in those days, almost unheard of by lumbermen. They didn't think of having fire-fighting tools at their camp or water pumps for fire protection. The Forest Service introduced a demand for those precautions, and it was somewhat of a job to see that they were complied with.

Fry: Did you actually have the authority to stop their operations if they didn't comply?

Munger: Yes, if they didn't comply. But of course as inspectors we simply called attention to the delinquencies, and the local forest officer (the forest supervisor and the ranger) was the one that dealt in an administrative way with the operators.





## OUTSIDE ACTIVITIES

Fry: This might bring us to a discussion of your activities in this period with the world outside of the Regional Office and the national forests. I think you went to the University of Washington and taught there. Then you were granted, in 1916, a five-week leave of absence to give a lecture course at Yale. What did you talk about on your forays into the academic world?

### Lectures

Munger: The Forest Service very early discovered that it needed to train men for rangers. Heretofore, before the Forest Service took over the forest reserves, the rangers had been just woodsmen and in some cases politicians with no particular aptitude for forest management. So the Forest Service encouraged the University of Washington to give a short course in forestry for rangers and others that wanted to enlist. It was a short course through the winter, and I think the Forest Service paid the salaries of the rangers who went there. Several of us in the Regional Office did much of the teaching at this University of Washington short course through two or three winters and in that way developed and trained some of the men



Munger: that had the best potentialities for being rangers but who at that time didn't need a college education as they do now.

Fry: Your participation in this is a little unclear to me. Were you sent there to educate them about research?

Munger: No, it was on the rudiments of forestry, just basic principles of silviculture and planting and forest protection and so on. It was just a simplified short course in forestry.

Fry: All built around a lecture format, is that right, because they had the woods experience, I guess?

Munger: Yes.

You asked about my going to Yale. The Yale Forest School, for a number of years, gave a course to its students on national forest administration, and I was asked to go back there in the winter of 1916 and give that course. I got a leave of absence from the Forest Service to give that course. They had a different visiting lecturer each year.

Fry: This course was open only to the students in their forestry school?

Munger: Yes.

Fry: Was it a credit course?

Munger: Oh yes, a required course. During that period, in addition to this short course at the University of Washington, the Forest Service was very liberal in having its men give lectures at the other forest schools. Oregon State was eager to have the experience of the Forest Service men, and I did my share of



Munger: lecturing there too.

Fry: This was the same type of lecture that you would give at Washington?

Munger: Yes, general talks on forestry.

Fry: What about speeches around to civic groups? Did you do much of that?

Munger: Well, there was the Logging Congress and the Western Forestry and Conservation Association and a few civic groups that were interested to hear what the Forest Service was doing, what forestry was all about. I did a certain amount of that, more probably in the later years, after I was the director of the Experiment Station.

#### Preservation of the Oregon Caves

Fry: Would you like to add anything to your story about getting the Oregon Caves set aside? I understand that before your visit they were poorly protected and undeveloped.

Munger: About 1917, the people in Grant's Pass, Oregon, thought that something ought to be done to protect and develop the Oregon Caves, or, as they were called at the time, the Marble Halls of Oregon. They were within the Siskiyou National Forest; they had been discovered a number of years before, but no particular development done there. There was a woodsman who



Munger: lived near there, Dick Rowley; and he guided people into the caves. There was considerable vandalism going on, picking off stalactites and so on. So District Forester Cecil, having heard that I had been in two or three other caves, in England and the East, thought that I must be an expert on caves, so he sent me down there.

Fry: What do you mean, you had been in other caves? Were you a spelunker, a person who liked to explore caves?

Munger: No, but in my college days I just happened to go in two or three in England and the East, and he knew of it. So I went down there and joined Ranger Melvin Lewis; we rode horseback to the caves, the last part of the way through fairly deep snow. This was in May, I think. We tied our horses to a tree, and with this local man, Dick Rowley, went into the caves, using torches and flashlights, which are not very effective. I was very much impressed and thought they certainly needed protection and development. I think as a result of that and the opinion of others, the Forest Service began considerable development, building a road in there, and giving permits for building a lodge, etc. The Forest Service didn't build the lodge. It built a very good road in there. Soon after that time, several thousand acres were transferred to the Department of the Interior as a national monument and has since then been so administered.

Fry: Were any difficulties involved in getting this change in the





Fry: land use classification of this area of the forest?

Munger: You mean getting it transferred to the Department of the Interior?

Fry: No, I mean before that. Getting it under more protection would take manpower. I guess you had to have a ranger around there, didn't you, to afford more protection for the cave?

Munger: I think that was arranged for, apparently after that. I don't remember the details; those were all handled locally. There is one little incident that I'm pretty sure of. Forest Supervisor M. J. Anderson, long prior to my visit, heard that somebody was going to file a limestone mineral claim on the area, and, being aware of it, he wired Washington to have the area withdrawn from entry. That saved the area, probably, from private exploitation, because he was quite alert to what was going on.

Fry: Was this when it was made into a national monument?

Munger: No, before that, before the time I was there he'd staved off the attempt to get it under private ownership as a mining claim.

#### Establishment of Natural Areas

Fry: How did you first get interested in establishing Natural Areas in the Region?



Munger: This Region rather pioneered in that field. About 1917, I became interested through the activities of Professor V. E. Shelford of Urbana, who was representing the Ecological Society. He was compiling a list of Natural Areas, and he asked me to be Oregon representative of a committee of the Ecological Society. Shortly thereafter, we proposed creating Natural Areas. Just to illustrate the great change in attitude on such subjects, the first Area proposed was of 280 acres, and it met with considerable opposition.

Fry: By whom?

Munger: By the local forest officers, because they thought it was a quite unnecessary tying-up of timber that could be sold, and we had lots of wild Natural Areas anyway. But from that very small beginning, this Region, I think, rather led the other regions in its activity in establishing a series of Natural Areas.

Fry: Do you mean that this 280 acres was finally approved in the Region?

Munger: Yes.

Fry: How did you get it approved over the opposition?

Munger: Well, we appealed to the Washington office.

Fry: Whom did you get support from there?

Munger: The branch of research.

Fry: Earle Clapp?

Munger: Yes.



Fry: What did he do, just write a letter?

Munger: Well, it got the approval of the Washington office for setting aside this area for that purpose. From that small beginning, we developed quite a series of Natural Areas typical of the major types. Most of them are of a thousand acres or so. While I was director of the Experiment Station some years later, we had set up about fifteen Natural Areas, and that isn't half enough, really, for this Region, but it assures preservation of some of the primeval forest in its natural condition.

Fry: Exactly what type of uses are allowed in these Areas, or were at that time?

Munger: There are supposed to be no roads and no camping and, theoretically, no grazing of livestock. They are to be left, so far as possible, in their virgin condition.

Fry: But apparently you do have some grazing then that goes on?

Munger: It's pretty hard to control where Natural Areas are close to cattle ranges and anyway we have grazing of deer and elk; they are a part of the natural condition.

Fry: Mining and hunting are not allowed, right, and never have been?

Munger: Theoretically, no.

Fry: Were you a party to setting up the administration of these Areas?

Munger: Well, they are integral parts of the national forest, and are



Munger: administered by the forest supervisor, who is supposed to protect them from improper intrusion. However, on each of the experimental forests, which were set up at a later date, beginning in 1924, a part of each experimental forest was set up as a Natural Area and, as such, was under the jurisdiction of the Experiment Station.

Fry: But these are administered approximately the same way, is that right?

Munger: Yes.

Fry: Although for different purposes, I gather. Do you use these Natural Areas which you just spoke of also for research?

Munger: Yes. They served as sample plots of the virgin forest condition as far as the cycle of vegetation and the life history of the forest are concerned. Some of those have been studied quite intensively.





## WORLD WAR I AND THE SPRUCE INVENTORY

Fry: Was your spruce inventory started when Ames left for France in World War I with the 20th Engineers and you became the Acting Chief of Silviculture?

Munger: Yes.

Fry: Can you explain this changeover in duties, if it involved any for you, and then go into the account of the spruce inventory?

Munger: When this country got into World War I, and perhaps before that, there developed a great need for spruce for airplane wings, that being considered at that time the most desirable material for airplane wings. So the Forest Service, to help the cause along, started on a very intensive scouring of the region to find spruce of the quality that would make these airplane wings, which have to be absolutely straight grain and free of knots; it took the choicest of logs. About that time, the Army had what was called a Spruce Production Division, and they built a mill in Vancouver, Washington, to cut up these spruce logs that were delivered to them for their wing beams and maybe other purposes. So there was a busy period then both in finding the suitable spruce and finding purchasers that would log it and get it out, sometimes



Munger: from very remote areas under very difficult conditions. A great deal was got from Alaska, with which I had nothing to do, but much came from the Olympic National Forest, where we had quite a number of sales of this very high quality spruce.

The logging, as with most war enterprises, was exceedingly wasteful, because these choicest of trees were cut and only the very choicest parts, perhaps just the butt log, was taken out and the rest left to lie because it was too far to remove it for ordinary uses.

Fry: You mean it was economically unfeasible to remove the rest?

Munger: Yes, and that went on for some time. It was a very busy time in timber sales for me, because I had sort of a double job of Ames' and my own work to do. But we had quite a large crew scouring the country to find suitable spruce.

Fry: Would you say this was a good time for the industry, or did the industry not profit too much from this?

Munger: Well, the industry prospered, because there was great demand for timber of all kinds, so the lumber industry was very active during that period.

Fry: What did the Vancouver effort have to do, if anything, with the Four L's [Loyal Legion of Loggers and Lumbermen]? And also how did your efforts relate to the other efforts to supply enough lumber for the war effort?

Munger: The principal contribution that our office was making at the



Munger: time was in the spruce effort, which seemed to be the critical war commodity that forests might supply. We assisted the Spruce Production Division in its technical problems and, as I said, we had made a canvass of western Oregon and Washington to find out where this high quality spruce could be had and then made sales there, and also in Alaska, with which I had a very remote and secondary connection. But we did have a busy time negotiating these sales and getting the timber out under very difficult conditions of transportation.

Fry: Did you arrange for lumber companies to transport the material?

Munger: Yes. We sold the stumpage, and the companies that logged then transported it out, sometimes forty miles or so by dirt roads.

Fry: You say here [Timber-Lines] that it had to be hauled by horses thirty miles to the shipping point.

Munger: Yes, well perhaps thirty's far enough. [Laughter]

Fry: Then you do make the statement that your office was looked to for all sorts of information that might speed up the war effort. Was this a sort of information service that you carried on?

Munger: Yes. When the Army wanted to know about the availability of certain classes of things that would be needed, particularly for loggers' needs, we made some census of those.

Fry: This was the census of available timber, or of equipment?

Munger: No, available materials that might be used. Because there was a slack in the manufacturing of equipment, the Army had



Munger: to make those that were available go as far as possible--  
things like logging equipment, even down to woodsmen's  
boots.





## PART II

DIRECTOR,  
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION

1924-1938



## THE BEGINNING

Fry: To start the story of the research station, we'd like to get a picture of the very beginning of it. How did the idea for a regional experiment station first evolve for this Region? Did it come from Washington?

Munger: Yes. There was an act passed about that time [the McSweeney-McNary Act] authorizing the creation of regional experiment stations and supplying the money for them. Two or three, I think, had been started before we were established here, and while this--what was called the Pacific Northwest Forest Experiment Station--was a successor of the Wind River, it was on quite a different basis from the Wind River Experiment Station. The first money became available July 1, 1924, and, as a surprise to me, District Forester Cecil wanted to know if I would care for the job as Director and I thought I would. So we started with a very small crew, making our-- I think it was \$30,000--go as far as we could, with a staff of about six including the stenographic and computing force.

Fry: What connection did you have with the McSweeney-McNary Act? Did you help at all in the formation of it?

Munger: No. It had been brewing for quite awhile, and I guess it was about 1920 that it was passed, and it very definitely



Munger: recognized research in the creation of the experimental forests, which were given statutory authority at that time, and liberalized appropriations for forest research.

Fry: You were able then to increase your staff after McSweeney-McNary came through?

Munger: Yes, I think that is what precipitated that.

Fry: That was when the expansion in the thirties was able to get underway, from 1929-1930 on.

Munger: Yes.

Fry: Before we get into a discussion on staff, how did you decide on the location of the station?

Munger: Earle Clapp, who was in charge of research in the Washington office, rather favored the idea of establishing the experiment stations in conjunction with a university, as had been done for the Madison laboratory with the University of Wisconsin and with the California Forest Experiment Station, which is in conjunction with the University of California. We explored to some extent the possibility of doing that here but didn't find any takers because the local universities and forest schools seemed to prefer to paddle their own canoe. That suited me very well, because I preferred close affiliation with the Regional Forester's office rather than being more remotely detached from that and connected with an academic atmosphere.

Fry: Did you think that you might have more freedom of choice









## STAFF

R. E. McArdle

Fry: You began to build up your staff. Who was the first person hired after you? Was it McArdle?

Munger: Well, we already had at Wind River Leo Isaac, and he just continued on. Then the first one who came fresh was R. E. McArdle, who came picked directly from the Civil Service register as a high stand man, and who later became Chief of the Forest Service.

Fry: Does that mean this was his first job? He was fresh out of college?

Munger: Yes, he came directly out of college. He'd had Army experience interrupting his college course, but he came directly from forest school at the University of Michigan. He was immediately put on the study of the growth and yield of Douglas fir, which he pursued with other things for two years, and the results were subsequently published in a bulletin which is still considered the standard text on that subject. It's been reprinted and is used as a textbook in forest schools.

Fry: What kind of a worker was he?

Munger: He was a very intellectually hard worker, with boundless



Munger: enthusiasm and inventiveness and a very delightful person to work with, because he was so full of good ideas and accomplished so much.

Fry: Did he come up with a number of ideas for studies and projects?

Munger: Two or three years later, he switched largely to fire studies, in which he was very ingenious in developing new equipment for fire research and new ideas of discovering things. He engaged in such things as testing the cause of smokers' fires, whether they came from the match or the cigarette or discarded pipe heels, and what kind of material they would most readily ignite in.

Fry: You mean he had to actually burn the cigarettes and so forth to do this?

Munger: Yes. Then later he was suspicious that the lookouts were straining their eyes and not doing too good a job of discovering smokes in using the dark eye glasses that they did. So he made some study of dark glasses, the outcome of which was that one was made standard, one which was of the color that would show up smoke the best and also not be fatiguing to the eyes as some of these drugstore glasses were.

Fry: So this was primarily a study of the color of the glass?

Munger: Yes, and some of these glasses that are made of molded glass have great distortion, so they are very tiresome for the eyes. He very ingeniously demonstrated that, and we adopted these



Munger: standard goggles, which were supplied at cost to the lookouts. Another thing I remember he rather ingeniously worked out was wanting to detect the effectiveness of lookouts. He used smoke bombs, which were quite harmless, and he'd ignite one some place and then see how long it took for the lookout to discover the smoke. In that way, we discovered what were called "blind spots," spots that the lookouts couldn't see into.

Fry: I suppose this resulted then in either the addition or moving of lookouts.

Munger: Yes, better arrangement of the lookouts in some cases, and also a test of the alertness of the lookouts.

Fry: I guess once this got underway the lookouts never knew whether it would be a test on them or a real fire.

Munger: Yes.

Fry: Did he do the fire studies at the same time he was continuing the growth and yield studies?

Munger: No. The growth and yield project was pretty well finished then.

The latter part of that study was carried on by Walter H. Meyer, who came to the station in 1926; he was a very competent mensurationist. He augmented McArdle's study by applying the normal yield tables to actual stands. That sounds a little technical, but that made a part of the bulletin that was subsequently published. He resumed and



Munger: concluded the study that McArdle had largely dropped in favor of fire studies. We were such a small organization that everybody worked on all sorts of things and helped each other out.

Fry: I was wondering how strictly the lines and duties divided up the employees.

Munger: No, not too sharply, because we all shared things together in the field and in the office.

Fry: So some of you could provide field help for the others if you happened to be going out that day, you mean.

Munger: Yes.

A. G. Simson

Fry: Also on your staff right in this first year or two was A. G. Simson. Hadn't he been on the Experimental Forest?

Munger: Before the days of the Pacific Northwest Forest Experiment Station, A. G. Simson, who was not a forester but was a good deal of a genius, was assigned as a clerk and radio <sup>man</sup> ~~far~~ to the Wind River Experiment Station. Hofmann had underway a study of radio static as a means of predicting lightning storms and changes in humidity. A good deal of equipment was acquired to study atmospheric static and then <sup>he</sup> correlated it with the weather. That was made a major undertaking at





Munger: Wind River for several years. Simson was a pretty good meteorologist, although not trained in that field, and he became more and more interested and engrossed in the causes of forest fires, and the relation of forest fires and weather, and did a good deal in those pioneering days when we were just beginning to get conscious that there was a good deal that research could do in understanding the causes and prevention of forest fires.

Fry: In other words, he contributed this concept of the importance of weather in predicting high fire probability?

Munger: Yes.

Fry: And he used static on the radio as one indication of this?

Munger: Yes. Since the lightning was one of the major causes of forest fires in the national forests, it was very important to be able to predict the coming of lightning storms so that everybody could be alerted. He developed a much better knowledge of the meteorology and also the possibilities--in fact, probabilities--of static as being an indication of the approach of lightning storms.

Fry: How did he get his equipment, and what equipment did he use?

Munger: Well, we bought some elaborate equipment (I forget the name of it now) that was used up there as a very sensitive detector of static.

Fry: Did he work this out mathematically at all?

Munger: No, I don't think so--empirically, I think. Then he worked



- Munger: that into working with McArdle on other types of causative agencies in forest fires.
- Fry: What were the results of his lightning study? Were you able to detect storms?
- Munger: I think it helped, yes. There was a correlation there, and I think it helped. Simson did much in building very portable radios.
- Fry: Were these portables that he started just battery-powered radio units?
- Munger: Yes. The ones that he had a part in devising were very compact. They were the forerunners of the walkie-talkie. I think he went on with that same kind of work as a civilian with the Army after he left us.
- Fry: Were these portables adopted by the Regional Office at that time for use in firefighting?
- Munger: I don't think they were commercially manufactured, no; not until later.

R. H. Westvelt

- Fry: In 1925 Westvelt came to your staff. What was his function?
- Munger: R. H. Westvelt came to us directly from Michigan Agricultural College as a very promising young forester and was assigned largely to studies of ponderosa pine, in central and eastern



Munger: Oregon and Washington, largely to study the role of reproduction, both the advance reproduction and the subsequent reproduction following cutting, and particularly in its relation to the disposal of slashings. He did a lot of very creditable research, much of it on his hands and knees counting seedlings and measuring them following logging operations--both private cuttings and national forest cuttings. That resulted in a notable bulletin. Then, much to my regret, he left to take up a teaching job. I think he left partly because he got tired of the boiled beef, potatoes, and greasy gravy that one got then in those days at the eastern Oregon lumber camps, where he had to live much of the time. He decided that he would prefer a life of a professor in a more urban setting. We missed him very much. In western Oregon the food in the logging camps was good enough for anybody.

Fry: I don't quite understand why there was that difference.

Munger: Well, maybe it was a matter of supply and demand, I don't know. Probably there was some competition.

Fry: What sort of a man was Westvelt?

Munger: He was a very serious-minded, alert student, interested in research aspects of forestry, the theoretical phases of forestry, and did for those days notable work, pioneering in ponderosa pine regeneration following selective cutting. He was thorough and understanding, observant and accurate, not as ingenious in his techniques perhaps as Leo Isaac, but able in his own way, and a good writer, which is very



Munger: important in forestry.

Fry: Did you use his writing talents in helping shape up other reports too, besides his own?

Munger: Possibly. He was the author of a major bulletin, in which I joined as joint author on slash disposal in western yellow pine, now ponderosa pine. He did detailed work in studying the reproduction following selective cutting and the effect of slash, or the burning of slash, on regeneration. This resulted in the joint publication on that subject. He had to live, in those years, at the logging camps, where the food was not of the best, and I think that's one of the reasons that he decided that he would prefer a life of a professor in a more urban setting than the logging camps of central Oregon. We missed him very much.

Fry: The name Westvelt sounds like he was maybe German.

#### Ernest Kolbe

Munger: Ernest Kolbe took Westvelt's place when Westvelt left to do teaching, and he continued similar studies in ponderosa pine for several years; they were largely centered at the Pringle Falls Experimental Forest, which was established about that time.

Fry: So the ponderosa pine reproduction studies then were





Fry: continued until you were able to get some fairly valid conclusions out of this?

Munger: Yes. Kolbe also worked mostly in the pine region. Kolbe, after a few years, joined the Western Pine Association and became their Chief Forester. That organization has now merged with the Western Wood Products Association.

Walter Meyer

Munger: In <sup>1926</sup> ~~the mid-thirties~~, Dr. Walter Meyer joined the station as a mensurationist. He had some European training and came to us highly trained in forest mensuration and mathematics, and contributed a great deal to raising the technical standards of our research. I used to accuse him sometimes of thinking of trees in terms of curves and norms rather than as living organisms, but he was a good field man. He supplemented the studies that McArdle had made in Douglas fir growth and yield.

Fry: Did he come to you as a very young man?

Munger: He had been working elsewhere after graduating from the Yale forest school in 1922, then taking some European training in forest mensuration and then came to us and worked largely on mensuration problems for the several years that he was there. The latter part of the period he made major studies



Munger: in ponderosa pine growth and yield, and in spruce and hemlock forests.

After a few years, Walter Meyer felt the urge to teach, and joined the faculty of the University of Washington; and, a few years after that, Yale called him, and he was a professor there until his retirement a few years ago.

Leo Isaac

Fry: We need to know something about one more staff member of the Research Station--Leo Isaac, who did much Douglas fir work.

Munger: Leo Isaac was brought into the Wind River Experimental Forest before the Pacific Northwest Forest Experiment Station was started, because he was a young forester who showed promise for research. He worked on natural reproduction studies, mostly in the Douglas fir region, with me for many years, and we were in the field a great deal together. He was an extraordinarily close observer and had good eyes for seeing seedlings and unusual things in the forest. We worked very harmoniously together for many years.

Fry: Was Leo Isaac the sort of person that could figure out ingenious ways to get at the information he was trying to research?







Munger: Yes. Leo Isaac had an ingenious turn of mind that helped him devise the means of getting information in those days of rather crude, primitive research. For example, when studying the dispersal of seed, because we were interested in finding out how far individual seed trees might be effective, he thought up the idea of dropping seed from a kite on a snow field. He went over into eastern Oregon, put up a kite, and, noting the wind velocity, got a very accurate pattern on the snow of the dissemination of the seed under certain wind conditions. That's just one illustration of the kind of thing that he worked out.

Fry: Did you help him on that?

Munger: Oh, I encouraged him but that was his project.

Munger: There were other direct experimental methods of testing seed scattering which had quite a bearing on our recommendations as to how frequently blocks of seed trees should be left. He made a notable contribution to the subject of natural regeneration of Douglas fir.

Fry: How did his work in Douglas fir relate to McArdle's?

Munger: Isaac's work was primarily during those years, and for a long time afterward, on the reproduction of Douglas fir, including matters of seed supply, and of seed dissemination. It was analogous to what Westvelt was doing in the pine region. He also took part in such things as the Douglas fir heredity study and published some planting studies too.





Fry: How would you characterize him as a worker?

Munger: He was an exceedingly sharp observer. He could see little one year old seedlings when the ordinary person would pass them by and not discover them. He was an excellent woodsman and outdoorsman and a close observer.

Fry: How do you evaluate Isaac's work? Has it held up pretty well in time, or have some of his conclusions had to be revised?

Munger: Well, he did valuable pioneering work in determining the habits of Douglas fir reproduction, and it formed the basis for our silvicultural knowledge of the species. I think he made a great contribution in his accurately conducted field work on that score.

Fry: In other words, are you saying that he really found out basic information that has served as a foundation in this particular area?

Munger: Yes. Our detailed work was carried on over several years by him and others working with him. We worked out the principles of seed production and dissemination, and germination and survival of seedlings under various kinds of conditions--information that now everybody takes for granted--but in those days in the 1920's the principles weren't well understood at all.



William G. Morris

Fry: Can you tell us something about William G. Morris?

Munger: Morris was one of the early crew on the Pacific Northwest Experiment Station. He came to us in 1931 directly from the University of Washington Forestry School; he had a splendid mind, very much slanted toward research, and did valuable work for a number of years on a variety of subjects, particularly in the field of fire, which has been his professional interest since then. He is still with the Station. But he was one of the well qualified, enthusiastic workers in the early days.

Fry: Was Simson, who did the work in meteorology and fire, gone by the time Morris came?

Munger: Yes. I don't think they overlapped. Morris, I think, was primarily on fire studies. He was concerned with fire prevention techniques, causes of fire, lightning storm mapping, and fire suppression research.

Morris also devoted considerable time to the follow-up of the Douglas fir heredity study that was started in 1913 of the progeny of about 125 Douglas firs. He re-examined those plantations a number of times and authored reports on them.

Fry: These are reports published by the Experiment Station and the Forest Service?



Munger: Yes, and as a Department of Agriculture publication.

Fry: In all of these studies that you started in this first four or five years of the Research Station, were any of these continuations of some of the studies done before under the old Section of Silvics?

Munger: Yes. We kept up such plots as had been put in in the early days, and a good many more permanent plots were established in Westvelt's and Kolbe's day--tagging the trees to study their growth, mortality, and the instance of reproduction. Kolbe did a lot of that permanent plot establishment.

Fry: You had some heredity studies back there in the nineteen-teens; were any of those continued?

Munger: Yes. I have already spoken of the Douglas fir heredity study begun in 1918<sup>3</sup> and continued to this day. We wanted to investigate also the regional races of ponderosa pine, knowing that there was a great difference in the behavior of the progeny from the Black Hills, we'll say, and from California or from Arizona. So we got batches of seed from about a dozen localities, and they were outplanted in half a dozen places and have been followed ever since. They show striking differences in the growth and form of the young trees according to the seed source. That was a kind of sister study to one that was made in the northern Rocky Mountains with the same ends in view. We called this the



Munger: "Regional Races of Western Yellow Pine," and it has yielded rather significant information as to what races are superior in growth rate, etc. These outplantings were made partly in co-operation with the Oregon State School of Forestry, with the University of Washington School of Forestry, and the Washington Agricultural College School of Forestry, as well as plantations on the Whitman, Deschutes, and Columbia National Forests.

Fry: In what way did the educational institutions co-operate?

Munger: They made the periodic examinations for us.

Fry: With their forestry students, you mean?

Munger: I presume so, yes. One of them made it a subject of a graduation thesis.

Fry: When you have a sister study like this, a research project that's going on in another region, how do you co-ordinate the two and exchange information?

Munger: I'm afraid we didn't do much in this particular instance except compare results after we were through.





## GROWTH AND YIELD STUDIES

Pine

Fry: You had some substantial Douglas fir studies in growth and yield, I understand. Also some in pine and spruce.

Munger: Yes, in addition to the Growth and Yield Study of Douglas fir conducted by McArdle and finished up by Dr. Walter Meyer over a period of about four years, there were growth and yield studies made by Walter Meyer of ponderosa pine, Sitka spruce, and hemlock--all of which resulted in publications by him that were very creditable to the station. At that same time, silvicultural studies were underway in the eastern part of Oregon and Washington, at first conducted by Westvelt and later by Kolbe, consisting in detailed studies of both virgin forests and cutover land, partly by means of temporary transects and later by permanent plots, which were established for repeated observation. Those studies in ponderosa pine also resulted in publications on silvicultural management and slash disposal.

Fry: This got into the problem of whether or not to burn for slash disposal?

Munger: Yes. The problem of slash disposal has been a live issue



Munger: both in the pine region and in the Douglas fir region for many years, and the station made it a matter of major study through a term of years. Many of us realized that burning the debris in ponderosa pine was destroying valuable nutrient material, but the fire protectionists thought it was necessary to stave off the possibility of a great conflagration. So under the pressure of the forest protection people, the complete burning of logging debris was practiced for quite a number of years--broadcast burning in the Douglas fir region, and piling and burning in the pine region.

Fry: Was it a state law at this time that this had to be burned?

Munger: Yes. The state law in both Oregon and Washington almost made burning compulsory, in other words made the party that didn't dispose of its slashings liable if a fire spread and did damage to others, so that the law was an encouragement. But we silviculturalists still didn't think that it was the ideal forest management and made studies to indicate what the effects, good and bad, were of burning and not burning.

Fry: What effect did this have, Mr. Munger, on legislation and on forest practice on the part of private owners?

Munger: The idea of not burning gained increasing acceptance, partly because of better protection methods, better utilization of the tree, and concomitant with the easing up of the state laws on burning. So now the preachments of the experiment station many years ago are in practice--preachments of quite



Munger: limited burning in both the Douglas fir and the pine region.

Fry: I suppose along with this the increased methods of fire protection and so forth has...

Munger: Made it much safer to leave slashings unburned, yes.

Fry: These growth and yield tables, I understand, are still the basis for many running inventories and projections from inventories on the part of large timber companies and the Forest Service today. All that you can give us about how these were made and your evaluation of the way they were made at that time would be quite valuable.

Munger: Well, the techniques of making growth and yield tables are somewhat different in even-age stands from what they are in uneven-age stands. But in the Douglas fir region the principal system was to measure stands of different ages on different site qualities of land and so prepare a table showing what normally should be produced. Those tables made in those days are still standard, except for more intensive utilization at the present time. In the pine region, the studies were largely based on the analysis of individual trees, and putting those together to see what the growth would be in a stand.

Fry: Was this done through the study of the rings?

Munger: Yes.

Fry: Did they take borings or cut the trees down?

Munger: Mostly on cuttings, yes.



Fry: What were some of the other factors besides slash disposal that emerged as guidelines for people interested in reforestation?

Munger: Well, the density of stocking had considerable bearing on the rate of growth in pine stands, where there is limited soil moisture; that was a consideration in determining at what point you reached maximum growth. For that purpose, some thinnings were made in dense thickets to see what would happen if you thinned these thickets, whether they would grow faster--as they did.

Fry: This did lead to the practice of thinning pine stands?

Munger: Yes. That was proven to be a desirable practice, but the economic problems of doing it were rather difficult. However, in the CCC days of cheap labor there was some of that done.

Another factor that was given a good deal of consideration, with the co-operation of the entomologists of the Bureau of Entomology, was the susceptibility to bark beetle depredations. It was found that trees could be classified according to their likelihood of being attacked by bark beetles; and there was developed thereby what was called the Keen tree classification, which was adopted as a guide in marking trees for a selection cutting.

Fry: Is this in a publication?

Munger: Yes, it is in various forms.





Fry: Who carried on this work in entomology?

Munger: Well, F. Paul Keen was assigned to this region for a number of years and did the major amount of the work in that field. This tree classification is named for him.

Fry: What were some of the methods used to determine susceptibility?

Munger: Well, it was observational methods partly, but also by permanent plots. He had some large areas marked in which he watched the incidence of bark beetle attack, but I'm not too familiar with the details of his pioneering work.

Fry: Mr. Clarence Richen, who is head of Crown Zellerbach's Northwest Timber, told me that this is something that's still used a great deal too--

\*

Munger: Yes, I think so.

Fry: --That it was really a landmark type of study.

There were some studies done on selective cutting technique and selection of trees in Douglas fir, the Brandstrom and Kirkland studies.

Munger: First, while we're speaking about ponderosa pine, let's continue that. Coincident with Keen's work on the susceptibility of trees to bark beetle attack, the station carried on, largely under the direction of Axel Brandstrom, studies of the economics of selection cutting in ponderosa pine. He rated trees according to the quality of lumber that they

\* cf. Richen, Clarence, Interview with Amelia Fry, Regional Oral History Office, Bancroft Library, University of California at Berkeley, 1966, manuscript.



Munger: would produce, their cost to manufacture, their probable growth rate, and their susceptibility to insect damage. Putting those factors together, he arrived at guidelines for deciding what trees ought to be cut in the first rotation and what could profitably be left to grow for another twenty, thirty, forty years. That was given the name of the Maturity Selection System, and it has practically become standard practice on the national forests as well as on private lands. It marked a notable progress in the more intelligent selection cutting of ponderosa pine. That is a brief summary of a long and complicated study. It was accompanied by mill production studies conducted by the Section of Products to show what the cost of manufacturing logs of different sizes and grades was and the value of the product therefrom. It was quite an eye-opener to people to discover that many lumbermen were cutting trees or utilizing logs that would have brought them much more return if they'd waited another twenty, thirty years before harvesting them.

Fry: This took place over quite a few years, didn't it?

Munger: Yes. In the thirties.

Fry: This was also part of Kirkland's work too?

Munger: No. Kirkland's work was entirely in Douglas fir.



Douglas Fir: The Selective Cutting Controversy

Fry: It isn't clear to me how they divided this up.

Munger: Well, the two studies are entirely separate--the ponderosa pine and the Douglas fir studies--but they were more or less concurrent. Brandstrom had a part in each, and also the Section of Products had a part in each in making the mill production studies that were a necessary part of it. One important factor in those studies was the beginning of the use of tractors in logging in the Douglas fir region, so the fir study started by making studies of the cost of logging by tractors versus donkey engines and railroads.

Fry: I believe that the bulletin on selective cutting in Douglas fir came out in 1936. How much of an impact did this have at the time?

Munger: The study started with a logging cost study, and it pointed toward the possibilities of doing certain selective cutting in the Douglas fir region as a profitable, economic procedure. Under the methods of donkey engine logging, nothing had been really possible except clear-cutting of considerable areas, but the use of tractors opened up the possibility of doing some selection.

So Kirkland and Brandstrom made studies of the relative value of different sizes and kinds of trees, not only species



Munger: but age and size.

Fry: Was there also some study about the selection of trees which were more susceptible to insect infestation?

Munger: The hazard of insects didn't have much part in the Douglas fir region; that wasn't much of a factor. It was a more important factor in the ponderosa pine region.

Fry: So they had a rather definite conclusion as to the type of cutting practice that their study seemed to indicate?

Munger: Yes, Brandstrom and Kirkland then came out with the rather strong recommendation that a certain degree of selection could be practiced with great immediate profit to the operator. A bulletin to that end was finally published. Also as the result of the recommendations of the Brandstrom-Kirkland report, for a few years considerable selective cutting was practiced in the Douglas fir region on the national forests. But it was soon found to be undesirable and unworkable and was discarded.

Fry: In a case like this, how important was it for the Station staff to back a study which was done by two people on the staff?

Munger: It made considerable controversy between those who saw the silvicultural objections to selective cutting and those who saw the economic advantages, and the result was that the manuscript was very materially modified before publication from the way it was originally written.





Fry: In your position, I guess you were ultimately responsible for the papers that were published that came out of your Station, so that you had a role as a sort of editor.

Munger: Yes, and I wouldn't approve the publication of the report. But the Washington office rather went over my head on that matter and decided it was to be published. However, as a result of a trip back to Washington, D.C., and long conferences, the report was much modified before publication.

Fry: So you had Brandstrom and Kirkland, the former of whom was under you in the Station, influencing the Regional Forester in his cutting practices and you were left holding the clear cutting bag alone?

Munger: Hardly alone. There was general, but not very vocal, favoring of clear cutting as the soundest method of silviculture in Douglas fir, and also muffled disapproval on the National Forests of the orders to practice selective cutting. The "experiment" on the National Forests lasted only about two years. I recall that Ferd Silcox, then Chief Forester, on a visit to Portland complimented me on the stand I had taken.

Fry: How did Leo Isaac stand on this?

Munger: Well, he was kind of neutral for awhile.

Fry: He hadn't written anything at this time on this type of thing?

Munger: No. The economic principles of selective timber management are theoretically sound, but the practical, silvicultural objections to partial cutting in this type are paramount. Isaac later conducted silvicultural studies in areas of Douglas fir that had been selectively cut which resulted in observational proof of the superiority of clear cutting.



Fry: How did the Regional Office fit into something like this?  
Did it take sides?

Munger: The Regional Forester was very much impressed with the possibilities of tractor logging and doing selective cutting in Douglas fir, and he wanted it practiced on the national forests in spite of the remonstrance of us in the Experiment Station.

For awhile it was a matter of the Experiment Station pitted against the Regional Office that was strongly advocating selective cutting in Douglas fir.

The Experiment Station's later study, run by Leo Isaac, showed the unwisdom of it for various reasons. We put in a lot of plots in these so-called selectively cut areas to see just what had happened--how the trees had been scarred, how much windfall there was, what the value of the residual stand was in comparison to the material that was taken off. Even though there is very little formally published, there was a great deal informally published and passed around liberally, you might say, so that it was convincing evidence that it wasn't a practical procedure in most of the Douglas fir region. I wouldn't say all the Douglas fir region; there are certain types of Douglas fir forest, particularly in southern Oregon, where selective cutting is a practical procedure and is still practiced somewhat. In southwestern Oregon they have a little different stand structure from what we have up north.

Fry: When they finally came around then to changing back to clear



Fry: cutting, was this because of any influence of the Experiment Station, or was it because of their own experience on their forests?

Munger: It came about partly because of a change in administration in the Regional Office, and partly because of the acceptance of the Experiment Station's ideas on the subject, coupled with the experience of those on the timber sales who had seen the disadvantages of the selective cuttings.

Fry: Had you been able to talk against the idea of selective cutting while it was the official policy of the Region?

Munger: I think I told you before (off-tape) of a speech I gave to the University of Washington. This was given before the Puget Sound Section of the Society of American Foresters. It was my summation of the subject of selective cutting in Douglas fir. The Regional Forester (I don't want to put this on the record, but you can't stop it, I guess) tried to block the publication of it, and the matter was appealed to Washington, and Washington approved publication of it. That had a considerable impact at the time.

Fry: You mean the pamphlet did, or the controversy?

Munger: The pamphlet, yes, this article.

Fry: Did it appear as a separate pamphlet?

Munger: I could get it if you wanted a citation of it. I think I can find it in a minute.

Fry: I would like to have the reference...



Munger: [Bringing out scrapbook of publications] "The Silviculture of Tree Selection Cutting in the Douglas Fir Region," University of Washington, Forest Club Quarterly, March, 1939.

Fry: That is certainly a well-kept collection of papers and articles.

Munger: [Looking over scrapbook] Here is "Basic Considerations in the Management of Ponderosa Pine Forests by the Maturity Selection System," a manuscript for which I didn't have a printed copy.

Fry: That is one of your papers in the controversy you had with Pearson in the Southwestern Region?

Munger: Yes. About the time we were developing in the Pacific Northwest a new approach to selective cutting in ponderosa pine, which we called the "maturity selection system," Director <sup>Pearson</sup> ~~Pierson~~ in the Southwest was advocating a somewhat different technique which he called "improvement selection cutting." Both methods were described in Journal of Forestry articles in 1941-2 by their respective proponents, followed by comments in rebuttal in later Journals.

Here is "Handbook of Forest Practice for the West Coast Logging and Lumber Division," a very important publication at the time of the Lumber Code in 1934.

Fry: And that came out of your Experiment Station here?

Munger: Yes, anonymously. I wrote here, "Written chiefly by Thornton





Munger: T. Munger and Richard E. McArdle, and drawings by Anita Kellogg," who was a WPA worker in the depression years. She made these rather clever drawings; she had never been in the woods, but we showed the different methods of logging by these pictures--single seed tree, block cutting, and so on.

Fry: I hope these scrapbooks can be put in with your diaries at Yale's Forest History Society.

Munger: I think that might be the ultimate place for them, especially if they've got any way of cataloging them, because some of these things will not be found in regular publications that are easily available. One of the things that we tried to do at the Station was to turn out material currently, and even in provisional form.

Fry: That S.A.F. section, before which you read your Douglas fir paper, included the whole state of Washington, didn't it, or was it just that area around Puget Sound?

Munger: Everything except the Columbia River counties; they're in the Columbia River Section of the S.A.F.

Fry: How long did the selective cutting policy hold sway in the national forests?

Munger: It was practiced for only a few years and then abandoned, and clear-cutting ever since the late thirties has been the universal practice in Douglas fir stands on the national forests, except in rare cases where the stand's structure



Munger: was such as would allow some selectivity. Selective cutting was proven undesirable from various points of view, difficulty of slash disposal, damage to the residual trees, wind-fall, and the economic disadvantage of removing the high-grade and leaving the low-grade material.

Fry: Did Walter Lund\* have anything to do with it?

Munger: No, that was before his day. He would know about it though. C. J. Buck was the Regional Forester at the time, and he was the great proponent of selective cutting--at the instigation, largely, of Brandstrom and Kirkland.

Fry: Were they still at the Station then when the Region reverted to a policy of block cutting?

Munger: Brandstrom was; Kirkland was in the Washington office by that time, theoretically, but working here.

Fry: How did this rejection of selective cutting affect the careers of Brandstrom and Kirkland? What did they go on to do?

Munger: It didn't affect their careers or our friendship. Brandstrom, before the publication of his results in the ponderosa pine region, which came shortly after that, resigned to join the staff of the Crown Zellerbach Company Corporation as a forester.

Fry: This is a company with considerable Douglas fir lands, so he was well accepted as a figure in the field?

Munger: Yes, a very competent logging engineer and forest economist.. And Kirkland continued in the Washington Office of Research.

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\* Assistant to Regional chief of timber management; later in charge of timber management for the Region.



Fry: How did all this selective cutting talk affect the timber management practices in private Douglas fir lands?

Munger: Well, the practicability of using tractors instead of steam donkeys made it physically possible to pick up a tree here and there, and not clear cut. The tendency was to high-grade, take the high value trees and leave the lower grade ones or the lower grade species, take the Douglas fir and leave the hemlock, which was a high-grading practice; that's what this selective cutting was inclined to degenerate into. It had the immediate economic advantage of harvesting much of the value but leaving a forest in a rather deplorable condition, if practiced in the extreme. There was a phrase that was used at that time which, translated, means, "A selection forest must not become a plunder forest." Der plenterwald muss nicht ein plunderwald werden. It was the experience in Germany that that was the danger--that selection cutting would become a plunderwald, a plunder forest.

Fry: Was this primarily something that was practiced by the smaller companies?

Munger: No.

Fry: It was all over industry?

Munger: Yes. But not very many of them, because it was not everywhere that tractor logging was practicable.

Fry: Because of the terrain?



Munger: Yes, and soil and the climate--mud.

I saw Bill Hagenstein\* the other day, and he said,  
 "Do you remember, 'Der plenterwald muss nicht ein plunderwald  
 werden'? You told me that back in the early 1940's."

Have you had an interview with him?

Fry: No.

Munger: Well you should. He's president of the Society of American Foresters now.

Fry: Yes, I know. I almost got to see him when I was here last time, but I'm going to have to make another effort.

Munger: He's quite a person.

Did you have down on your list (I don't know why I thought of it) a thought of interviewing Walter McCulloch?

Fry: No, I don't have his name down.

Munger: Well, he's having a serious operation today. He's the beloved dean of Oregon State College who, because of ill health, dropped out a couple of years ago. He is vocal and exceedingly well informed, but of course his experience has been in Oregon state forestry and as a teacher, so he couldn't  
 \*\*  
 be a part of a Forest Service series.

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Hagenstein, Executive Secretary of Industrial Forestry Ass'n.  
 \*\*McCulloch, Walter, Interview with Amelia Fry, Regional Oral History Office, the Bancroft Library, University of California, Berkeley, manuscript, Forest History Society, Yale University, 1967.





## THE FOREST SURVEY, 1929

Fry: Is my view correct, that these were your most important studies, or are there others? Of course there was the timber survey, but that's not silvicultural research.

Munger: The major study, beginning in 1929, was the Forest Survey. In 1929 there was an authorization for a national study of forest resources, of growth and demands, and this station got the first allotment for that study and began work on July 1, 1929, with the assembling of a very small crew. We had, in anticipation of the need for this study, already started in a small way assembling information on the forest resources of all lands in Oregon and Washington but had not got very far before this large project came to us with a small allotment. H. J. Andrews, who had done notable work in making a land economic survey of Michigan, was persuaded to come out here to take charge of the forest survey. Before he got here, three or four others, Philip Briegleb, R. W. Cowlin, and Floyd Moravets were making a beginning on the study. It was the largest project in point of manpower and money available for several years at the station.

One interesting, rather technical aspect of that study was our proposal here to make a complete coverage of the



Munger: ground so that a type map would be possible showing the various age classes and species of timber, as well as a statistical assembly of the volume of timber of all species and age classes.

We went ahead on that basis, and one of our methods was to compile existing cruises. The states had county cruises; many of the companies had cruises of their lands; all agencies were very co-operative in giving us their cruise data. However, some of the cruises were very conservative, so that they needed to be brought up to a common standard. We had some very competent cruisers check sample areas of these existing cruises to determine a correction factor. It might be that these private cruises or county cruises were low 20 per cent on hemlock and low 10 per cent on Douglas fir, and we adjusted their cruises accordingly. The results were not issued except compiled in units of 100 or 160 acres or so, so that it did not disclose the stand of timber on any small, particular area, but it did result in very good type maps.

We had made considerable progress by that method when the Washington office became much impressed by the success of a sampling method that was used in Sweden, by which strips were run every few miles across the country, making an absolutely mechanical sampling of the forest volume. It gave probably very accurate results for a very large area, but



Munger: did not give specific information for type maps, because the strips would be perhaps ten miles apart. The Washington office thought that there was much to be said in favor of that strip method of making our inventory. We wanted to continue our complete coverage by the compilation method that we were using. So they said, "Well, let's try out and see which is the best method." So in the dead of winter we put quite a competent crew out to cover an area by the strip method, I think running strips ten miles apart east and west, up and downhill, on an area that had already been covered by the 100 per cent compilation method.

When the results were compared, the Washington office was satisfied that our method was as good and had many superior advantages, so we proceeded from then on doing a compilation of existing cruises and filling out where we needed to, adjusting them to a common standard. The result was a type map that showed, as I recall, about thirty-five different types or age classes of timber in colors. That, I think, was the largest area that had ever been type mapped. I think some thirty-three million acres were covered that way. The maps were printed by the United States Geological Survey, which did a superb job of lithographing in colors to show these thirty-five or so different types and age classes.

Fry: What sort of co-operation did you get in getting cruise data from the companies for this project?



Munger: Nearly all of them were very co-operative just so long as we didn't disclose the volume of timber in any small area, because that information, in case they were selling timber, they didn't want to have available to everybody. So we were very careful not to disclose the volume in any small area but got from their maps the type classification and the volume estimates. Some were very accurate and very detailed; some were very general, and we tried to reduce those to a common standard of accuracy.

Fry: Couldn't this information affect the tax assessments levied on the timber owners?

Munger: If we had disclosed the volume on any specific area, yes, so we didn't do that.

The statistical results were published by counties as fast as a county was completed. Concurrent with that, a sampling was made of growth, so that there was a possibility of making a prediction as to what the potential growth was and what the actual growth was by counties.

Fry: This was both in old growth and second growth?

Munger: Yes, putting all together. It's rather interesting that at that time, in the mid-thirties, we classified the country as to its economic availability in three categories. The lowest category was that which was probably uneconomic to operate. Now, thirty years later, there is eager demand to buy that class of timber--the higher mountain, more remote timber. Thirty years ago we thought it had no value; now





Munger: it's very valuable.

Fry: Because of terrain and remoteness, is that what you mean?

Munger: Yes.

Fry: I was wondering what sort of co-operation or use you made of the departments and schools of forestry such as Oregon State and the University of Washington.

Munger: Well, of course they furnished the students for summer employment in quite a large way. The students from both schools were used on all kinds of projects every summer. Some took a year out of school and stayed on through the year, which we always liked.

Fry: I would like to ask you to tell how you added land to your to your experimental forests. There was some expansion in this, beginning in the early thirties.

Munger: Soon after the creation of the Pacific Northwest Forest Experiment Station in 1924, we followed what had become a national policy of concentrating research on definite experimental forests, which would be provided with office and housing facilities and so on. In addition to Wind River, which had been set up as a little experimental station with a certain amount of land designated for it way back in 1915, a series of experimental forests was established along in the late twenties, representative of the several forest types. They are the Cascade Head Experimental Forest in spruce and hemlock on the Oregon coast, Pringle Falls on the Deschutes



Munger: National Forest in central Oregon, the Blue Mountain Experimental Forest in the Blue Mountain ponderosa pine country, and the Port Orford Cedar Experimental Forest in southwestern Oregon, where that species was conspicuous. So we had a series of five experimental forests, each I think containing about ten thousand acres.

Fry: This was acquired largely through the Regional Office?

Munger: Well, all these areas were part of the national forests, and with the acquiescence of the Regional Office these areas were set apart for research, in which the timber resources would be under the jurisdiction of the Experiment Station. However, the national forest continued to do the protection, road building and so on. In the Civilian Conservation Corps days we had a side camp, as it was called, of twenty-five men at several of these areas. They did a lot of development work, including building residences and office buildings at several places. On each of these five experimental forests they did a substantial amount of building.

Fry: Was there any concern at this time on the part of the staff at the Regional Office that this area might be needed for timber sales, or were timber sales not emphasized very much at this time?

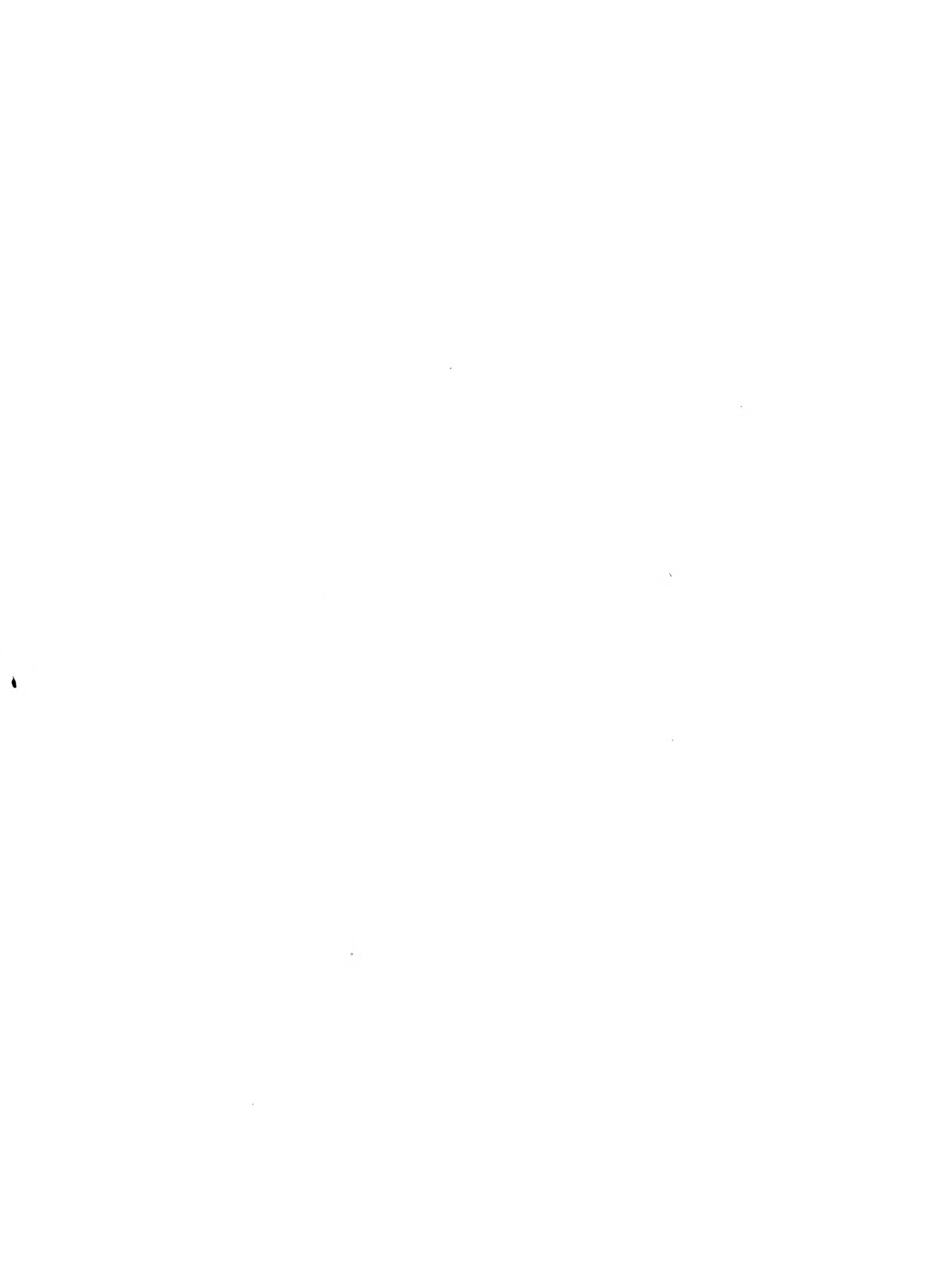
Munger: Well, they were, but among the higher-ups anyway there was a general acceptance that research was important and that it



Munger: could well give way to administrative needs, although that wasn't universally the case down the line. However, the theory of the management of the experimental forests was that there would be experimental cutting on them, so that the timber would ultimately contribute toward the economy of the region, and that has been the case. Material timber cutting has been done on each of them, I think.

Fry: So there is utilization of the timber that's cut.

Munger: Yes, although in each of the experimental forests a section was set up as a natural area to make a comparison of the original virgin forest with young forest or cut over land, hoping that it would be left in its primitive condition as a museum piece. I mentioned that in the discussion of natural areas.



## FOREST PRODUCTS STUDIES

- Fry: Is there more to say about your research into forest products? You had mentioned the mill studies in conjunction with the Growth and Yield Study, and I understand that the Regional Office has a Section of Forest Products that was transferred to your station in 1931.
- Munger: Yes, that's so, with a personnel of three at the time-- Allen Hodgson, and later Dr. J. Elton Lodewick, and Herman Johnson. They continued under the Experiment Station practically the same line of work that they had been conducting in the Regional Office, and that included making mill production studies, carrying on the annual lumber production census for the Bureau of the Census, and other work, some of it in liaison with the Forest Products Laboratory in Madison. The Section of Forest Products worked very closely with Brandstrom in his studies of economics of timber cutting.
- Fry: Did they go into any other utilization inquiries besides the ordinary sawmill, such things as pulp?
- Munger: It became quite an important information office, because they were the clearing house for information on new methods and products that partly had been worked out in the Madison laboratory. So they served as a service agency for the local industry on such matters.





Fry: This sounds like they might have been one of your departments that had closer touch with industry than any other. Is this true?

Munger: Yes. They did have points of touch that others of us didn't have. Shortly after that, the Station was enlarged by a very small branch studying range and grazing in 1937. A couple of men started making range utilization studies, and subsequently a very large range experimental area was created in eastern Oregon where the studies were concentrated, but that was mostly after my day.

Fry: Did this come primarily from the concern of Forest Service management of range lands, or was it also a shared concern of forest industry owners?

Munger: No, I don't think the forest industries took much interest in the range studies. But the national forest administration was very eager to learn more about the care of ranges, because many of the ranges were so badly over-grazed, and deteriorating, that it took a careful study to find out just how to bring them back. That included the introduction of new grasses. The stockmen were also interested in seeing how they could get the maximum growth of their animals without damaging the range, and that was part of the studies. The range men naturally were concerned with one important factor--the effect of grazing on soil movement, soil erosion.



Fry: What about erosion in relation to forest lands, and tax delinquent forest lands in particular?



## TAXATION STUDIES

Munger: Well, you speak of tax delinquency. We conducted for some time a study of the tax delinquency problem. In the mid-thirties, the depression years, there was a very large area that was going back to the counties for failure to pay taxes. The Washington office called it the New Public Domain Study, I think, because so much private land was going into public ownership. Sinclair A. Wilson, who was both a forester and trained in business, devoted his time for a couple of years to just this land problem of how much of it there was, and what could be done about it, and what were the remedies. That resulted in a manuscript which I think was never published.

In the late 1920's and thirties there was a national study being made under Professor Fred R. Fairchild of Yale on forest taxation. One of the study areas that they wanted to probe into was the Pacific Northwest, so R. C. Hall\* of their forest taxation staff was quartered here at the Experiment Station for the best part of a year, I think, and was with some help studying the local problems of forest

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\* cf. Hall, R.C., typed manuscript on the forest taxation study, Regional Oral History Office, University of California, Berkeley, 1965.



Munger: taxation. He was followed by Wade deVries, who continued the taxation studies. It became a part of the national publication by Fairchild and others.

At about that time, though it was not part of the national forest taxation study, the Experiment Station had considerable to do with drafting a forest taxation law to apply to reforestation lands in Oregon, which was subsequently passed. I, at about that time, sat on a forest taxation committee appointed by the governor in 1936, which had a good many meetings digging into the problem.

Fry: I'd like to know a great deal about that, because this is one of the really important influences that contributed to the adoption of better forestry practices in Oregon by making them economically feasible from the tax standpoint. Could you tell me some of the major concerns of the timber owners in considering the various alternatives of taxation here?

Munger: Well, it's a long story, much of which has faded from my mind, but all of those who were interested in the perpetuation of the forests knew that something ought to be done, because the method of taxation was driving people to cut faster than they really wanted to or than the market justified. There were all sorts of proposals of deferred taxes and yield taxes and so on, but Oregon finally adopted what was a very sensible compromise, in which reforestation land--that is,





Munger: land that was not economically ready for cutting--had a nominal land tax, then when the timber was cut, a yield tax, which at the start was 12 1/2 per cent of valuation. That became the Oregon law, and a similar law was passed about the same time in Washington, and it has had fair acceptance and been modified somewhat since then.

Fry: Could you tell me who was on the Special Committee on Forest Taxation, besides yourself?

Munger: Charles Galloway was chairman. Others were R. D. Moore of the Shevlin Hixon Lumber Company and Aubrey Watzck and Earl B. Day. Its report, "Oregon's Timber Taxation Problems," was published by the state in 1937.

Fry: What other types of taxation were considered at the time? Was there much talk of putting this on a straight income tax basis, for instance, as the timber was harvested?

Munger: That was one of the proposals on the yield tax, but then the people that had been paying these high taxes for years and years didn't want to have a superimposed yield tax. There was a proposal that the yield tax be graduated--1 per cent for the first year and increasing gradually until it got up to a reasonable amount, a sufficient amount, but that didn't gain acceptance. In some counties the tax was even lower than the amount fixed by this new bill and that naturally drew the disapproval of the landowners in that county. One of the difficulties in getting tax reform was caused by



Munger: the tremendous variation from county to county and the fickleness and vagaries of the tax assessors in the several counties, their treatment particularly of immature forest land and the unreliability of the cruises on which they depended for older growth.

Fry: How did you go about, if you did, gaining acceptance for this in the state legislature? Did you participate in that at all?

Munger: Well, the Forest Experiment Station, being a federal agency, did not attempt to influence state legislation; it never has. All it did was give technical advice on the form such proposed legislation might take and the effects it might have; simply technical advice was our only part in it.

Fry: Would any of this be in the form of testimony before legislative committees?

Munger: No, because we didn't take part in that.

Fry: Were there any other points of resistance besides this one, that is, from landowners whose tax rates would have increased if this had passed?

Munger: I don't think so, although many of the county officials didn't welcome any change, fearing the effect on their revenues. Of course, the purpose of it was to lighten the burden of the landowner who wanted to practice forestry but couldn't afford to because he was taxed annually on the crop; agriculturalists don't pay for a crop but once, and



Munger: usually the assessment is made when there isn't any crop on the ground.

Fry: What sort of backing were the agriculturalists able to give this? Were they for it generally?

Munger: I really don't recollect that, but of course since the Oregon legislature was then controlled a good deal by agriculturalists, I think they must have accepted it because the bill passed.

Fry: Was any large part of your staff connected with the study of this?

Munger: No. The taxation group was at most a couple of people.

Fry: Did your part in this include talking with forest landowners in the primary investigation?

Munger: Yes. I recall I did some writing for the newspapers on the subject and gave our technical views on the need for tax reform and the proposed methods that might relieve the burden and make possible the holding of land for future crops.



## INDUSTRIAL FORESTRY COMMITTEE OF THE SOCIETY OF AMERICAN FORESTERS

Fry: I want to ask you now about your work with the Industrial Forestry Committee of the Society of American Foresters. I believe that C. S. Chapman of the Weyerhaeuser Timber Company was chairman of a committee of the local S. A. F. section to investigate and report on private and industrial forestry in the Region, and that the man whom you already mentioned as being later on your staff, Allen Hodgson, was secretary of the north Pacific section of S. A. F. at that time. Do you remember this?

Munger: No, not as a Society of American Foresters committee.

Fry: This was part of a survey in 1928 to see what type of timber land management was being used, if any at all, on such things as fire prevention, slash disposal, and utilization. Hodgson said that the outlook was encouraging; but there really wasn't a great deal reported on the Olympic Peninsula at that time. There was some problem between another committee appointed by Ovid Butler which was headed up by Shirley Allen. It was on this committee headed by Allen that you did most of your work, I believe.

Munger: I am very vague as to just what my part was in that study at that time.





Munger: This might be called a sort of follow-up of the "Minimum Requirements Study." That study, begun in the early 1920's, was aimed at defining the minimum requirements expected of lumbermen to keep land productive after logging. I was assigned to write up the Douglas Fir Region. Robert Weidman (then in the Northern Rocky Mountain Station, formerly in Region 6) was given the ponderosa pine type to write up. The resulting reports for the several forest types were printed as a series, with an introduction by Col. Greeley. Mine for the Douglas Fir region was published in 1927 as U.S. Department of Agriculture Bulletin 1493. This project also embraced "desirable forest practices," that is, measures necessary to produce full timber crops. This aspect was treated in the same bulletin.

Fry: I understand from your diary that in the report there was a question about whether to mention by name the companies that had actually incorporated some forestry practices into their land management operations and whether this would serve to stimulate the industry or whether it might create some hurt feelings on the part of those who were not mentioned.

Munger: Yes, I have some memory of the discussion of the wisdom of disclosing the identity of the different companies and rating them by name, but working with that committee is quite vague in my mind.



## THE REX BLACK INQUIRY, S. A. F.

Fry: I'd like to ask you about the Rex Black affair--the California forester whose membership in the Society of American Foresters was cancelled because of his activities in trying to oust the state forester.\* This action took place in 1935 and 1936. I believe you told me that you were on the local committee, in the Columbia River Section of the S. A. F., which was appointed to investigate Black's activities. Do you remember who else was on this committee?

Munger: Only that W. B. Greeley was chairman.

It was picked as an impartial committee away from the center of the trouble and was acting for the national interest. The conclusion was that there was nothing too reprehensible in Black's behavior but that he should be reprimanded at least, which was done, I think.

Fry: In the central committee which was under the national S. A. F., there was Ed Kotok, and there was Emmanuel Fritz.

Munger: They were members of the Board of the S. A. F., weren't they?

Fry: Yes. And they voted to take away Black's membership. I wonder where we could pick up information on the earlier proceedings of the local committee. Do you think that the local Society of American Foresters chapter might have this?

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\* See Appendix: Notes from Society of American Foresters Affairs, February and March, 1936.



Munger: I'm sure I don't have it. I didn't retain anything. It would be among Greeley's papers probably, and it may have been considered so confidential that it was destroyed and not available for release with the rest of his papers.

Fry: This was not made available to the press at the time?

Munger: I think not; it was handled as quietly as possible, here at least.

Fry: Do you remember whether there was an important question involved here of what role the S. A. F. should play as a matter of policy in cases where the state forester's job was threatened by political changes in the state?

Munger: Well, I think it was considered that this involved a matter of principle on what was professional ethics. In that case, it was more than simply the involvement of Black; it had probably a wholesome effect on the Society as warning people against using political activity to replace a professional appointee.

Fry: But as you remember, this committee didn't feel then that Black should lose his membership, but that he should be reprimanded.

Munger: That is my memory of it now. I'd be sorry to have to take an oath on the accuracy of it, but that's my thirty-year memory.

Fry: And Greeley was the chairman of this committee?

Munger: Yes.



Fry: Was its membership primarily made up of Northwestern people just in this chapter?

Munger: Yes. But I can't recall now specifically who the other members were.

Fry: Well, when you're digging through your old papers, do you think you might come up with some notes about this?

Munger: I don't believe so. It might have been mentioned in my diary, but they're back in New Haven. That's the only place that I probably would have had it recorded.

Fry: I'll check on this and see; it may be in there somewhere.

Do you remember the procedure that the committee used? I was just wondering if, for instance, you heard from Black directly in any way. Do you remember talking to him?

Munger: No. He didn't appear before the committee at all; I'm quite sure of that. I don't remember any particular reaction from him that the committee got in any way.

Fry: Do you remember anything from anyone in California? There were a couple of people, like Swift Berry for instance, who were active in this on Black's behalf. Do you remember anything of this?

Munger: No, nothing I'd be sure of.

Fry: Or E. T. Allen?

Munger: I don't remember just what his role was in it.





Fry: Do you remember where the initiation came from--the point of initiation for this committee to do this?

Munger: I think it was the national S. A. F.

Fry: Do you think that it was Dana or Chapman who suggested that this local committee go into this?

Munger: Quite possibly Chapman, who of course was the mainspring of the investigation. He was the watchdog of the Society's ethics, and quite active and quite militant.

Fry: Perhaps some of the papers relating to this committee can be found in the old S. A. F. files either locally or in Washington.

Munger: I doubt if it got into the local S. A. F. files that would be preserved, because the files were not well kept thirty years ago.

Fry: This just may be one of those chapters that's disappeared in history, and we'll never really know.



## INSURANCE STUDY

Fry: I wanted to ask you about Shepard's forest insurance study and if you had anything to contribute to that. I understand that the Northwest had already done some studies on state insurance.

Munger: In the 1930's, there was a strong tendency at the Experiment Stations to recognize the importance of research in the economics of insurance as well as the economics of land management, timber cutting, reforestation, and so on, so that the Station was, I think, rather in the lead in instituting such studies. I've already spoken of logging economics and forest taxation, and the next thing that was taken up was forest <sup>insurance</sup> ~~taxation~~, because the only major class of property in the country that couldn't be insured at that time was forests. We thought it would greatly stabilize and accelerate interest in permanent forest management if the forests which were so susceptible to fire could be insured.

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So this study<sup>\*</sup> was started which was largely a one man study. Harold B. Shepard, who had some training in that field as well as being a forester, was assigned to this

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\*cf. Harold B. Shepard, "The Forest Insurance Study...", a typed transcript of a written report submitted by Harold B. Shepard, included in R. Clifford Hall, "Forest Taxation Study," typed transcript of a tape-recorded interview conducted by Fern Ingersoll, University of California Bancroft Library Regional Oral History Office. (Berkeley, 1967)



Munger: region and spent some years in determining the hazards, classifying the hazards, and trying to rate them on an actuarial basis. He of course had the help of the men on the Forest Survey and those that were studying the causes of fires and methods of forest protection, but he put together a very fat and technically sound report, which was published in due course.

I think it had a respectful acceptance but has had practically no application up to the present time in actual insuring of forest properties. It was a good study, and it showed that forest properties could afford to pay a reasonable insurance fee. The one great scare was these terrific holocausts, such as the Tillamook Burn, which occurred about that time, and which I think scared out the insurance companies and perhaps delayed the application of insurance to forest properties. And also the very largest companies considered themselves self-insured, as many public bodies are; that is, they have such a wide distribution of their property that they couldn't expect a major loss because of not having all their eggs in one basket.

Fry: A little bit before that, there had been a forest insurance study by the Western Forestry and Conservation Association. Do you know what relationship that had to Shepard's study?

Munger: I don't think it had any. It was just, as I recall, exploring the subject somewhat. Insurance had been talked of for a



Munger: number of years and the interest in it was crystallized by  
the Forest Service employing Harold Shepard for this purpose.





## NEW DEAL PROGRAMS

National Industrial Recovery Act Lumber Code (Article Ten)

Fry: You just mentioned the minimum requirements study. Was this in relation to Article Ten of the Lumber Code?

Munger: No, the Minimum Requirements Study was made a decade before. The Forest Service thought that the National Industrial Recovery Act, which was passed as a Depression measure, made a possibility of getting some good forestry injected into woods practices, because the Recovery Act put some limitations on production. So it was the hope that those who were producing during the depression would be obliged to employ certain good forestry measures. There were committees of lumbermen and public officials for both the fir and pine regions appointed. They had many meetings to discuss what practices might be reasonable and enforceable. It was quite an educative process, because it was a case where foresters were telling the lumbermen what they thought should be done. There was naturally some resistance to being obligated to do more than they thought they could economically afford to do. Finally some practices were drawn up which the industry agreed to abide by.



Munger: There was a little book that McArdle and I at the Station had considerably to do with preparing, which was published by the West Coast Lumbermen's Association.\* The validity of the N.I.R.A. was questioned, and the entire act was declared unconstitutional, so all these forest practices that had been considered to be legally enforceable became optional. But the whole upshot was, I think, of high educational value to the industry as to what practices they might employ with benefit to the lands and probably to themselves. But these N.I.R.A. requirements were legally enforceable for a very short time.

Fry: Were the N.I.R.A. requirements what you went back to Washington to work on with Earle Clapp?

Munger: I think so, yes.

Fry: According to your diaries, you arrived in the Washington office just a few minutes after the Chief Forester, R. Y. Stewart, had unexpectedly died.

Munger: Yes. That was a tragic day. I was there on detail for several days and I imagine that's one of the matters we took up.

Fry: I could quote an entry from your diary here that on October 24th, 1933, the conference on Article Ten of the Lumber Code

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\*Published in November, 1934, it was titled "Handbook for Forest Practices for the West Coast Logging and Lumber Division."



Fry: assembled in the Department of Commerce and continued all day and was opened by Secretary Wallace. They were nearly all formal papers. This went on for a number of days like that. You noted that you were secretary of committee six, which was the salvage committee.

Munger: What was the date of that?

Fry: This was in October of 1933.

Munger: One of my purposes in that was to try to get the commission that was regulating lumber production to relax or expand their quota so as to permit the salvage of the Tillamook Burn timber. The Tillamook fire had taken place in August of '33, and there was a great hope that the timber could be salvaged, but the quota that was allowed in those depression years for the cut wouldn't permit it.

Fry: Were you successful in gaining this permission?

Munger: Yes. The regulations were relaxed so that salvage could go ahead and did go ahead in quite a large way on the Tillamook Burn. But of course that was all off after a very short period anyway, when the depression was over they relaxed their restrictions. I think we partly accomplished our purpose.

Fry: When you returned to the Pacific Northwest then, were you a part of the regional committees, which included industry representatives, to work out a lumber code for good timber management?



Munger: Yes, I was. The details of that have quite faded from my memory, the details of those meetings thirty years ago.

Fry: After N.I.R.A. was declared unconstitutional, did you take part in those activities as various committees met and drew up their own measures for a voluntary code, "Article Ten?"

Munger: Well, we did constant preaching and writing to explain the forest practices that were desirable, and they were gradually seeping into the consciousness of the industry. And economic conditions were changing so as to make possible better forestry, although the depression years made quite a setback to that.

Fry: Did the West Coast Lumbermen's Association's manual, which you and McArdle wrote, continue to be ~~used~~<sup>used</sup>?

Munger: I think so. It had quite a large acceptance.

Fry: The manual reports on the work of monthly meetings of this "woods practices committee." At the same time, did the Western Pine Association aid and contribute to these efforts too?

Munger: Some of the N.I.R.A. meetings were in the pine region, yes, and the forest practices for that region were discussed and drawn up, but I don't think they were ever published in such form as they were for the Douglas fir region.

Fry: Was David Mason active in that part of it?

Munger: Yes. I'm quite sure he was on the pine committee.

Fry: What about Mr. Wilson Compton's role in this?

Munger: He was head of the National Lumbermen Manufacturers'





Munger: Association at the time. I suppose he was giving national leadership.

Fry: How do you feel--just as general evaluation--about the impact of this committee on forest practices in general? Do you see this as a turning point?

Munger: Yes, I think it perhaps was the beginning of a general awakening to the necessity for better forest practices. It had been gradually coming with many individuals, but economic conditions had been such that there didn't seem to be any prospect of growing timber forever with the present taxes, low returns, and overproduction. But it was quite a help in educating people.

Fry: Do you think that it also contributed a lot to communication between the three groups--industrial forestry, government forestry, research?

Munger: Well, this committee activity made another point of contact between industry and researchers and government officials. There had always been a good relationship, but this promoted better mutual understanding, I think.

Fry: Could you mention any particular members of industry who were especially active in this, some perhaps who were at a point in their own economic development where they could take part more actively in promoting forestry on their land?

Munger: Shortly after this period but not directly an outcome of these N.I.R.A. committees, a number of people in the



Munger: industry took increasing interest in the work of the Experiment Station and its results. I think notably of Dave Weyerhauser, who spent a good many hours at the Station, even going into copying some of the records on growth and yield to increase and confirm his own knowledge of what we were finding out about the potentialities for better timber management. I forget just what date that was, but he was one of the forerunners of progress in that field.

Fry: I gather that they had already been doing some of their own work on this too at that time.

Munger: Oh yes.

Fry: So this fits in with the general stream of their development. Do any others stand out?

Munger: Of course our liaison with Crown Zellerbach was always quite close, and they had, through their chief forester and through Ed Stamm, a great interest in better forest management. They absorbed the results of our studies and were particularly impressed with the proven rapid growth of some of our permanent sample plots.

Emergency Work Programs: CCC, ERA, and Others

Fry: Would you like to give us an idea of how the advent of the Civilian Conservation Corps and the Emergency Relief



Fry: Administration and other government programs in the depression helped your research station?

Munger: Yes. In the early days of the CCC, there was a good deal of latitude in the type of men that could be employed with CCC funds. We employed several very competent timber cruisers who were out of work, and they made detailed examinations of the proposed experimental forests and other cruising jobs where technical men were required. After that, the CCC money was not available for that kind of employee--only for men that were at the camps. But we got an assignment of a side camp at several of the experimental forests, and the boys did some very creditable house building and trail and road construction for us on the experimental forests.

We also had a large number of the other emergency employees in the depression years, other than CCC. The N.I.E.A., ECA and other funds were made available to us, and I think at one time we had twenty-five or so in the office working as computers, draftsmen and field men on the Forest Survey. That was under the emergency money which went by various names. That was during the depression years, and that went up almost to the time of the war period in the beginning of the forties.

Fry: So that the highest level of employment that you were able to use under these programs were your map men and other



Fry: technical people?

Munger: Yes, also stenographers and computers and helpers in the field.

Then, during the war years, we had the assignment of some conscientious objectors who were made available to us. We were able to pick some of those who were particularly capable of doing the work that we had. They gave very loyal service for several years, partly on the experimental forests and partly as computers in the office. They were paid a mere pittance, which didn't really support them, but in spite of that they gave enthusiastic and intelligent service. We had six or eight during those two or three war years.

Fry: How did you get to select these men?

Munger: Well, there were in the Region one or more conscientious objector camps, one fairly near Portland. The superintendent at this camp saw the type of people that might be helpful to us and made them available. They were detached from the camp and lived in town or lived on the experimental forest, as the case might be.

Fry: Then you had some choice in their selection.

Munger: Yes, we got some very competent help that way.

Fry: Under CCC, were you able to have a pretty high degree of choice in hiring the CCC boys as the program progressed?

Munger: Only at the very start we were able to employ some experienced timber cruisers or foresters to do really technical





Munger: work, but later the regulations shut down on that, and we had available only the boys that were in the camps. But these conscientious objectors I speak of worked in the office and lived in town here.

Fry: I've gathered from other sources that as CCC progressed there was no political influence used in appointments of the supervisory personnel. Did you find this to be true?

Munger: There was an agreement that the CCC superintendents and foremen were to be selected from a list that was supplied by Congressmen. I forget the name of the list, but in this Region our Congressmen were exceedingly liberal in allowing us to name people that would be put on their list and be acceptable for appointment. So that insofar as this Region is concerned, in my experience, we were getting the kind of people that we wanted, although they were nominally coming from this political list. But it wasn't so in other Regions and was one of the very dark spots in the history of the CCC in some Regions.

Fry: As the unemployable list began to diminish, through the thirties, what sort of help was it that you had most difficulty in obtaining?

Munger: Well, the CCC help that we used were just the boys for manual labor, but from these other emergency funds, like N.I.R.A., C.W.A., and ECA, considerable latitude was allowed in selecting personnel, so that we were able to pick people



Munger: with drafting experience, and stenographers, and men with some forestry training.

Fry: This was a real shot in the arm then.

Munger: Yes. The Forest Survey here operated quite largely on these emergency funds for several years in the thirties.

Fry: About this time what sort of response were you getting in use of your results by industry? I gather that there was a big improvement over the really early years.

Munger: The effects of the depression had set back progress in forestry, I think. Then came the war years, which were quite upsetting, so that the real awakening of the industry to the possibilities of tree farming and sustained yield production didn't come until the mid-forties, when there was a very rapid rise in the value of stumpage, which changed the picture very much as to the economic possibilities of sustained yield forestry. But the principles that we had been preaching for years were gradually seeping in and gaining acceptance, although not in general application I might say until the mid-forties, with few notable exceptions.



## EVOLUTION OF THE DIRECTOR'S DUTIES

Fry: Most of the men in your research station came to forestry research, then, as a new field, and they themselves probably didn't bring any particular slant, because the field was new, and I guess most of their training had been rather general, hadn't it, or in a strict academic discipline like botany?

Munger: Yes. The Experiment Station personnel was built up quite largely by the Washington office, which picked out men from the Civil Service register or from their experience record that showed ability or taste for research, so that most of these men came to us at the instigation of the Washington office.

Fry: As a group, how would their training and preparation differ from the people who do this sort of thing now?

Munger: Well, most of them had post-graduate training, and as in the case of Walter Meyer, he came to us already a Ph.D., and McArdle soon acquired a Ph.D. Lodewick, who joined the station in forest products, had his Ph.D. before coming to us.

Fry: That doesn't sound too different from today.

Munger: No, except nowadays the Ph.D.'s are very much more common in forestry than they were in those days; then it was a novelty.



Fry: Do you think you had more than your share--a rather high proportion?

Munger: I think we did for those days. Yes, I think we had a very highly trained crew in the early days.

Fry: You didn't have anything to do with the initial selection of these men?

Munger: No. Of those that I mentioned, I think they nearly all were assigned to us by the Washington office, probably with some consultation or nominal approval by myself maybe. In those days there was some latitude between administration and research, I think more than there is nowadays, and men that could be shifted from research back to administration if that seemed to be their primary forte, or vice versa.

Fry: Then some of these men came to you from administration, you mean?

Munger: Yes.

Fry: So you didn't get locked in one or the other as easily as you do today, is that what you mean?

Munger: No, not in those days.

Fry: There was more switching back and forth?

Munger: Yes.

Fry: Was there a bothersome move to centralize a lot of the services? Leo Isaac told me about the Research Station library that was ordered to be put into the Regional Office in Portland, which was very inconvenient for the people working





Fry: in the Experiment Station. Then from Portland it was put clear down in San Francisco, and you had to write by mail for the books you wanted. I wondered if you found that this was typical of a certain period in the U.S. Forest Service, when there was a move to centralize such services.

Munger: Well, [puzzled] in Earle Clapp's administration as Chief of Forest Research [twenties and thirties] he wanted a rather distinct line between the administration and the experiment stations. He wanted each to be integral units; he wanted to keep separate the functions of research and the functions of administration.

Fry: Do you think then, in reference to such things as libraries, he would have wanted the libraries to stay in the research stations?

Munger: Well, when we were just a little station and the Regional Office was quite large, it was natural that the library should be maintained in the Regional Office and not be duplicated at the Experiment Station. Of course we had our own reference books. Now I think the library is in the Experiment Station.

Fry: You're not sure then at what period it was sent down to San Francisco?

Munger: No. That was a very short period, I think.

Fry: Could you give us a picture of your own method of operating, your activities, maybe for instance what you actually did



Fry: in a day in the research station?

Munger: In the early days?

Fry: In the early days, and perhaps you could contrast that with the later days.

Munger: When we were such a small organization, the administrative responsibility was quite slight. So I, as director, was engaged in active research much of the time. I was in the field with the others doing the actual field examinations and measurements and did a great deal of the writing of the incidental progress reports and major writing, and the editing of the reports of others for publication, which was quite important. So in the early days the director could be a real researcher.

Latterly, the administrative jobs, the necessity for public appearances and attending meetings and going back to Washington for conferences, and red tape, you might say, took up more and more of the director's time and kept me away from the actual field work and on-the-ground studies, which I enjoyed particularly.

Fry: In the early days, when you could participate so much in the actual research, how did you handle these different types of activities in your office? Did you do your writing in your office?

Munger: I did quite a lot in the evenings at home in those days. But it was an alternation--the field work was often only a



Munger: part of a week or so, enabling one to keep in touch with what was going on in the office in the interim, especially in the times when we had a very efficient chief clerk and office manager, Miss June Wertz. When so much of the work was concentrated at Wind River, I often went up there a couple of times a month and had a day or so there working with the men on their projects and keeping in touch that way.

Fry: When you went to Wind River, did you have to take a lot of notes there which you brought back to your own headquarters to keep a running record?

Munger: Well, the project leader was the one who did that. My capacity was supervisory and as a participant rather than a taking over of the job.

Fry: In other words, they turned in regular reports to you?

Munger: Well, it might not be until the next winter that their work was worked up. Most of the summers were spent in those days in acquisition of data in the field, and then the winters in working it up. The working up of data and writing it up really takes more time than the field work in many kinds of projects.

Fry: So you needed more winters than summers. [Laughter]

Munger: Yes.

Fry: How did you keep up with your writing and working up of the data then?



Munger: We did pretty well. That was one of the things I emphasized a good deal and tried to instill the idea in the others that research for itself was no good. It was only good if it was available for consumption by others, so that we tried to put a good deal of emphasis on getting out our material in various forms. The associations were quite willing to have progress reports given, so that at the Logging Congress and the Western Forestry and Conservation Association meetings we gave the results of our studies in popular form. We also got out a set of very informal publications called "Forest Research Notes," which digested in simplified form what we were doing. The two local lumber trade journals were glad to print whatever we sent them.

Fry: I was just trying to get an idea of the way you managed to handle a diversity of tasks and work in your research and your administration duties. I think this takes a particular kind of talent and was wondering how you did it.

Munger: Well, I liked to keep closely in touch with what everybody was doing, and some people thought that I was too inquisitive about what everybody was doing; but in the early days that was the kind of administration that we needed when we were a small family and working closely together. I watched the nuts and the bolts, as somebody expressed it, so I think the organization ran rather effectively and smoothly. But I know I spent much more time in attention to details, like field





Munger: details, good "housekeeping" on the Experimental Forests, and the expenditure of money, than some of the other directors did.

Fry: Later on, did you notice that you had an increase in the flow of paper work and things like this?

Munger: Yes. Following Parkinson's Law, it multiplied more and more, and it became less possible for the director to really keep his fingers on the field or be a real outdoor researcher. In the latter years, we went into so many other fields--the Forest Survey, forest insurance, forest taxation, products, range research--that spread my time much thinner than it had been heretofore, when we were largely engaged in silvicultural and forest protection research.

Fry: In this business of keeping up outside contacts, was some of this to groups through which you hoped you could disseminate information of results found in the Research Station?

Munger: Well, we had an Advisory Council--which met from one to three times a year. Then there were other meetings and conferences of one kind or another, and lectures at forest schools, that took time.

Fry: What was the make-up of this Council?

Munger: It had a representative of each of the three forest schools in the Region, the state foresters, a number of representative lumbermen of both Washington and Oregon, and a forester from the B.C. Forest Service. The chairman for a number of years was C. S. Chapman of the Weyerhaeuser Timber Company.



Fry: Did you feel that this did help in disseminating your research information?

Munger: Yes. It was not just a rubber-stamp group, but they discussed ordinarily our proposed program and advised as to the most important things that we should undertake. They were an avenue for disseminating the information, because at each of the meetings we had the project leader usually explain what was going on in his field. That was quite effective, having them take back to their people what was going on in forest research, which was then a sort of closed book to most people.

Fry: In working with this advisory group, did you find yourself sometimes in a dilemma in wanting to pursue more pure research on the one hand, which might not have immediate practical application, but also wanting to make your station a vital center of information which was needed by the lumber industry and the timber owners at that time?

Munger: I think that the Advisory Council's feeling, as well as my own, was to go for those projects that had immediate practical application, both on private lands and on national forests. I think there was unanimity on programming along that line.

Fry: Did this help in allowing you to use private lands sometimes in your projects?

Munger: Yes, a great deal of our work was on private lands.

Fry: And this was just through your own arrangement with these men, right?



Munger: Yes. Much of the sample plot studies were on private lands, probably much more than on national forest lands.

Fry: Was this typical of research stations?

Munger: I don't really know. I rather presume it was. Partly here we had in private ownership great acreages of cutover land of all shapes and conditions and ages to study, and it was in the most productive part of the Region, at the lower altitudes, so it offered the best opportunities for studies of such things as natural regeneration, seed disseminations, and so on.

Fry: Did you feel that you always had co-operation in using these lands?

Munger: Yes. We had no trouble in that regard.



## CONTRIBUTIONS OF THE STATION: COMMENTS

Fry: We've talked about the major contributions of these other members of your staff. What do you see now as your major contribution?

Munger: My major contribution?

Fry: Yes. Do you have any feelings about any one particular thing that you think contributed more than anything else, or do you feel that the research in general that emanated from the Experiment Station is your monument for posterity?

Munger: Well, it's pretty hard to pin it down, but I think that in a very broad way what we did was build a foundation for the silviculture of Douglas fir and for the silviculture of ponderosa pine against a mass of prejudices and misinformation. Then of course later the contribution to the Forest Survey was very great to a basic understanding of the economics of forestry.

Fry: I don't think we have talked about what changes were made in the body of conventional knowledge about Douglas fir silviculture--all of the misapprehensions that had grown up. Could you give some examples of preconceived ideas that you had to work against?

Munger: Well, in certain circles, particularly in the lumber industry,





Munger: there was a feeling that Douglas fir was just bound to come back regardless of what you did to the ground in the way of providing seed trees or disposal of the slash. They thought it was a self-perpetuating type that would stand all kinds of abuse, which wasn't true.

Then for a while there was an over-emphasis on the idea of seed being stored in the ground for several years and coming up even when there was no living seed supply in sight. That idea had to be dispelled by more thorough research.

Fry: Hadn't there been a paper written on that idea?

Munger: Yes, quite a little...

Fry: ...based on seedlings appearing seven or eight years after a burn...

Munger: Yes. J. V. Hofmann had written a bulletin on the subject.

Then in the thirties with the advent of tractor logging, an interest developed in selective logging in Douglas fir, and that became a very controversial issue, in which the Experiment Station found it necessary to do a good deal of work to appraise the pros and cons of this so-called selective cutting in Douglas fir.

Fry: Was there anything else that you had especially to combat, misconceptions that occurred now and then?

Munger: Well, of course there was the apathy of the industry that we were preaching against for years, and our preachments gradually sunk in. With a great change in economics the



Munger: industry changed radically in its appreciation of the subject--the big companies earlier, but everybody now practically.

Fry: It became feasible to practice more intelligent forestry.

Munger: Yes.

Fry: But in the twenties and thirties I guess you had a pretty rough time, didn't you?

Munger: Yes. Research was in rather low regard, and they thought it was a nice theory--all right for Europe--but our forests here were inexhaustible and we needn't worry, and they'd reproduce themselves anyway; we didn't need to bother.

Fry: Can you name anybody in industry who you feel was particularly progressive in the early days?

Munger: Yes. I think that the relationship was very friendly with many lumbermen, even those who were not prepared to accept our recommendations. I think those that were especially favorable were R. D. Merrill of Merrill Ring and Company; Dave Weyerhaeuser was very progressive (C. Davis Weyerhaeuser, that is), and E. P. Stamm of Crown Zellerbach. The Watzcks, Paul Neils and Tom Murray of the West Fork Timber Company I think you'd have to list. Murray was a great proponent of selective logging however; but he was a progressive lumberman, a pioneer in tractor logging. In his particular case, it was quite workable. There are many others in the early days who don't come to mind right now that were progressive.



Fry: Did Murray, and others like him who really did something, pick up their information from others, since they had not acquired any technical background themselves in formal training?

Munger: Yes. But they were friendly and sympathetic and wanted to encourage their companies to do what they could. There are probably a good many others I should name, but I can't think now of any other outstanding ones in this early period.

You might add to those names Frank H. Lamb. He's not a forester, but he knew more than most foresters.

Fry: Who was he with?

Munger: He was a Grays Harbor logging machinery man, and he's written a very readable book, The Story and the Economic, Social, and Cultural Contributions of the Evergreen Trees and Forests of the World, and the short title is Sagas of the Evergreens. He's a good writer. He was a good friend of foresters way back. He lived in Hoquiem, Washington. He should be mentioned as one of the progressive thinkers and workers. He wrote a very clever parody regarding the unwisdom of burning slashings in the coastal forests, that he delivered at a Logging Congress, on "To burn or not to burn, that is the question. Whether to endure the outrageous damage of forest fires or..." and so on--a clever parody on Hamlet.

Fry: Was he primarily a writer, or did he work as a lumberman?

Munger: He was an industrialist.



Fry: In other words, he owned a machinery company?

Munger: Yes, I think so, logging machinery as I recall. This goes quite a way back.

Fry: Is he still alive?

Munger: No, I don't believe so.

Fry: Let me get the publication date on his book--1938.

Munger: I happened to have that book out. I was reading something in it the other day, and I was impressed again with how well informed he was as a dendrologist.

Fry: That's very unusual.

Munger: Yes, he was an unusual man.

Fry: Is there anything else then that was a special problem besides these misconceptions and the apathy of industry?

Munger: Well, no, I can't think of anything. Of course there was the perennial problem of slash disposal, on which the Station published bulletins both for the Douglas fir region and for the pine region in which there is a good deal of difference of opinion--to burn or not to burn. That was a highly controversial subject in which the Experiment Station, with sound scientific data, made its pronouncements in these bulletins for each type of forest, pronouncements which have more or less been the guideposts for practice on the national forests anyway.

Fry: Did this slash disposal question roll on for years?

Munger: It still is on. It's a perennial problem.





- Fry: Is there a difference between what you recommended in the pine region and what you recommended in the fir region?
- Munger: Oh yes, quite a good deal.
- Fry: Did you have more opposition in the pine or fir regions?
- Munger: Well, in fir I would say, because we recommended less burning in fir than they were doing, and people had about concluded to do less burning in pine anyway than they used to do. But our work, no doubt, had an effect on the thinking and practice of the administrative men. We like to think so anyway.
- Fry: At least you've seen a difference in timber practices come about. What was the viewpoint of the Regional Office on this? Did it match yours?
- Munger: They went along with us pretty well, yes.
- Fry: So at least on this you had a united front?
- Munger: Yes.
- Fry: Is there anything else?
- Munger: We covered the taxation study and insurance study, and the Forest Survey?
- Fry: Yes, we did. You may want to put in more details. I guess we have just one or two anecdotes through the whole thing.
- Munger: Yes. Well, I'm not good at thinking of those. I'm afraid this is terribly flat.
- Fry: Material that seems flat to you doesn't seem flat to other people at all, especially when they're going through it for



Fry: information. The colorful yarns and things are woven in for a different purpose. I think if researchers use these interviews in an attempt to reconstruct forest policy and forest practices, they want hard information; the funny little anecdotes are amusing, but they can't really use that. What they're really after is...

Munger: ...is history--yes.

Fry: Yes, that's right.



PART III

RETURN TO RESEARCH

1938-1946



## STUDIES UNDERTAKEN

Fry: You stepped down from the directorship in 1937 or 1938, is that right?

Munger: Yes.

Fry: But you were still with the station all during World War II?

Munger: Yes. In 1937 the doctor put me on a shelf, where I stayed several months, and in that period I decided that I was tired of doing the administrative work that meant so many meetings, so much travel and so much red tape, so I asked to be relieved of the directorship. They very generously gave me, with practically no reduction in salary, the position of Chief of the Division of Forest Management in the Experiment Station. Horace J. Andrews, who had been in charge of the Forest Survey, took my place for a few months as director. Then Steven Wyckoff in 1938 was appointed director. In that new position, I had a chance to do what was my real love--real research--with a minimum of administrative and contact work. However, as soon as the war broke out a couple of years later, we had a period of very slim allotments.

Fry: Before we get into that, give us an idea of the research





Fry: that you participated in before World War II got underway and the Station had its cutback. I have listed here a number of your independent studies: the sword fern, the knot study, a rodent study, a study in alder, a Lady Island cottonwood plantation, a planting test using Dowax-treated Douglas fir seed, blister rust studies, and a precipitation study. Was all of this under you?

Munger: Yes, most of those you mentioned. We had quite a program going, and of course many of the plots that had been put in years before were becoming ripe to give results. I took part in the re-examinations of these plots, both methods of cutting and growth plots, plantations and so on, and wrote up quite a lot of them. It was rather a pleasant period of reaping the fruits of our early work, some of it done--in the case of the Douglas fir heredity study--thirty years before.

Fry: Would you comment on this 1938 rodent study?

Munger: Well, at that time we had assigned to the Station someone from the Biological Survey who was making a special study of the relation of rodents to regeneration, seeing about their seed consumption, their population and the methods of deterring them from eating seed and for poisoning them, but that was largely under the auspices of the Biological Survey but affiliated with us in the Experiment Station.

Fry: Was it partly under your directorship?

Munger: No. It was really just a co-operative relation. Al Moore



Munger: of the Biological Survey was quartered with us and shared our office for a while and advised us what he wanted done, but he was directly under the Biological Survey.

Fry: There was another study called the "Live Limb Freeing Experiment."

Munger: Yes. As part of our study of thinning and pruning, we wanted to decide how much of the live crown of a tree could be taken off without affecting its growth. Both in pine and fir some experiments were put in cutting off a quarter of the live crown, a half and three-quarters of the live crown, to see what effect it had on the growth of the tree. That study was continued for a few years with examining these trees that were so treated.

In that connection, I got interested in trying to find a means of pruning these trees without making scars on the wood which would degrade the lumber and cause pitch pockets and so on. So I, with the help of the Forest Service engineer, Ted Flynn, developed what was called the multiple spur tree climber. So instead of using what the ordinary telegraph pole climber uses with one long spike, this had small spikes that wouldn't penetrate the wood but would just penetrate the bark. That was patented and used some by the CCC boys with some success. The only trouble is there hasn't been enough high pruning to feel the need for it, so, as far as I know, they have not been used very much. Instead, the pruning



Munger: that has been done by the Forest Service has been done by long poles with a little saw on the end of it.

Fry: Was this engineer, with whom you worked, on the Forest Service staff?

Munger: Yes. Ted Flynn was in charge of an engineering laboratory that the Forest Service then maintained, in which they were devising and building specialized equipment for one purpose and another. This was one of the minor things that they helped design and build.

Fry: What were some of the other things that came out of that laboratory?

Munger: Well, one of them was a type of bulldozer in which the Forest Service took a conspicuous part in developing--the bulldozer blade on tractors.

Fry: Do you know what changes they made in this blade? Was it in its position or its curvature?

Munger: I don't remember that.

Fry: Do you remember any other equipment they developed?

Munger: I can't think offhand what else they did do, but they carried on for several years in developing tools that are very useful in Forest Service national forest administration.

Fry: Did this have any direct connection with the Experiment Station?

Munger: No, it was entirely under the Regional Forester, as an equipment laboratory.



## REGULATION OF INDUSTRY

Fry: In the late thirties and early forties there was a great deal of talk about possible federal regulation of cutting on private timberlands. Were you able to see how this affected general practices on the part of industry?

Munger: Earle Clapp, who was chief of research for the Forest Service, shared the feeling with Gifford Pinchot, who had long been out of the Forest Service, that the only way to bring about continuous production on private forest lands was by federal law. Various means of attaining that were proposed. That doctrine was advanced very vigorously by Earle Clapp, but it was as vigorously opposed by many foresters within and without the Forest Service, as well as by industry. Colonel Greeley rather took the leadership in advocating co-operative arrangements, and that was the principle of the Clark-McNary Act, where the federal government would do things to subsidize fire protection, encourage planting and so on.

So there was a heavy rift in the Forest Service itself, that is, between those that believed in compulsory forestry, regulating the industry by law, and those that believed in bringing it about by co-operative and educational effort.





Munger: It created rather sharp feeling in this Region, when the matter came to a head. Both the Regional Forester, who was then Horace Andrews, and myself, were not sympathetic with the idea of compulsory regulation. The Society of American Foresters was sharply split, of course, on the matter. It was not only between Forest Service and industry, but it was also within the Forest Service that there was great variance of judgment. Since then, the matter has subsided, and great progress is being made under the idea of co-operation and some subsidies from the federal government.

Fry: What about regulation by the states themselves? Was this even a seriously considered issue?

Munger: At the time that this controversy was raging, some of the states, notably both Oregon and Washington, passed legislation requiring that some provision be made for reforestation, leaving seed trees in the case of the Douglas fir region, or in lieu of that making a deposit to guarantee the artificial reforestation of an area if natural regeneration didn't succeed, or, in the pine region, leaving a certain percentage of the stand intact. That has been rather effective, I think, in both states in promoting continuous production.

Fry: How were these criteria in the Oregon Forest Conservation Act arrived at for this type of production control? Were you on any of the committees which tried to work up these criteria of cutting?



Munger: Yes. They were talked over at meetings and, as usually happens, what was arrived at was sort of a compromise measure with minimum outlay of capital or sacrifice, yet that would accomplish the purpose after a fashion. I think that's about the size of it.

Fry: Did you have a definite role in this?

Munger: I think not. No, not in drafting the legislation, because we didn't meddle in state legislation.

Fry: What about after the legislation was passed? Was this when some of the finer points of the cutting criteria had to be worked out?

Munger: Well, in deciding how much timber should be left, they of course benefited by our studies as to the distance that seed trees would distribute their seed and what percentage of the stand ought to be left in order to assure a second crop. So I think that those who finally agitated the legislation did benefit by the results of Experiment Station studies.

Fry: Yes, they did have to use your information there. I didn't mean to get us too far off of this federal regulations story. Nationally, who were some of the foresters within the Forest Service who were anti-regulation people?

Munger: I'm not sure enough to say. I remember in this Region it was Andrews and I who didn't believe that that was the answer.

Fry: This must have put you in kind of an awkward spot.



Munger: It did, yes. We were in the doghouse for a while.

Fry: Though not director of the Station at this time, you still had a great deal of status in this area, along with Mr. Andrews. You didn't have to take any action for or against, did you?

Munger: No, axcept that Mr. Clapp wanted to have the endorsement of the staff of all the experiment stations in this policy to pomote it locally among their correspondents and clientele, and that's what we didn't want to do here.



ATTEMPTS TO TRANSFER THE FOREST SERVICE TO DEPARTMENT  
OF INTERIOR

Fry: What about the other controversy, the transfer of the Forest Service from the Department of Agriculture to Harold Ickes' Department of Interior?

Munger: Well, all I know is what I read in the papers, and the question has been quiescent for a number of years but perhaps is not settled yet to everybody's satisfaction.

Fry: Yes, it's still rolling around. I wondered, for instance, if you remember having any preferences for the advancement of research and its chances for advancement under the Department of Agriculture or the Department of Interior in the thirties.

Munger: No, I don't recall that that particularly came up, except, of course, one of the arguments was that forests were a crop of the land and as a crop they belonged in the Agricultural Department and not in a department which was then engaged largely in the disposal of the public lands and was not engaged in the matter of land management up to that time.

Fry: Here again the Society of American Foresters came in.

Munger: I think the SAF was always strong for keeping it in the Department of Agriculture.





Fry: There wasn't the big split in this question that there was during the federal regulations controversy then?

Munger: No.

Fry: Did your work in the Chamber of Commerce during this time touch on this transfer controversy? I think the Chamber of Commerce in California was rather active in this, or some of their men were.

Munger: I don't recall that this Portland Forestry Committee was active or took part in that, but it may have.



## WORLD WAR II

Fry: As you moved into the war years, what became the major concerns in research as you had to cut back on your progress?

Munger: Our appropriation was very drastically reduced for current work. For example, Isaac and I each had an expense allowance of one hundred dollars for the year. We were given certain special funds for carrying on projects that might help the war effort. Various people at the Station devoted almost all their time to those war projects.

Personally, the bulk of my time was trying to keep up the examination and record of these permanent plots where we didn't want the record to lapse. But the Station undertook all sorts of studies, from those that took just a day or two to several weeks, largely keeping track of the lumber production and the supplies of forest products that were of strategic value, all the way from the availability of machinery to the stocks of lumber.

Fry: At first I believe there was also pressure for more Sitka spruce, just as there had been in World War I.

Munger: Yes. We inventoried the available spruce and the production of spruce and I think of Port Orford cedar also, which was considered desirable for airplane construction. But about



Munger: that time the demand for spruce was not so insistent, because they were going more and more into metal construction.

Fry: Up to that time, was there really a shortage of Sitka spruce until they converted to aluminum?

Munger: Yes. The very high quality, such as would make wing beams, was scarce, and much of the very good had been combed out of the forest in World War I.

Fry: You hear a lot in the Pacific Northwest about fire hazards during the war, incendiaryism. Was there any step-up in research on more adequate fire protection?

Munger: Not in research, so far as I recall. Of course there was a problem with the shortage of personnel. The men that would have been available on the fire line, or smoke chasers, and lookouts were in short supply, so that that was a problem. I think that's when they began to have lady lookouts on some of the lookout points.

Fry: You must have worked rather closely then with these War Production Board people. Were you a part of that by any chance as a regional advisor?

Munger: No. The assignment of these studies came out from Washington largely at the request of the Army, which wanted to know this and that. They would send out to us to do the leg work, to supply the information to the war staff.

Fry: All through this you were able to keep up your own plot studies and so forth?



Munger: Well, in some cases plots that should have been examined every five years--we extended that to six or seven years, because we simply didn't have the personnel or the travel money to keep it up. But we lost very little by dint of making our dollars go as far as possible and our hours go as far as possible in keeping up the necessary current work on the plots. The experimental forests were neglected; in three cases they were staffed by Conscientious Objectors, who maintained the records there and kept up the buildings.

Fry: I suppose that roads and road maintenance also had to take a back seat.

Munger: Yes. Improvements of that kind had to be neglected.

Fry: Before you retired, did you see an upswing in this general grim situation?

Munger: Yes. Appropriations for the Experiment Station went up rapidly. Immediately after the war there was a rapid rise in the demand for lumber, and prices went up. There was increasing interest in permanent forest management, sustained yield forest management, which has been accelerating ever since until in this Region it is well nigh universal among the larger owners and operators.

Fry: The "tree farm" idea was given a big push around 1940 to 1941 by the organization of the tree farms as a certification agency and a public information agency. What did you notice from your vantage point as the major impetus in the





Fry: establishment of tree farms?

Munger: Well, I think it was the rise in stumpage values, which meant the increased assurance that there was going to be an increasing and constant demand for timber, coupled with the know-how to bring about reforestation, and coupled also with the fact that protection was getting more intensive and more successful. So there wasn't the fatalistic attitude that the timber had to be cut to keep it from burning down or the tax collector getting it that prevailed in the early days, and also the attitude that prevailed in the early days that the timber resources were inexhaustible, that there was enough forever in the Northwest. By the late thirties they were beginning to realize that the private timber at least was not inexhaustible.

Fry: Do you feel that the changes in the taxation structure were a major factor here, or would you downgrade that just a little?

Munger: I think they probably were a major factor, because it gave timberland owners some confidence that until the timber got to be of merchantable size, they would only pay a nominal amount. But still, the tax burden on old growth timber was rather oppressive and was one of the factors that hastened rapid logging.



## OUTSIDE ACTIVITIES

Fry: There are several outside organizations which I have listed. Would you look them over and give what you know of the contributions of those you worked with?

Western Forestry and Conservation Association

Munger: The Experiment Station had very pleasant relationships through the years with the Western Forestry and Conservation Association, often being on the programs at their annual meetings. A little before I retired, they set up a West Coast Forestry Procedures Committee, which was quite unique in that it was attempting to define some of these procedures and terms that were loosely used. We had a committee composed mostly of technical foresters in private employ and representatives of the forest school. We met at intervals from 1945 to 1950 and came out with recommendations as to various procedures that should be employed, and defined some of the terms that were at that time misused or used loosely. That resulted in informal project reports and finally a printed publication of the Western Forestry and Conservation



Munger: Association; and the committee was then discontinued.

Fry: Would this be a publication called "Forest Procedures?"

Munger: It was called "Recommended Forest Practices and Techniques" containing eleven reports of sub-committees, published in 1950.

Fry: Would you give an example of what sort of procedure was ambiguous from the standpoint of the academicians and the practical or technical men?

Munger: One of the things that took a good deal of consideration was determining the means of computing the allowable annual cut.

#### Chamber of Commerce, Portland

Fry: What about the Chamber of Commerce there? Do you remember having any connection with their special committee?

Munger: I sat for a number of years as the representative of the Forest Service on the Portland Chamber of Commerce Forestry Committee and later on the Recreational and Natural Resources Committee. The committee there had a good deal to do in helping shape forest policy recommendations, and that committee still continues in a similar function.

Fry: Where was this influence on policy felt?

Munger: Well, the national Chamber of Commerce--the U.S. Chamber of Commerce--had a Conservation Committee that was attempting



Munger: to guide policy of management, particularly of public lands, in a way that would be favorable to members of the Chamber of Commerce. The Portland Chamber had a part in considering those policies that went to the national, as I recall. I wouldn't say that I had any particular influence on that one way or another.

Fry: Can you think of any other organizations, perhaps one that I didn't include?

Munger: I think we've touched on most of these. I said that the Station was commonly invited to present papers at the meetings of the Pacific Logging Congress and the Western Forestry and Conservation Association, and of course it had its part in the local section of the Society of American Foresters.

West Coast Lumbermen's Association and William Greeley

Fry: It might be valuable to get an idea of the evolution of something like the Pacific Logging Congress. If they had a certain set of major concerns in the earlier days which gradually evolved into something else, this would be interesting to know.

Munger: Well, the lumber associations, including the Logging Congress, took an increasingly sympathetic attitude toward





Munger: the fruits of forest research and were increasingly helpful in putting them into effect.

Fry: Were they ahead of industry on this, or was this a reflection of industry?

Munger: It was a reflection of the major leaders in industry. However, the West Coast Lumbermen's Association was headed from 1928 by William B. Greeley, who was the ex- Chief Forester of the Forest Service. He was a leader in introducing his association to advanced methods and was most receptive and helpful in promoting the work of the Experiment Station, including the Forest Survey, and other projects, and he encouraged his members to do likewise.

Fry: Through Greeley's leadership and the fact that he had a sort of dual capacity--to relate to the Forest Service and to industry--did you feel that here was one of your most valuable links to industry and its needs?

Munger: Yes. He was so understanding and with such a background as Chief Forester that he was naturally very intelligently sympathetic with what we were doing, and he would do what he could to advance its application.

Fry: Do you have any specific stories to tell about how you and Greeley were able to work together on such things?

Munger: No, I don't think of anything particularly specific, except I know when we instituted the Forest Survey and were exploring the possibilities of using the cruises of private companies,



Munger: he was very co-operative in giving us the entre to companies to make that possible. His support naturally was helpful in making many of the industrial companies more willing to give us their cruises.

Fry: Did Greeley and his group enter into your work on taxation very much?

Munger: No.

Fry: Could you give a capsule version of how Greeley operated and what this man was like to work with, what he was like in a meeting, how he handled the more obstreperous members of his association?

Munger: Well, Greeley had an enviable method of working, in which he went at a problem--whether he was giving a talk or whether it was at a conference-- in a deliberate way, not voicing his own opinions, but making his ideas perfectly clear. Then, when a decision was reached, that was that, and he didn't wish to re-open the matter otherwise. He had an enviable faculty of doing his day's work and then dropping it from his mind and being quite relaxed in his home or elsewhere after his day's problems were solved. In that way I think he had prodigious capacity for work without worry. But it was a very troublous time the first years he was with the West Coast Lumbermen's Association, when the industry was so depressed and when a great many of the major operators in the region were not members of the Association. His job was to



Munger: try to bring them in, in which I think he was fairly successful.

Fry: I wonder how he got them to actually sign on. He must have had to make a great many speeches and a great many personal contacts.

Munger: Yes.

Fry: Do you think that his background as Chief of the Forest Service was a disadvantage to him during those first years as head of the organization?

Munger: He had such great personal ability and such acceptance for his wisdom and integrity that I don't think even those lumbermen that didn't like the Forest Service too well had any misgivings as to his loyalty to the industry nor concern about his showing any favoritism toward the Forest Service. He was an excellent liaison between the Forest Service and the industry.

Fry: I guess the backside of that coin is any feeling that Greeley might have had (or had reflected to him from the point of view of people in the Forest Service) that maybe he had deserted the ship. Was this even mentioned to you? I heard that Greeley was hurt because some of his pals in the Forest Service felt he shouldn't have gone to work for industry.

Munger: A small group of Forest Service foresters at that time were out of patience with the industry because they didn't do what the Forest Service recommended or were critical of Forest Service policies. Some of them, I think, did use the



Munger: expression that Greeley was deserting the ship, going over to industry; but that was quite unjust, and I think it was very local and very temporary.

Fry: He certainly finished his career with a brilliant record.

Munger: Yes--admired and loved by everybody.

Fry: I'm wondering about some of the other leaders outside particular industries. What about Dave Mason? Would you like to tell us about his contributions? Were you a pretty close friend of his here in Portland?

Munger: In later years, yes, not so much in the early years, but largely on a personal basis and not officially, although he always has been very friendly with the Forest Service and its research, and we were on committees together.

Fry: But this was not a particularly important link during the years you were developing the Station?

Munger: No.

Fry: What about Bill Hagenstein? Could you evaluate him?

Munger: I don't like to give offhand thumbnail sketches of people.

#### Forest Park Committee of Fifty

Fry: I'd like to go on to the Forest Park Committee of Fifty, of which you were chairman from 1947 to 1960. There is a very large acreage of forest right here at the edge of Portland,





Fry: which I was told the other day is the result of some of your efforts. This does belong to the city of Portland as a forest park now.

Munger: Well, a little before I retired in 1946, a City Club committee made a study of the hillside north of Portland, a considerable part of which was in city or county ownership, and recommended that it be given park status. A group was gotten together as a result of that City Club report to try to implement it.

Fry: Was the City Club report part of your activity too?

Munger: Indirectly. A group of people got together to try to carry out a program of setting up this area as a city park. I happened to be in the East at the time, so they made me chairman, to organize a working committee. I organized the "Committee of Fifty," which embraced representatives of all sorts of agencies that might be interested in a city forest park. The area was outlined by the City Planning Commission to embrace over six thousand acres, of which one thousand acres or so was county land, one thousand acres or so was city land, and the rest privately owned.

That "Committee of Fifty" met quite often, and it got action in a number of ways. The county was persuaded to transfer its land to the city, and that required an act of the legislature. A program of acquiring tax delinquent land was initiated; the area was put under the administration of



Munger: the City Park Bureau, where it has since been. It is an area seven miles long and over a mile wide, stretching from near the Willamette River to the skyline; it's pretty rough forest land, most of it having been very much abused by logging and fire. But by good protection it's coming back to a beautiful forest. It's now been dissected by quite a number of trails and a road or two.

Fry: What about the acquisition of privately owned land?

Munger: I continued as chairman of that committee for about fourteen years, and the committee still has an annual meeting and usually a field trip over the area to see new developments. The acquisition lately has progressed rather slowly, because very little of the land is going tax delinquent, but the city has been able to buy a few pieces of land and still is doing that.

Fry: The acquisition of privately owned land was based on voluntary acquisition, I guess.

Munger: Well, in one case we condemned 120 acres, I think, but the city has had little money for acquisition each year.

Fry: So actually your acquisition is still going on.

Munger: Yes, to consolidate the city ownership.

Fry: Did you go to the Legislature to help push through the legislation that was necessary for the establishment of the forest park?

Munger: No, that was handled by a member of our committee.

Fry: Who handled that?



Munger: Allen Smith, an attorney here who was interested and was on the original City Club committee. He put that through.

#### Forest Museum

Fry: There was another activity of yours which I just happen to know about, the Forest Museum Building and some of the old machinery and things which were inside it--the one that burned down. Could you tell us about this struggle?

Munger: For the Lewis and Clark Exposition in 1905, a log cabin was built, like which there was none other in the world. It was of solid logs of Douglas fir and inside had fifty-two columns, which were fifty-four feet tall and from four to five and a half feet in diameter. It was a very impressive building--cathedral-like in its interior--and it was on city park property. All the other Lewis and Clark Exposition buildings were long ago taken down, but it stood there and was open to the public and had some dust-catching exhibits, holdovers from the 1905 Fair.

This committee of the Chamber of Commerce, about 1952 I think, thought that something ought to be done to rejuvenate the building, and it was cleaned out of the undesirable exhibits and the best ones kept, and a systematic series of educational exhibits were installed. About that time the mayor appointed



Munger: a committee, which was called the "Gallery of Trees Committee," and I was elected chairman of that committee, and I've still stuck to it ever since. It had frequent meetings for several years, until in August, 1964, the building was burnt down.

Meanwhile, the exhibits had been very greatly expanded, It was my particular interest to assemble interesting things, like out-of-date donkey engines, sets of high wheels, types of tools that were used in the past, one of the earliest sawmills built in the Northwest that had been stored for many years and was reassembled and erected there, a pioneer shay locomotive with a load of logs. It all went up in smoke in this unfortunate fire of August, 1964. Only a few of these outdoor exhibits were saved.

Fry: How did you go about getting the material for these exhibits? Were these things that you just ran across in your ordinary activities, or did you go out and search them out?

Munger: We didn't have any money, so we were entirely dependent upon the generosity of public-spirited people. I, through correspondence, searched from British Columbia to California to get a Dolbeer donkey engine and finally found one in Portland; there are only two or three of them in existence, and that one was saved from the fire. That was the first type of donkey engine used in logging in the West.

Likewise, we heard of a four-wheel logging truck, which





Munger: was donated to us. It had a long and interesting history, and a set of high wheels that were used in logging in the pine region. Georgia Pacific donated a large donkey engine; Weyerhaeuser donated some disconnected logging trucks; and Harold Miller donated the shay locomotive; Crown Zellerbach donated one of the first grindstones used in a pulp mill in the Northwest and also donated a cross-section of the giant Douglas fir, the largest known to exist until it blew down. Most all of that went up in smoke. But a new building is being projected which will not be a log cabin but will have some of the same type of exhibits, we hope.

Fry: You're on that committee too, aren't you?

Munger: Yes.

Fry: You might bring us up to date and tell us how you're coming. Are you pursuing subscriptions to finance this?

Munger: A committee was appointed by the mayor right after the fire, and that has been somewhat reorganized into a better working group. A prominent retired pulp mill executive, Charles Fox, has been appointed president of this corporation that's been formed. It's called Western Forestry Center. Then they shortly thereafter employed an executive secretary, John Forrest, and that is going to be adjoining the Oregon Museum of Science and Industry and the Arboretum and the Zoo on the West Hills. But it would be public land, and the City Council hasn't given the final approval to its location.



Munger: An architect has been employed and is considering plans. As soon as there are some preliminary sketches of the building, a brochure will be prepared and the solicitation will start, hoping that largely the industry in the four states will contribute toward it. It will not be just a Portland project, but it will be a region-wide project to feature the forest products, their care and manufacture, and their uses.

Fry: In the plans for this building, what sort of guidelines did the committee give the architect? What particular things did you want?

Munger: Well, we've been very much impressed by a forestry museum in Sweden, of which we have brochures. It's at <sup>Gävli</sup>~~Gävli~~, near Stockholm, and was built by the industry. It has in it a great deal of the kind of things that we hope to have, which will be the educational exhibits showing the growth and management of forests and then their utilization, and the various types of forest products. The building will be of wood, using the most modern techniques of wood utilization; it will display the uses of wood.

Fry: Are there any other civic accomplishments that I've left out? You seem to have been a busy man outside the Experiment Station.



### Arboretum

Munger: Well, I take some satisfaction in having had a part with Sinclair Wilson, before he was with the Experiment Station, in getting the city to set up an arboretum, which has since been maintained on one hundred acres or so on the West Hills, where there is now a very notable collection of mostly conifers. I've kept in rather intimate touch with that ever since it was first set up.

Fry: When was this?

Munger: '27.

Fry: This one hundred acres originally belonged to the county?

Munger: It was part of the County Poor Farm that was turned over to the city, so it was city property and on the same tract as the Zoo, which adjoins it.

### Roadside Protection

Fry: Do you want to tell something about roadside protection efforts, one of your hobbies?

Munger: Well, many years ago, Mrs. Jesse M. Honeyman, who was then well on in years but was a vigorous crusader, helped organize the Oregon Roadside Council, which had a small membership and a board of governors. I was asked, as the representative of the Forest Service, to sit with them, and there began my



Munger: interest in roadside protection, a subject that very much needed friends. Ever since then I have been active on the Oregon Roadside Council and for some years had some part in trying to get legislation through the Oregon legislature. The Roadside Council is still active, as are other councils over the country, trying to control billboards.

Fry: Has this been its major concern over the years?

Munger: Yes, the major concern is that, but it's also been interested in the promotion of parks and the promotion of the recreational use of forests and conservation in general. The battle is still on and not won yet.

Fry: Have you found that the support by Mrs. Johnson in the White House has helped these local organizations any?

Munger: I don't want to get into that. No.

Fry: I gather this hasn't been a big boon to you then.

Munger: No.

Fry: Have you been able to limit billboards on any roads and highways around here?

Munger: Oregon has probably made as much progress as any other state except Washington in direct regulation. Oregon has a unique law which was passed in 1961. It creates a Scenic Area Board that has the power to declare a certain road a "scenic area," along which no new billboards can be erected, and existing ones must be taken down in seven years, with certain exceptions--commercial areas and on-premise signs are allowed.





Munger: I was initially appointed by the Governor to that Scenic Area Board and served for four years. Up to the present time, over a thousand miles have been set up as scenic areas in Oregon.

In that same legislature, a bill was passed which gives, I would say, lukewarm protection from advertising on the federal interstate system and to a lesser degree on other throughways. The Roadside Council was also instrumental in freeing the Portland arteries and the bridge approaches from billboard advertising--but it acted a little too late in some cases, for existing billboards could not be taken down.

Fry: Was there organized opposition to these efforts?

Munger: Yes. One step in this crusade was that a Highway Protection Committee was created to put over an initiative petition in Oregon to rather drastically control billboards on all primary highways, and I worked very hard on that in '59 and '60. We raised and spent about \$11,000, I think, in our campaign, and as near as we can find out the industry spent \$200,000 to defeat it, and they were successful in so doing. So organized, heavily financed opposition to roadside protection is still rampant over the country and was particularly so at the White House when this recent so-called Highway Beautification Bill was passed.

Fry: You've had a lot of experience with that.



Munger: Yes. It's been an interesting battle of ideologies--the same thing that's taking place in all of the conservation efforts, whether it be conservation of scenery, conservation of wildlife, or conservation of forests; it's the aesthetic or the cultural versus the "economic."

Fry: Has your work in the Experiment Station really kept you out of active political activity or identification with any political party?

Munger: Well, as long as you're a federal employee, you're not supposed to engage in political activity, but my own preferences have kept me from indulging in any partisan politics or partisanship or political activity other than in a small way, going to the legislature on several occasions and, you might call it, lobbying for the roadside protection legislation--in which I was very much of a novice, an amateur.

Fry: By "by your own preferences," do you mean that you weren't able to line up your interests with the party line of either party?

Munger: Well, I simply haven't cared particularly to be a partisan politician, to engage in partisan political activity, but I would take part in these causes where legislation is necessary.

Fry: I think we've had a very good series of interviews. Thank you for going through such an intensive series of questions with us. This will be a good addition to those diaries.

Munger: Well, that's all--yes.



APPENDIX I  
CORRESPONDENCE REGARDING INTERVIEW



REGIONAL ORAL HISTORY OFFICE

ROOM 486

August 25, 1967

Dear Mr. Mungler:

In our last interview we discussed the Rex Black case briefly, and it developed that your part in that apparently concerned the deliberations of the initial committee of the Northwest Section of S.A.F., which in turn made recommendations to the national councillors.

At the time, there was little information available on this while I had the tape recorder on; I don't believe that I had shown you the notes on the case which I now attach to this letter. Perhaps these few sketchy facts can pulsate a while in that very active brain of yours and trigger the storage place where the goings-on of the committee are retained.

If you can dredge up any memories of how the committee operated, who the key members were, what the context of the issue was, and what your feelings were at the time, then maybe you can write out a statement--a page or two or three--to that effect and we can insert it in the interview.

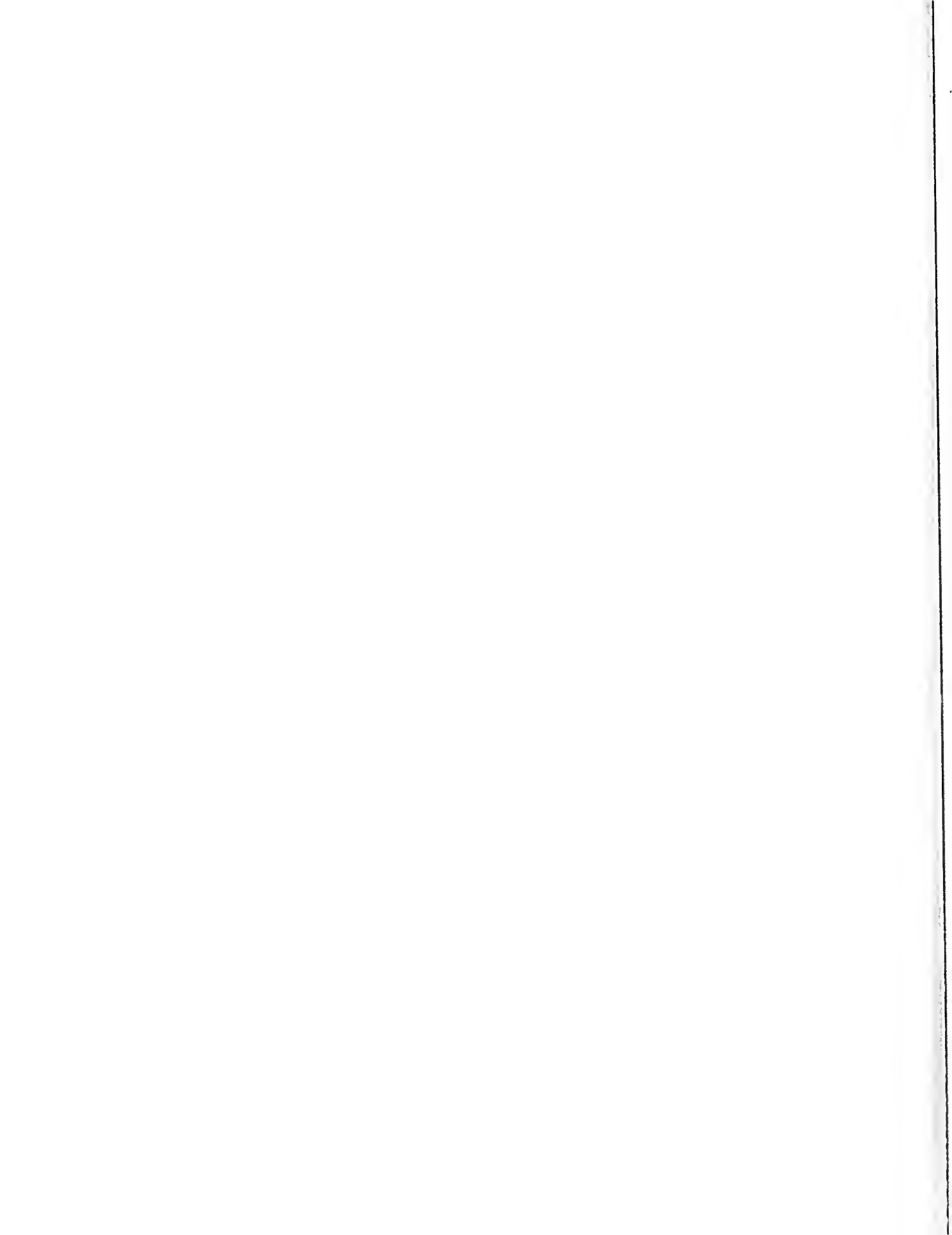
In the meantime, please be thinking of pictures that we can use in the finished product. It would be interesting to have photos of you in school, as a young forester in the wilds of Oregon, as the head of the Station, and perhaps others of you with pertinent people who were also active and on the forestry scene. In addition, you may be able to supply shots of Wind River, of the Station, of various experimental plots, of the Portland Forest Park, the Museum, and anything else that you talk about. We will want to put photos in at least three copies of the final manuscript, and if we don't have the budget to cover reproduction expenses, we will need enough different pictures of each period of your life to distribute among the various copies. Do you think you can supply all these?

I'm working hard to get the rough-editing to the copy-editor (who will prepare a clean, more readable copy for you) before I go on vacation September 1.

Dean McCulloch is passing through the San Francisco airport tomorrow; I am going to try to visit a little with him then. Do you ever travel down this way?

Sincerely,

Amelia R. Fry





THORNTON T. MUNGER  
2755 S. W. BUENA VISTA DR.  
PORTLAND 1, OREGON  
CA 3-8970

September 8, 1967

Mrs. Amelia R. Fry  
Regional Oral History Office, Univ. of California  
Berkeley, Cal.

Dear Mrs. Fry:

Your letter of August 25 should have had a prompter reply, BUT --  
Now you are probably on vacation, and not missing my reply.

The enclosures you sent about the Black case don't "dredge up any memories" about the local SAF's committee handling of the matter. All I recall, as I told your machine, was a meeting in Greeley's house in Seattle. I can't recall who else was there if anybody. One reason why I am so blank on the subject, ( aside from the fact that it was 32 years ago ) is perhaps that I was not at all emotionally worked up over Black's conduct. I guess I didn't take Chapman's charges very seriously.

About pictures: I never was much of a collector of pictures of myself; I have more of horses in the early days. I enclose three poor reproductions used in my "Recollections" ( mimeographed by the F.S. Thirty Year Club ).  
Would any of these be such as you want? I/<sup>could</sup>probably by some research get glossy prints of these.

I had the pleasure recently of an over-night visit from the Sam Dana's, who were just back from Alaska, escaping from the Fairbanks flood. Dave Mason, his Yale classmate, was here to dinner one night, but we didn't discuss forest history, but reminisced a lot.

Sincerely yours,

Thornton T. Munger



REGIONAL ORAL HISTORY OFFICE

ROOM 486

September 15, 1967

Mr. Thornton T. Munger  
 2755 S. W. Duena Vista Drive  
 Portland, Oregon

Dear Mr. Munger:

Your letter was awaiting me, along with its enclosures of sample pictures, when I returned this week from vacation. (We did not get up to Oregon; our time was so short that we spent it all on the Bel River in the redwoods.)

The pictures will be good one to use, and if you can sniff out the glosses that will be a big help. Incidentally, if the Forest Service will make reprints for you, don't discourage it, because we need pictures at least for (1) Bancroft's copy, (2) Yale's copy, (3) your copy, and (4) our office copy. As much as I like horses, in this case I prefer your own portrait; do you think you have a portrait--one of those Forest Service office portraits, perhaps--that we can use as a sort of frontispiece?

I am sending first class special delivery a rough-edited copy of the transcript for you to check over. A list of specific questions on words I am not sure of is attached. Please add anything you want to.

The next thing is the contract: Do you want the agreement that gives all publishing rights to the University (with the provision that any such arrangement has to have your approval and any royalties involved go to you or your heirs), or the one that provides for all rights going to you for as long as you wish to specify? In either case, no one can quote from your manuscript without first getting your permission. Let me know about your choice and we can get the five copies typed up and sent to you for your signatures.

I hope that you are not swamped with some big project right now, because Yale is writing me nearly every week asking if your manuscript is in the bindery yet and when will they get their copy. It must give you a comfortable feeling to realize your memoirs are the subject for such eagerness. It gives me an uncomfortable feeling because it means we mustn't stop to pick daisies along the way but must rush the thing to its conclusion.

I'd like to have been in the corner with my trust recorder when you and Sam Dana were reminiscencing.



September 18, 1967

Dear Mrs. Fry:

Refering to your letter of September 13:

The packet came special delivery this AM at 7:30. I haven't OPENED IT YET. I dread to do so; I will find it so flat and prosy and egotistical. But if Yale is in such a hurry for it I will try to get at it soon. I will feel inclined to blue-pencil the whole thing.

About the publishing rights: O.K. for the University to have all, without any reservation.

I have spent hours and hours looking for the negatives or good prints of appropriate pictures, both in my personal collection and in the Forest Service collections in the R. O and in the Exp. Sta., without much luck. The cataloguing system is such that they can't find what I want, or the negatives have been destroyed.

I shall be able to get 4 prints of some pictures, but for others I have only a single print which I assume the FHS can have duplicated.

I have a single copy of a pretty good "portrait" of me at my desk in the 1930's which you say you want for a frontispiece.

Would you want something like the enclosed? Or don't you want to show your subject at play with his family? I have the film of this.

Sincerely yours,

*Thornton T. Munger*



September 21, 1967

Dear Mrs. Fry:

I have read hurriedly about half of the 280 pages, and will finish the rest today. It reads better than I expected, but I will not recommend it for past-time reading, except perhaps to my sons.

You speak of my "approval" and "checking it over", but I am puzzled as to how far I should go in red-pencilling it with editorial changes.

I will of course correct spelling, insert missing dates and facts and correct grammatical errors.

But should I cut out phrases or questions and answers that seem to me irrelevant or duplicative. ( One instance of this is how to make growth studies, the different methods in clear cut and selective cut stands, which is discussed in detail in two places.)

I don't want to do any more "editing" ~~THAN NECESSARY TO MAKE THIS~~ than necessary to make this readable. You don't want it polished or lacking in spontaniety.

I think there is too much in the pre-college, home-life chapter about visitors at our home and autographs of my father's friends. This is remote from forest history, and I would like to see it shortened ~~or~~ and clarified. But I will not touch it with my red pencil until I hear from you.

In your letter of Sept. 13 you say "A list of specific questions on words I am not sure of is attached", but I do not find such a list.

Sincerely yours,

Thornton T. Munger





REGIONAL ORAL HISTORY OFFICE

ROOM 486

September 23, 1967

Dear Dr. Munger:

Your two letters--Sept. 18 and Sept. 21--arrived simultaneously today. It is a delight to find someone so conscientious and cooperative, even though he has reservations about the value of the document. I am sure that historians will not share your reservations.

Your present editing sounds as if it is just what I would order if I were standing over your shoulder (heaven forbid). Correct the spelling, names and facts that are in error, and gross grammatical errors that might belie the fact that you are an educated man. There are none of that kind in your transcript, but often spoken word converted to written word sounds less tightly knit. We prefer to leave it loose and informal, as long as it sounds as literate as you really are and also as long as it is not ambiguous.

Duplications can be shortened the second time around (if the second discussion is needed for a bridge) or taken out. If they are only a paragraph or two, might as well leave them in. I fear that I missed the duplication in the discussion of the different methods employed in growth studies in clear cut and selective stands.

Please leave in all that information on your pre-college, home life. This gives you dimension, and for local historians in Connecticut it will be like good vintage wine. Any clarification you can give it is, of course, welcome.

In fact, add anything you think is remotely desirable. I fear that you may let modesty guide you. Instead, think of all the future greedy Ph.D. thesis-soekers and free-lance writers and scholarly historians who may beat their heads against the table because you left out something.

It baffles me that the list of questions, with page numbers, was not included in the MSS. It is not in our office, so I suspect the mail room where the packing occurred. I am sending my carbon.

That is a marvelous family picture. We need more of same, or else the negative. I added up the libraries that might be-- (not "might be"--that already have expressed a desire to have copies of this series of interviews: Bancroft, UCLA, FHS, Denver, ROHO, you, probably the USFS; that means seven copies. So we should plan on pictures that can be spread around between them.



THORNTON T. MUNGER  
2755 S. W. BUENA VISTA DR.  
PORTLAND 1, OREGON  
CA 3-8970

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October 20, 1967

Dear Mrs. Fry:

Supplementing my letter of October 7 to you:

At last I have gotten together a few pictures which are more or less appropriate. I leave it to you to cull those that are not.

There are eight pictures, titles for which are enclosed. Of a couple of these I have only 6 prints. The package of prints is going under separate cover, by letter mail. Hope they get to you OK.

I am waiting to hear from Washington about another rather appropriate 1911 picture, which will be sent you if I ever get it.

Sincerely yours,

*Thornton T. Munger*



## REGIONAL ORAL HISTORY OFFICE

October 31, 1967

Dear Mr. Manger:

Your pictures arrived safely, and we are so happy that we can have enough prints to go around in all the more important copies of the manuscript. Thank you, from the bottom of my budget.

I hope that picture from 1911 arrives. I'll be at the Forest Service in Washington November 16 and 17. Is there any specific person there I could see about dispatching it?

I leave next Wednesday for New York and am making a manful effort to get your manuscript ready so the typist can be final-typing it while I am gone.

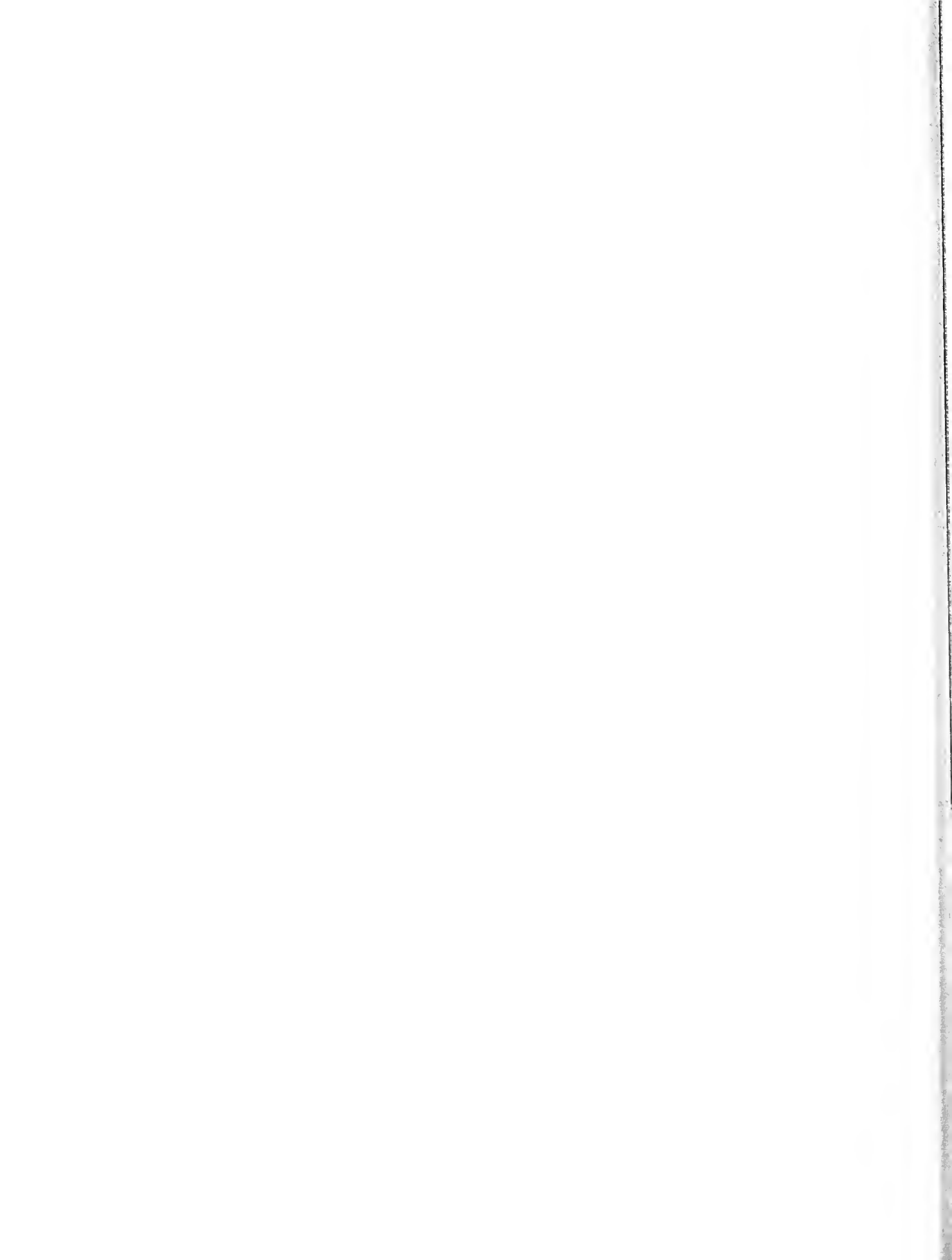
Thanks again for your marvelous habit of always coming through just the way we need your help and when we need it.

Sincerely,

Anelia Fry



APPENDIX II  
PROPOSED OUTLINE FOR INTERVIEW  
SAMPLE OF QUESTIONS USED IN FINAL EDITING





*Munger*  
PROPOSED OUTLINE FOR INTERVIEW

I. Childhood and Education

(Family background, public schooling, and community)

Yale Forestry School

II. To the Forest Service

- A. Your experiences working in the Section of Silvics under Fred Ames to 1918: reconnaissance projects, plot studies, inspection methods, any other studies you want to comment on.

--The establishment of Wind River Experimental Forest (1911)

- B. 1918: (Acting Chief of Silviculture while Ames was in 20th Engineers)

--The Douglas fir region study of proposed minimum requirements by the government on private land owners--forest practices.

--The Spruce inventory for airplane manufacture, World War I, Olympic National Forest

--Anything on land exchange methods? (Your diary shows a conference in the Deschutes office in Bend, 1932.)

--Attempts at forest insect control?

--Your evaluation of the reorganization of the Section of Silvics

III. Director of the Pacific Northwest Forest Experiment Station, 1924-1938

- A. How you were appointed; your duties; the relation of the station to industry, to colleges and universities, to the Regional office; staff members.

- B. Studies undertaken during this period: you might want to select a few of the following to tell of methods used and effect of the results.

Douglas Fir Yield study ("Timber Growing and Logging Practices in the Douglas Fir Region.") 1927

Slash disposal



Lightning and static studs  
 Fire studies  
 Seed studies  
 Selective logging Silviculture studies  
 Snag felling  
 Mill scale studies

and others... land economics (erosion and soil),  
 delinquent lands/forest taxation

#### SECTION ON PARTICIPATION IN NATIONAL STUDIES

C. The Forest Survey

D. The McNary-McSweeney Act: your work with lumbermen in planning provisions that might be included in the bill.

E. National Study on Forest Taxation. & The Station's role in construction of Oregon Reforestation Land Tax Act of 1929.  
 ③ --Also, your participation on Special Committee on Forest Taxation, 1935-36--a Governor's Committee I believe.

F. The Forest Insurance Studies, 1924--A.B. Eveste of Seattle; --Also, 1930-34, Harold B. Shepard's.

G. The Lumber Code and Article Ten, 1933

H. State and Private forestry conferences in Washington around 1937

IV. OUTSIDE AGENCIES: You may want to relate some of your activities in the following, or a select number of these:

A. Western Forestry and Conservation Association

B. Forest Products Laboratory

C. U. S. Chamber of Commerce (Forest Policy Committee)

D. West Coast Lumberman's Association

E. Pacific Logging Congress

F. Society of American Foresters (Industrial Forestry Committee)

G. others?



## PAGE

- 13 Santaes Mapin.
- 15 later or earlier?
- 27 crew? 1908 correct date?
- 43 came by train. According to Timberlines, you took a 4-horse stage from Shanko to Prineville--64 miles; 2-horse stage from there to Bend and Rosland.
- 63 Fill in Austrian wild rivers.
- 95 Correct words?
- 72 Met Pinchot in summers at ? House.
- 74 I can't find anything in my notes or your recollections..." about the Southwestern Oregon So. And I never gave you a chance to answer the question. Could you insert the anecdote here?
- 86 age of what?
- 118 went in caves back East?
- 124 Go on and say it! (Did I guess right?)
- 156 What do you think this should be? (bottom)
- 135 J. Elton ~~DD~~dewick?
- 190 top line-- ? tax. Line 3--is insert correct? Copy of the handbook on forest put out for Article Ten?
- 172 Selective cutting in Douglas fir was practiced in the national forests for less than a year, I believe. Maybe you could say "for only a few years," if we can't establish the exact number of years.
- 170 ~~Not~~ Not clear what the citations are. Can you clear this up with material at your fingertips there?
- 231 Also--title of paper? Name of Murray's company?
- 190 Top blank. "Ad Valorem" tax? (same as above)
- 209 couple hundred conscientious objectors? or CCC boys? Is previous sentence accurate?



## APPENDIX III

NOTES FROM S. A. F. AFFAIRS--February, 1936





Notes from S. A. F. Affairs—February, 1936 , pp. 3-12

- 1) Letter from E. H. McDaniels, Chairman of Columbia River Section, stating that a special committee of the section will study Black case with an eye to by-laws—adequate protection of the individual from unfounded or hasty action.

Chapman's answer was in two parts as follows:

- 1) Procedure in Constitution and By-laws;
- 2) Procedure actually followed

Charges were signed by seven people—Chapman says names are withheld and all guesses (including Black's) have been wrong.

Charges presented to S. A. F. January 28, 1935

- 1) Black secured a position on the State Board of Forestry by political means, and elected chairman at request of Rolph for the purpose of getting Pratt dismissed.
- 2) He tried without the sanction of the Board to get Governor Rolph to dismiss Pratt—"incompetency and political activity."—Governor thought that he had the approval of the Board.
- 3) Black has discredited Pratt to his supervisors, to the public, and to subordinates.
- 4) Black has usurped the authority of the state forester.
- 5) About the same as number four
- 6) He failed to call meetings for the Board of Forestry—usurped the prerogatives of the State Board.
- 7) When the initiative was won to put the State Forester under the protection of Civil Service, Black tried to get the Board of Forestry to dismiss him in the interim, which Black could have done with the new Board member Fritz's vote. But Fritz caught on and would not accept the appointment.

Note: Board members intent on Pratt's dismissal were S. Berry and Hedges.

Chapman, with Black's okay, sent a copy of the charges to CFPA directors. Swift Berry and Mr. Moir accused Chapman of "broadcasting the charges". Chapman says that Black "gave me no names of persons to write to corroborate his statements made in his reply [defense] of July 18." However, Swift Berry and Richard Colgan sent in pro-Black statements.



## Page Two

Notes from S. A. F. Affairs (continued)

The case was sent to council on September 20., 100 pages single spaced. Each member read it, mailed in his vote, and mailed the Case testimony to another member (There were only four copies.). The verdict on November 20th was--expelled. Eight members out of nine on the Council voting yes. (Kotok voted no.) (Fritz was on the Council at this time.) Charges number five, six, and one were thrown out because they required proof of motives.

Black's answer to the charges: He had requested that Chapman have charges published in the Journal but that this could not be done because of Black's attack on Pratt in his own defense.

Chapman says that Black, Berry, and E. T. Allen were the only ones who made attempts to tie Black's actions with his motives, to insist on trying the state forester as part of the Black case.

Chapman defends the countercharge that the U. S. Forest Service men wanted Pratt retained, because "lumbermen" wanted him fired; Chapman says that Berry intimated the opposite point of view.

September, 1935 Investigation ended



**SAP Affairs March, 1936 Vol. 2, No. 3, pp. 19-20**

**"Petition in the Case of S. Rexford Black"  
From the California Section and the two Pacific  
Northwest sections. (December 12, 1935 Petition)  
Council agreed on January 25 to grant a review**

Charges against Chapman were signed by Swift Berry, R. A. Colgan, Clyde S. Martin, T. K. Oliver, and W. R. Schofield. As a result of Chapman's work in the Black case, the following charges were presented to Society vice-president S. T. Dana on September 21, 1936: The undersigned herewith present...charges that H. H. Chapman...acted with conduct unbecoming a professional forester and in a manner deliberately unethical for a member of the Society, in connection with his handling of the S. Rexford Black charges by making public statements tending to reflect upon the reputation of other foresters so as to prejudice their means of earning a livelihood, without at the same time giving equal publicity to defense statements." Specifically, the most important charges centered around a letter which Chapman had printed in the SAP Affairs (February, 1936) in response to a request for information concerning the Black case. Part of the charge involved Chapman's alleged unethical mention of Swift Berry and E. T. Allen in this letter.

Dana notified Chapman of the charges and the two corresponded concerning how the matter should be handled. Chapman, probably desiring to clear his own name, wanted to have the charges investigated. One opinion against investigation was cast by Col. Greeley, who was chairman of a Society Committee which was reviewing the Black case.

On November 11th Dana submitted a memorandum to the Council with a ballot concerning the Chapman case. This ballot determined that Dana would investigate the case, which was in line with the Society's by-laws. Various approaches to the case were offered and it was suggested that discussion should be opened as to the general procedures which should be followed in such cases.

From the beginning Dana attacked the case on two levels: that of Chapman's guilt in this particular case, and that of the general problem of how to handle such cases in the future. Dana's report to the Council and the ballot on March 19, 1937 illustrated this division. The Council responded by



## Page Two

unanimously voting Chapman not guilty and accepting Dana's suggestion for changes in the by-laws to meet such cases in the future.

Dana based his decision concerning Chapman's innocence on several points. One of the major issues was the propriety of the letter which Chapman had had printed in the SAF Affairs; Dana justified this act as follows:

"Opinions may well differ as to the extent to which publicity should be carried in cases of this sort, but that the President and the Council have the right to make their findings, with the reasons therefor, as generally known as they think wise seems to me indisputable. In the present instance, it seemed reasonable to assume that other sections would share the Columbia River Section's desire for further information, and had an equal right thereto." Dana felt that Chapman had not acted unethically in omitting Black's defense because the letter had merely contained the charges--with neither opposing or agreeing arguments. Furthermore, the defense contained numerous unfavorable references to Pratt.

A further specific charge accused Chapman of making derogatory remarks concerning two men, who had defended Black. Dana termed the language used as "unfortunate" and would have preferred to see the names of people omitted from a discussion of principles. However, he felt that the statement could not be termed unethical, since it did faithfully portray the position which the two men took.

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## APPENDIX IV

## BIBLIOGRAPHY OF THORNTON T. MUNGER



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## APPENDIX V

PARTIAL BIBLIOGRAPHY OF THE PUBLISHED WRITINGS OF  
THOEDORE THORNTON MUNGER D. D.



Partial Bibliography of the Published Writings of  
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