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PALEOBOTANIST, CONSERVATIONIST

Professor of Paleontology, Emeritus

Curator of Paleobotanical Collection in the
Museum of Paleontology, Emeritus

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Ralph W. Chaney pictured in 1955 [above] and since

INTRODUCTION

Ralph Works Chaney was born in Brainerd, a suburb of Chicago. At that time--1890--Brainerd was in the midst of miles of prairie alive with birds. He watched them intently and became aware of surrounding elements of nature. He wanted to know all the birds, rocks, trees, and stars he saw. His ecological interest developed and became particularized in the study of zoology, botany, and geology. Later, his research in paleobotany combined his interests in botany and geology in developing one of the largest and most significant collections of Cenozoic plants in the world.

In 1922, as a Research Associate of the Carnegie Institution, Dr. Chaney was quartered in Berkeley and became attached to the University of California as Honorary Curator of the Paleobotanical Collection which he enriched immensely with material gleaned from numerous field excursions. He joined the faculty of the University as Professor of Paleontology in 1931 when he became Chairman of the Department of Paleontology.

His early interest in the surroundings of nature matured into close and continuing association with organizations fostering conservation measures. His broad interests and enthusiasms in other directions carried him into student affairs and local community activities.

The Regional Cultural History Project of the University of California, under the academic supervision of Professor Walton E. Bean of the Department of History and the administrative supervision of Mr. Marion Milczewski of the General Library, is engaged in tape-recording and preserving interviews with Californians who have participated in the life of their time and have made a significant impression on their environment. One series of these interviews, for the use of Professor Walton E. Bean in his preparation of a Centennial History of the University of California, is with individuals identified with the University whose faculty or administrative duties have had formative significance in the development of University policy or distinction.

Professor Chaney's outstanding teaching and research in paleobotany brought him to the attention of the Regional Cultural History project. He was interviewed during the spring and summer of 1959 at his residence on a heavily wooded, steep, western slope in the Berkeley hills at 1129 Keith Avenue. In a room gleaming with smoothly polished wood surfaces and handsomely accented by Oriental pictures and objects, Professor Chaney recounted his experiences in field and classroom, University and community. His spare figure, youthful complexion, and direct blue eyes reflected his energetic and direct approach to life.

Edna Tartaul Daniel,
Interviewer

Regional Cultural History Project
University of California, General Library
Berkeley, March 25, 1960

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I. ANCESTORS AND PARENTS

Chaney: There were seven American generations on my father's side, and ten on my mother's. They came over from France and England respectively. My great-gradfather, Samuel Chaney died leaving Anna and some thirteen children, of whom my grandfather, Ralph, was in the middle. Great-grandmother Anna Davis Chaney moved out from Virginia to Ohio, and then to northern Illinois, near Rockford, in 1834. They lived in a log cabin. All the sons, including my grandfather, became farmers. The last of the Chaney farms has been sold in the last three years.

I am now the only landholder of the old Chaney property--a twenty-acre wood lot, which will be used as a forest and flower preserve. It's not being used that way now, but at least I'm holding it, hoping that something of the sort can be done with it.

My father, Fred, was born in 1854.

Daniel: Can we go back just a moment now, to your ancestors who came here. Do you have any knowledge

Daniel: about why they came?

Chaney: Anna, the widow of Samuel, was the daughter of a tobacco planter. He turned loose his slaves around 1800, a little later than 1800 probably, and moved to Ohio where he died. His daughter, in the meantime, had been widowed and she kept on going to Illinois. It was an agriculturally productive land.

Daniel: Yes, it was a land of opportunity then.

Chaney: They had eight sons. They had facilities for farming.

Daniel: Yes. Well, this is the story of the march across the country.

Chaney: In the meantime my mother's family had settled in Massachusetts.

Daniel: When had they settled there?

Chaney: The first date that I have is 1622.

Daniel: For the usual complex of religious and economic reasons?

Chaney: Presumably. I note that he is listed as a "freeman," which means, I presume, that he paid his way over, although I'm not sure that that was it. He was one of the original poprietors of Andover, Massachusetts, a very early settler

And down through that group there is a series

Chaney: of interesting names: Thomas, Brewer, Phelps, Adams, Birge, Butterfield--all British Isles, you see.

Suzanna was my great-great-grandmother. My great-grandfather was Charles, born in New York; and he moved to Illinois where he was an office-holder, a supervisor, assessor, collector, treasurer, justice of the peace, and so on--an outstanding man in the community as were my father's people. More of that later.

The line of Laura Jeanette, my mother, the Sanford line, also had nine generations, having come from Abran to Connecticut in 1637. And the Sanfords have no end of typical names that came over on the "Arabella" with Governor Winthrop. The family names are Powell, Baldwin, Strong, Mitchell, Spencer, and finally Works, which is my--

Daniel: Yes, that's your middle name.

Chaney: All Scotch and English in that line. In fact, my father's line--one never knows about the grandmother's--was almost entirely Welsh, Scotch, and English, though his actual point of origin is said

Chaney: to be France. I suspect he may have gone from Ireland or England to France and stayed awhile and come on. I am not sure about the actual French ancestry. As I grow older I come to recognize a very Irish aspect in my father's family. They look more and more like chimpanzees as they grow older, (laughter), and so I suspect that the French part of it may be family fable. All the records show that the point of origin was Paris, France. I very much doubt if there is much French: possibly a great-great-great-great-grandmother. Now Laura, my mother, and Fred were married in 1885 and lived in Chicago where my father worked for a wholesale house, Marshall Field and Company. He did all sorts of things.

Daniel: Marshall Field was purely a wholesale house?

Chaney: No, it was retail as well, but he worked for the wholesale part of it, which was a separate store.

In those days, Marshall Field, the original Marshall Field, was on the job. I may or may not have seen him, but he was around a great deal and building up the business. My father got involved in his later years in getting up the catalogues, rather than in salesmanship.

Daniel: Isn't that sales promotion?

Chaney: Yes. And neither he nor my mother had college educations. They lived in small towns where such things weren't usual in the seventies and eighties, when they would have been going to school.

Daniel: This is true of that time, isn't it? The people who went to college went for specific training.

Chaney: In law and medicine, of course. The professions. But there wasn't very much liberal arts.

Daniel: And there certainly were no curricula in business administration.

Chaney: Oh, no. My mother, in particular, was very well-informed. She had several unfortunate hobbies, one of which was foreign missions, but it did give her a pretty good deal of breadth.

My father was, in one sense, an educated man. He was a freethinker politically, and in 1912, I recall, was an ardent Bull Mooser, that was Teddy Roosevelt's party, you know. (My first vote was for Teddy Roosevelt.)

Daniel: A freethinker, in the period in which he was thinking politically, had a good deal to think about.

Chaney: There was a very vicious strike--railroad strike--

Chaney: which took many lives, one of the great labor episodes.

Daniel: This tradition of free thinking and free thinking in the political sphere would probably have some effect on your early childhood. At least you were hearing about what was going on.

Chaney: My parents were not liberals in the sense of modern liberals who find it smart to criticize everything American. They were liberal-minded about accepting new ideas. They were liberal, not liberals. There's a distinction. I used to be a liberal myself until it seemed to be necessary to be a little disloyal about it. That sort of thing I can't stand.

II. EARLY ENVIRNOMENT. FIELD AND SCHOOL

Daniel: You began your schooling at the last part of the last century, didn't you?

Chaney: Yes, in 1896. I went to first grade in the little suburb, Brainerd, which was ten or twelve miles southwest of the Loop. It was, in effect, a town, although it was part of the city of Chicago. In those days we had square miles of prairie around our home, and there were glacial boulders which had floated out into the lake in icebergs and settled there. All of our neighbors and even my parents assumed that they were meteorites--a fantasy, but none of them knew anything about geology. They were granite boulders: they stimulated my first curiosity about rocks. I remember later finding out what they were, realizing that we had been in error.

But essentially, the exactness of science didn't matter in those days: there were violets, shooting stars, wild strawberries, meadowlarks' nests, and bobolinks' nests on this prairie. The prairie chickens were gone, just barely gone. I

Chaney: saw them later in the Chicago area after I grew a little older; but it was too late for prairie chickens at Brainerd.

Daniel: I think it would be interesting to hear just a little more about the prairie chickens before we go on.

Chaney: The prairie chicken is a relative of the spruce partridge or grouse, and also a relative of our quail. It is a much larger bird than the California quail, not twice as large, but nearly. Living on the prairies its gray-brown colors fit in well. At the time I first saw it, probably around 1908--it could have been a year or so later--it was almost extinct in the Chicago area. I found one nest with the eggs broken, probably hatched at about the same time. Twice I saw prairie chickens--very wild--flying away at a distance. I've seen many relatives of the prairie chickens--the so-called galinaceous birds--since, in various parts of the world: Central America, Japan, and the Philippines. I had never had a more marvelous sight than seeing this quite large bird--eighteen inches or thereabouts in length flying up and away--when I was a schoolboy wandering around on

Chaney: the area which is now the Chicago-Midway Airport. There's nothing left for a prairie chicken there, only flying planes.

Daniel: What about the distribution of the prairie chicken?

Chaney: It's an eastern bird. It's a bird of the prairies. It comes as far west as the high plains, the Rocky Mountain foothills, I suppose. I've never seen it anywhere but in Illinois, but I'm sure there are a few remaining areas where it must be fairly common.

There's the spruce partridge in the mountains of Colorado and elsewhere, which is not quite as large as the prairie chicken. Then there's the sage hen which is larger, and the wild turkey is the largest of all the American galinaceous birds.

Daniel: Returning to your home surroundings, what domestic creatures claimed your attention?

Chaney: We had a cow and I started milking her at age eight when my father was away. I took charge of her and the calves. We had goats and rabbits and that sort of thing.

Quite early, when my sister was in high school, which would have been when I was about

Chaney: twelve years old, I began to wonder about the birds I didn't know. I knew all the common birds like robins and bluejays, of course, and meadowlarks and bobolinks. But birds I didn't know I described and my sister took the descriptions to her zoology teacher, (this was about 1900) and he would give her the names of the birds. So I was beginning to be aware of the elements of nature around me.

Daniel: You didn't bring these questions to your teacher?

Chaney: I didn't have any who would know the answers. They were grammar school teachers.

Daniel: How did you know they wouldn't know?

Chaney: We never had science of any sort; you must remember that this was the curriculum of a wholly different age.

Daniel: What did it encompass?

Chaney: We had geography, if that's a science. It wasn't taught as a science. We had physiology, so-called, but the principal purpose of it, required by law, was to show how the stomach was rotted by cigarettes and liquor. It was a temperance crusade.

Daniel: It was temperance inspired?

Chaney: It wasn't physiology. It wasn't really very much.

Daniel: What besides geography, physiology...?

Chaney: Well, there was arithmetic, of course, and grammar. I've always known a great deal about grammar.

Daniel: And of course reading.

Chaney: Reading, spelling, writing.

Daniel: Was your reading extensive?

Chaney: I read constantly.

Daniel: What did you read?

Chaney: I read Robinson Crusoe, Swiss Family Robinson, Beautiful Joe, the Alcott books, and dozens of others.

Daniel: I see. And so your ideas outside the school framework would tend to bring another source of knowledge.

Chaney: Well, any ideas having to do with science--I have never thought of this until this minute--it never occurred to me that my teachers would know anything about science. They never said anything about it. They could have had a secret hobby, but it's most unlikely. At any rate, they never told us anything--told me anything that was helpful in terms of my principal interest, which was everything living around me--natural history.

Chaney: So I got it gradually through my older sister's high school teacher. Then when our family moved to Hyde Park, a quarter of a mile from the university in Chicago, I lived in a court, a group of houses side by side, in one of which, quite by chance, there was a curator of paleontology at the Field Museum. I got acquainted with him.

Daniel: What a golden opportunity. How old were you at this time?

Chaney: I was thirteen when we moved, and I was fourteen in August.

Daniel: Already at fourteen you had a chance--

Chaney: With him I went to the museum. He never did much for me directly because I wasn't interested then in fossils, but he took me in and introduced me to a man named Ned Dearborn, who was the assistant curator of ornithology. Dearborn is still a rather distinguished man in quite a number of different fields. I haven't seen him since 1915. Dearborn showed me the collection of birds. For the first time I saw scientific specimens. In fact, on one occasion I helped unpack a collection from Central America in the original boxes. It was an experience which thrilled me, of course,

Chaney: birdskins, they were.

Daniel: What were your feelings about your new acquaintance? Were you fascinated?

Chaney: This was my first contact with the outside world. I was really a country child. Then we moved into Hyde Park where I was becoming a city boy, where my friends were all much more sophisticated than any I had known.

Daniel: Or so you thought.

Chaney: Oh, they were! They had more money and experience, many of them, at least. But throughout it all, throughout all of my high school years, my interest was primarily in birds, and trees, and other things, but primarily birds.

Daniel: What about your teachers in high school. Did they help you more?

Chaney: It's an astonishing thing. They helped me by sympathetic attitude, but I didn't take a course in zoology when I was in high school. There was one, but it was said not to be very good. And it was a laboratory course, and I was interested in field zoology. So I didn't take a course in zoology, and I did all my work with birds at the Field Museum.

Chaney: Dr. Dearborn suggested a book, Wild Birds in the City Parks, which gave the date of arrival of migrating birds. Lake Michigan naturally is a barrier to migration. At least half of the birds came around on the Chicago side and the other half on the Michigan side. We got a terrific concentration of insectivorous birds, most of our birds were vireos, warblers, and flycatchers--in May--May 13, 14, and 15. I recently wrote to one of my few surviving high school teachers, a German teacher, oddly enough, who excused me one afternoon on the 14th of May, it must have been. I'd been out early in the morning. I had to go to school at 8:30, I suppose. I had German in the afternoon and she excused me. Well, I remember to this day the remainder of it--the bird, a very beautiful, orange-colored warbler (Blackburnian) I saw that afternoon, which I wouldn't have seen if she hadn't excused me.

Daniel: You carried on these activities within your own frame of--

Chaney: Completely within myself.

Daniel: --reference, exploring the world around you. But you didn't do it through formal education.

Chaney: I had no zoology whatever.

Daniel: And you didn't belong to a youth group or anything of this sort?

Chaney: There were no Boy Scouts or anything of that sort.

Daniel: Did you share this with anyone in your family?

Chaney: No--yes, my mother was highly sympathetic. My father was inclined to think that I would starve to death if I didn't learn something useful.

Daniel: So you went about it quietly, then?

Chaney: But my mother was highly sympathetic. My father was completely cooperative, and with very limited means educated me and my sisters at a time when college educations were still not at all universal, although they were coming to be more prominent, of course.

Daniel: Now, all through high school you were doing this on your own, you were exploring. Did you go further afield from bird observation, or did you confine your activities to this?

Chaney: Almost entirely birds, although I was learning a good many plants.

Daniel: Because these were the things that birds had food or...

Chaney: Because I saw them with the birds.

Chaney: There were one or two rather intelligent friends, mostly older than I, whom I met looking for birds. We didn't call it birdwatching in those days. We just called it 'birding.'

Daniel: Birding--I see. Were these other boys, or were they college men?

Chaney: There was a married couple--two Quakers. There was a physician, who died within the past six months, a very old man, a rather eminent eye, ear, nose, and throat man from Chicago. There was a young girl of about my age who was a pal, a wealthy and somewhat dissipated but very fine boy whom I knew well, and who was pretty interested but somewhat lazy and didn't get out early in the morning. I used to get out at four o'clock.

Then later I met a man whom I knew in college, a year or two older than I, who didn't know any more than I did about it but was older, and carried a certain weight of authority that comes with age.

In general, I didn't talk much about this in high school because none of my good friends knew anything about birds or had any interest in them, and when I did mention occasionally that I couldn't do something because I was going to look for birds,

Chaney: I was ridiculed. They were good friends, but there was much laughter about the fact that I was going to look for birds.

Daniel: What was everyone else doing? What was the accepted activity of a young boy of your age in high school? Was the athletic program important?

Chaney: A good many of the boys were on athletic teams. I was not, in high school.

Daniel: And you weren't interested, apparently, in doing the things that everybody--

Chaney: Not very much in girls, though by the time I became a junior I certainly went to the junior prom and the senior prom, and I suppose I went to four or five dances a year. We used to go to 'call' on girls in those days. We used to sit apart, not holding hands, or getting anywhere at all in terms of what we are told of modern youth. Just 'calling,' talking, I suppose, which isn't a bad idea. Perhaps I was very much more of a bore than I realize. I've wondered since.

Daniel: What about your studies in high school? Did they interest you particularly, or did they just sort of slide by?

Chaney: Latin, mathematics, and English--all were extremely interesting.

Daniel: Did you work hard?

Chaney: Oh, hard enough. I got--

Daniel: You didn't study terribly hard for long hours?

Chaney: No, I suppose I got as many A's as B's, and probably not any C's.

Daniel: School was no problem. You enjoyed it.

Chaney: None whatever. It's what I expected. Everybody did it. I did it as a matter of course. Every morning at four, and as soon as school was out, I beat it for the Wooded Island. The time belt was a little differently placed with regard to Chicago so that at four o'clock it was beginning to get light. By the time I walked a mile or so to the Wooded Island, it was light enough to see birds. Early morning was the best time. I have written records of all this. I could tell you what birds I saw on almost any day of any year between 1905 and 1915.

Daniel: Summer and vacation time you had opportunity for more observation.

Chaney: We went to Michigan.

Daniel: Why did you go to Michigan. Was this the place that everybody went to?

Chaney: It was cooler, and it was less settled than our

Chaney: part of Chicago which was beginning to grow up. Of course, living in Hyde Park--it was very citified. Michigan was just in the right place--there were wild berries and beautiful forests.

Daniel: You went for the whole summer?

Chaney: We went for the whole summer. While I was in high school I met, through his son, Charles Otis Whitman, a very eminent zoologist, whom I discussed with your father-in-law [Professor J.Frank Daniel, Chairman, Department of Zoology, 1936-1942]. Whitman was working in a vague way, as they were doing in those days, working in genetics, and using doves and flickers as his laboratory material. He had some red-shafted flickers,the western flicker, but oddly enough he didn't have any yellow-hammers, the yellow-shafted birds--flickers of the Illinois area. Well, I got acquainted with Frank Whitman, the son, and he told me his father had some passenger pigeons which were, practically speaking, extinct. I went to the Whitman backyard which had hundreds of pigeons of many kinds in it, and some flickers, and I saw those passenger pigeons. I have actually seen two live passenger pigeons, though they were sterile old females just about ready to die. I met his father, and I learned.

Chaney: that his father wanted flickers, and of course I knew where I could get flickers. So I walked out to a flicker's nest that I had found. First I took a streetcar ride out 111th Street to the outskirts of Chicago and then I walked for at least two hours--which is certainly amazing to think of--and brought back those flickers. In fact, I went once and they weren't quite ready, and I went back again when they were the way Professor Whitman said they should be, with feathers almost fully grown. To my amazement, because I had honestly never thought of such a thing--I had sold rabbits and all sorts of things, cucumbers and garden stuff--but I had never thought of being paid for anything so delightful as getting flickers. To my astonishment Professor Whitman gave me five bucks, which was really an enormous amount. It was the first five dollars that I had ever had in one lump.

He told me then that he would give me five dollars more for every batch of flickers I got him. So that turned me pro, and I got him maybe four batches that year, or maybe that year and

Chaney: the next, and I also used to get ant eggs from ant nests to feed them. He showed me how to do that.

Daniel: You were in business.

Chaney: Now, this brought me in contact with a truly great man. Dearborn and the curator of paleontology were second-raters in science, though Dearborn has had a rather eminent career in public life and service. But Whitman was certainly top-flight. He was a member of the National Academy. He was an old man and a benign man, and often, after I had come in all hot and dirty from one of those flicker excursions I stayed to luncheon with him and he talked to me.

Daniel: Did you appreciate his eminence at the time?

Chaney: Yes. He was terrific. I appreciated him all right. He was different from anybody I had ever seen. A very fine-looking man, old, white-haired--

Daniel: Did you ask him questions? Did you feel you were in the presence of someone who was really a fountain of knowledge?

Chaney: I was very shy. I doubt that I had much of anything to say. I don't remember asking him questions.

Daniel: You were just thrilled to be there.

Chaney: Several years later when I was in college I had a somewhat similar experience. I knew much more by that time. While I was still an undergraduate I found a layer of iron-bearing sand up at one of the Michigan summer places where we went. I wrote to--I knew enough by that time for I had had a course in geology--a Michigan geologist, and he made an appointment to see me in Chicago when I returned. And I saw him. I was at the home of Thomas Crowder Chamberlin. Charles J. Chamberlain was the botanist who later became my teacher. Well, I was an undergraduate then and he taught only graduate classes. I had the same feeling with Chamberlin, who was a very philosophical gentleman, also elderly, much more elderly than my parents. He was, I suppose, crowding seventy. I attended his eightieth birthday party shortly before he died.

So over a space of four years, from Whitman to Chamberlin, I had much the same feeling. In fact, I could even confuse those two men because they represented to me a vastly greater amount of knowledge than I had ever met in anyone before. I had by that time seen some smart guys who knew all

Chaney: about everything, but they weren't things I was interested in.

Daniel: As you were working along, and having this inspiration, did you formulate your ideas about what you were going to do next?

Chaney: Well, I hoped--this maybe sounds a little 'smarty' --but I remember particularly that in my sophmore English composition course, that would be 1913, I wrote a theme about what I wanted to get out of a college education, the corny subject given by the teacher--James Weber Linn, a marvelous teacher and a well-known author--and I got an 'A' in the course. I got only two 'A's' in English. Well, that was two out of three, at that, because I took only three courses in college. But the subject of that theme--what I wanted to do--was to learn to recognize all the birds, trees, rocks, insects, stars, everything I could. That was my ambition as a sophmore. I was taking zoology, just beginning to get going in botany. As a junior in college I took geology. I got no instruction in high school which had anything to do with my major interest. I was taught by Dearborn in the Field Museum, indirectly

Chaney: by Whitman, by several older and very fine people that I saw, who used some scientific names though they didn't know birds as well as I did.

Daniel: Then clear through elementary and high school you were on your own.

Chaney: I was absolutely on my own, except for my mother, and a little peripheral help.

Daniel: Your sisters didn't walk with you or share your interests?

Chaney: We used to go to what we called The Woods together and they knew the common birds but weren't especially interested. They picked flowers and strawberries, of course. We used to pick flowers for Decoration Day and go to the cemetery I remember particularly.

Daniel: This was the family activity, but your explorations were on your own.

Chaney: Yes, it was almost all alone.

III. THE UNIVERSITY OF CHICAGO AND EXPANDING FIELD EXPERIENCE

Daniel: When you went from high school to college did you go to the place that you felt would give you the best training in your field?

Chaney: Yes. I didn't think very much about where I should go. We were living a quarter of a mile from the University of Chicago. The tuition was $40 a semester, and by the time I was a sophomore I had a scholarship so I didn't pay any tuition.

Daniel: As your interests expanded and you became specific in your command of the attention of distinguished people in this field, did your father have a growing interest in what you were doing as your own interests became more defined?

Chaney: The devil of it is my father died when I was twenty-seven years old and before I was really established professionally, though I was earning my living, and earning pretty nearly as much as he was. I was teaching at the Francis Parker School at the time and it was just a stopgap for me, nothing I wanted to do indefinitely. It was interesting and highly valuable. I learned a great deal

Chaney: but it simply was not anything permanent. My father never knew what I was going to do. I remember one of his friends saying that he was kind of worried about whether I'd ever be able to earn a living.

Daniel: Wasn't he aware that you were commanding the attention of men who were really quite outstanding?

Chaney: I don't think I commanded their attention. They commanded mine.

Daniel: They did have a relationship with you. Didn't your father really know what you were thinking?

Chaney: I suppose not. It's a terrible thing, isn't it?

Daniel: No.

Chaney: Oh, I think so. I think it's strictly terrible.

Daniel: Well, I know, but this goes on all the time.

Chaney: My mother knew a good deal about it, my father less. My father was an extremely hard worker. He had a pretty hard time making ends meet on what seems a pitifully low salary. It's amazing what he did with it. He was investing all his savings in some Chicago real estate which he bought, and which increased greatly in value.

Chaney: He left to us children far more than I shall leave to mine in terms of dollar value on the most--meager sort of salary, on , I'll tell you, two thousand dollars a year--imagine, four children, and he put them through college.

Daniel: But this was not unusual at that time.

Chaney: No, it wasn't. I did a lot of work by the time I was a junior. I was assisting in the zoology course, the bird course, and by the time I was a senior I was assisting in what was called 'general biology,' botany, zoology, and laboratory, which was considered a much higher-level job, although I didn't like it as well, but it paid $180, $200.

Daniel: A semester?

Chaney: They were quarters. I mean $100 a quarter.

Daniel: Four hundred a year.

Chaney: It might have been four hundred.

Daniel: Well, this was all right. You were living at home at the time you were going to college, so you just had to meet your tuition expenses, and you had a scholarship. You had to have money for books.

Chaney: Before I got through, when I was a senior in 1911, a somewhat older student sold me a camera and I

Chaney: started taking pictures. I don't think I told you this the other day. I got the bright idea of going to see the Sunday editor of the Chicago Tribune. They were running a column on birds, and it was terrible, simply terrible--it was a lot of bughouse folklore. I went down and told him so. Burns Mantle, the dramatic critic, was with this editor. I now realize he was just a young punk himself. So he said he would give me ten dollars a week for writing a certain amount, I suppose five hundred words, maybe more, and two or three pictures. So I went out every week for about ten, maybe twelve weeks the year I was a junior in college and took pictures. It was a very long walk. The whole day was consumed. Then of course I had to write up my story, develop my pictures, make my prints, and take them down to the Tribune in the Loop--all for ten bucks. It's really amazing. But it was big money, terribly big money.

Daniel: The interesting thing is that you were applying what you were learning.

Chaney: I was already a pro, you see.

Daniel: Did the people with whom you worked in the University live up to your expectations?

Chaney: They failed me here and there because they were more interested, no fault of theirs, in laboratory work than in field work, and I was interested in field work.

Daniel: Was this true in general of the sciences, more interest in the laboratory?

Chaney: Yes, in those days. My professor, still living, Professor R. M. Strong, whom I've seen within the year in Chicago, a very old man, was interested in field work, but even he was primarily interested in bird anatomy. It's a little arrogant to say so, but I knew more about live birds than he did.

Daniel: It isn't arrogant at all.

Chaney: He knew more about the insides of birds than I will ever know, but I knew birds in those days better than I have ever known anything since, even my present field. I had complete mastery of it. It was, I suppose, in terms of one's growing up, a wonderful thing to realize, although I didn't go around singing my own praises, as I am now, but it was probably a good thing to realize, when somebody else was with me, that I

Chaney: knew as much or more than he did, usually more than most of the people who were with me.

Daniel: You were developing a subject at this time, you see.

Chaney: I have never used it, except for fun. I was told, and I believed it, that there was no future in it. There would be now in national parks or in zoology departments, but in those days there wasn't, and I could earn a meager supplement to my living by taking rich kids out on Saturday mornings or this Chicago Tribune thing. I suppose as an undergraduate I may have earned a total of $1500. That's a fairly high estimate.

Daniel: Yes, I know, but it was still quite a bit of money.

Chaney: And it was all professional. It was income from the field in which I had excellence.

Daniel: It never occurred to you that you were doing something you shouldn't be doing. I mean, from the beginning your interests marched right along--

Chaney: Well, it was what I wanted to do, and--

Daniel: And there was no question about it.

Chaney: My father never discouraged me and my mother

Chaney: actively encouraged me. I know my father would have been glad to have seen me become a lawyer.

Daniel: This was the age--

Chaney: I clerked at Marshall Field's retail during Christmas vacations and before Christmas. I would duck out of school early and make a dollar and a quarter a day--just imagine, paying carfare and lunch --well, anyway, a dollar and a quarter a day, and I was real good at it. I was in the basement in notions. I outsold most of the regulars there-- I was an eager beaver in my first job--I had a wonderful time. They wanted me to stay and wanted me to come back when I got through college, but of course it was a terrible jungle from my standpoint.

Daniel: And it never occurred to you to do anything but what you really wanted?

Chaney: I changed from ornithology to botany as I got to be a junior and then I changed to geology. I had scholarships in all of those subjects.

Daniel: How about the transition from one to the other?

Chaney: It was natural. Geology <u>is</u> botany and zoology, that is, the paleontology side of it is. I've always been a paleontologist. There was no break at all. The breaks were in French and trigonometry

Chaney: and that sort of thing, which had no immediate, no apparent usefulness to me. Of course they were useful and I was foolish not to study them more.

But I took, in those days, all the science I could take. No one would get away with it nowadays in any university. I slighted history and never took a course in philosophy or economics, for example, never in my life.

Daniel: Well, this was true of the curriculum at this time.

Chaney: I was just soaking up science. I had enough to graduate in botany, probably nearly enough in zoology, and I graduated in geology. We had undergraduate majors.

Daniel: Actually, did you feel any lack as your life went on?

Chaney: Well, my wife is a historian and an economist and so I've picked it up from her, and you have friends, naturally, and reading. It would have been better--but--

Daniel: Well, why better? You did get this in some other way.

Chaney: I'm satisfied not to have had the philosophy because it seems that most of it is just semantics,

Chaney: or anyway whatever it is. But the economics--I had political science, terribly dull, and a course in history, extremely dull, yes, it was the wrong kind of history, and there was a longwinded talker, and I was the wrong sort of student.

In fact I got A's in all my sciences and B's or C's in all my other subjects.

Daniel: And you had no inclination to explore except in the fields which interested you?

Chaney: I never took any courses except those required, outside of science.

Daniel: You had a definite interest which carried you on outside the framework of your elementary school and of your high school. You took the things in college which you really wanted to take. You manufactured your own curriculum?

Chaney: Certainly from the time I entered high school I pushed everything else aside. In high school I was regimented and I studied my Latin religiously and always got superior grades--'90s'--I think there were numbered grades then, and always had my grammar cold, which was a good idea. I wish I'd studied more language--French and German--but I didn't, but I can manage.

The only thing I was really interested in was

Chaney: getting outdoors and I did it, except in the coldest parts of the winter and on rainy days, every day of the year. My records would show three hundred days a year.

Daniel: As you went along through the university did you consider consciously what you were going to do?

Chaney: I had several extremely good teachers: John M. Coulter in botany; Rollin D. Salisbury in geology --they were outstanding teachers. And a less formal, but even more stimulating man, Henry Chandler Cowles in botany and ecology, gave me the first concept of ecology, which has been, of course, my guiding star, my major interest, and was even then, though I had never heard of it before. Cowles was a marvelous field man. He was exactly what I wanted. That was when I was a junior, or a senior, I can't be sure, in college. At any rate, those three men are the three men who affected me most: Salisbury was a very exact man, a martinet, the pouncing type; Coulter was benign and orderly and his lectures were beautiful things, the way he developed a subject, the organization; Cowles was an expert field man, extremely well organized, too. His lectures and

Chaney: field trips were much less formal. In fact, my relationship with him was wholly different than with the other two. They were at a distance; Cowles was very close.

Daniel: You had a bachelor of science, I presume, at the end of your university work?

Chaney: Yes, and I was given a scholarship paying tuition for the next year.

Daniel: For graduate study?

Chaney: For graduate study. So I went to the university a fifth year, taking geology only. Incidentally, my physics and chemistry I enjoyed very much, especially chemistry, and did A work. Well, they were completely off the beam (in terms of these subjects today), but they were beautifully taught courses, especially one course in chemistry. Physics was not so well taught. But I got fundamentals in the physical sciences. Never enough mathematics, unfortunately. But I haven't really missed it. I think that mathematics and statistics should both be hammered down everyone's throat. But I was too busy with geology to take all the math I should have taken. Fortunately I did take plenty of chemistry and an adequate amount

Chaney: of physics, barely adequate. As a fifth-year student, a first-year graduate student, I was going into geology.

That summer, the summer of 1913, I went to Alaska with the U.S. Geological Survey. I had taken the civil service examination for geologic aide and failed it by a point or two. There were a limited number of people wanted. They took a few of the best and failed all the rest of us. I failed it anyway--I'm not giving any excuses. But I was the only one of our group that got a job. There just weren't many appointments that year. I was appointed to do geologic work but with a cook's rating, which evaded the civil service requirement. The head of the party knew me and wanted me to go with him. It was one of those amusing things. It didn't matter whether I passed or not. Well, it's very poor philosophy for the young and I haven't told my children about that.

Daniel: I don't know why you say that.

Chaney: I think they should pass their examinations.

Daniel: You'll never know how the examination was arranged.

Chaney: There's no discredit in failing it. The passing grade was 70, and I got 68.5 or something like

Chaney: that. Nevertheless, it's a blot on my record.

Daniel: It isn't at all. I think it's an ornament. Now we'll go on from there.

Chaney: That brought me to the Pacific Coast and through the Inland Passage on the "Admiral Simpson," the famous old ship. There were several professional geologists on board, some of them not so very much older than I, some of them much older, some very eminent men. They're almost all dead now; Brooks, and Martin, and Sargent, and Kapps; well they're all gone long ago; wonderful men. We packed in to the Matinuska coal field and made a detailed map. It was very hard work. That's the region, the Matinuska valley, where the settlement was made, the agricultural settlement where there are very beautiful farms nowadays. There were no roads then. We packed in with ten or a dozen horses, and I saw my first bears and moose and mountain sheep, and ate most of them at one time or another. At Knik, a frontier town that is completely gone I am sure, we stayed at a roadhouse which had accomodations for forty men and a hundred dogs--according to the sign outside. It was very crude. There would be a platter of moose,

Chaney: an enormous platter of chunks of moose steak, which were mostly tough.

It was primitive and very glamorous as you can imagine.

Daniel: Was this your first experience away from home?

Chaney: No, my first one was at the end of my junior year when I went out to South Dakota with the South Dakota Geological Survey. That was the West in a limited sort of way. There were new birds: western meadowlarks and different flycatchers and so on, and I rode a cow pony for hundreds of miles --from halfway across South Dakota to the Black Hills and back again.

It was a natural history survey. We were collecting birds and plants and stuff. It wasn't very well-organized or important. The man in charge of it was this older man, who had been birding with me in the old days. I see him still. He teaches at the University of Indiana, but that's of no consequence here.

Daniel: But your excursion then was your first step?

Chaney: Yes. The summer I graduated (a year later) I went to the Rockies on a geology field trip for about a month or six weeks, so I got to the Rocky Mountains

Chaney: the next time.

Alaska in 1913 was my first sight of the ocean, the first sight of tides, the first sight of spruce trees in any number, so it was a marvelous experience.

Daniel: Very rich.

Chaney: The only other one comparable was my first trip to Asia in 1925.

Daniel: It opened up a new world.

Chaney: The angle of intake was like that (indicates wide angle). But the Alaska trip was wonderful. We stayed until it snowed. I got back too late to get into the university. That's a strange thing. I may be a little mixed on my dates, but I'm sure that was the summer of 1913.

Anyway, after that trip I knew that I wanted to be a geologist and do field work. I knew then numerous men who were doing field work in the summer and teaching. There were only three choices: one would be a geological survey, which didn't appeal to me very much; another was teaching; and another was oil geology. That was in the big boom of Venezuela and we had a teacher, a Californian from Stanford, Ralph Arnold, a very eminent man--

Chaney: still living, I'm sure, although I haven't seen him ever in California. Ralph Arnold taught a course at Chicago in oil geology, and almost all of us who were in the class and did good work had a chance to go down to Venezuela with one of his companies as oil geologists. That was a promising alternative, but when it came along my father was mortally ill and I didn't want to leave, and by the time he had died and I was free to go I was getting involved with my present wife and so I was leaning more to the education side of it as the best of the three alternatives. Oil geology paid very well; I would have had $250 a month, and my first job in a university was $1600 for ten months.

I put in another year--the year 1913-1914--studying mostly invertebrate fossils.

The 1913 summer geological survey job took me to the ocean for the first time and I realized how little I knew about the fossil invertebrates that I had been studying. It also took me into the Matinuska coal field where I saw my first plant fossils. The first experience emphasized my lack

Chaney: of knowledge of things marine, as I was an Illinoisan, and the other, the discovery of plant fossils in the Matinuska coal field, fossils of the general sort that I've been working with ever since, that is, the later Cenozoic Age fossils.

Daniel: You viewed a new field, unknown to you.

Chaney: I had no instruction in it. There was no paleobotany in Chicago in those days, and there was very little mention of it in the textbooks. Some, but not as much as there is nowadays.

Daniel: You apparently developed a burst of interest in this subject at this time.

Chaney: Well, I liked botany better than zoology. Also, I had received, as I told you last week, a terrific inspiration, really a soul-stirring experience, with Henry Chandler Cowles, with whom I took two courses, two or three, and he took us off on field trips. For the first time he got me in touch with environment as a controlling factor in life, ecology, in other words. The ecologic idea interested me from the very start, and plant ecology interested me more than animal ecology, though Victor E. Shulford was then my teacher in animal ecology at Chicago, and was a man whom I

Chaney: knew and liked very much. I used to assist him in class, running the lantern and that sort of thing, so I learned quite a bit about animal ecology, but land animals have the unfortunate habit of moving around and getting out of context; plant fossils are rooted in the ground. They can't escape, and where they are found, that's where they belong. So plant ecology has always had some advantages, although obviously we couldn't do without both of these fields in any real analysis of ecology.

I use animal ecology whenever I can. For example, in my latest paper I have a long, for me, theoretical discussion of the place of grass on the borders of the deciduous forests in the Miocene. (This is in Oregon. We're fully away from Alaska, and I'm talking about the use of animal ecology.) All right, in the adjacent deposits there are any number of grass-chewing horses, rhinoceroses, oreodents, various of the herbiverous mammals which must have had grass, and yet there's very little record of grass in the rocks. I went back to Daniel Boone's discussions

Chaney: of the undisturbed grasslands of Kentucky and Illinois when he came west--Boone and others. I have pieced together such inferences as can properly be made in a scientific paper and have concluded that on the uplands, above the forests and gullies there may have been flats, tablelands with grass. Later this was confirmed by the finding of pollen in the lowland deposits. One of my Ph. D. students later found pollen and confirmed the presence of grasses quite definitely.

Daniel: Well, this is all part of the development of your choice of paleobotany as your field, and I think you've brought out quite clearly the inspiration, on the one hand, and on the other hand, the inclination to work in a field which has a definite framework.

Chaney: I had talked to one of my fellow students, at least six years older than I, who by this time was married and had a child. He was teaching at the University of Washington.

He came back to the University of Chicago about 1915 while I was teaching at the Parker School. He was a good friend and sympathetic, and when he

Chaney: went out to Oregon with a field class in the summer of 1916 he told me he would look for fossil plants. I'd expressed a great interest in them. Before very long I got an enthusiastic letter from him saying that he had found a deposit on Eagle Creek in the Columbia River gorge which contained what he thought were excellent fossils.

So I got together the necessary funds (they were my own funds) for a trip to Oregon.

Daniel: Was this the first trip?

Chaney: That was in the summer of 1916, yes, the first trip on a fossil plant quest.

I spent a few days looking by myself and then was joined by Bretz, J. H. Bretz, who is still a good friend, and he took me to the very fine locality which supplied material for my Ph.D. thesis. He knew nothing about fossil plants. I knew a lot about plants--for example, I found a black oak--which I have here--which is the first good fossil I ever found.

Daniel: This is it? (fragment showing imprint of oak leaf)

Chaney: This is it. I call it the "oak of the covenant." We keep it in a sacred place.

Daniel: It is a beautiful thing.

Chaney: It is. This oak and the leaves that went with it were the basis of my first writing, a little paper in the Journal of Geology. I was facing the prospect, as were all the men of my age, of going into World War I at that time, so I hustled through a paper just to cash in on my results of the summer's field work in case I had to leave, in case I never came back.

IV. SCHOOL TEACHING AND GRADUATE WORK

World War I: 1914-1918

Daniel: What was the source of funds for your trip to Oregon?

Chaney: I paid for this trip myself. I was teaching at the Parker School, and had some money.

Daniel: Was the Parker School a secondary school or a college?

Chaney: It was from kindergarten through high school--thirteen grades.

Daniel: How did you happen to be there?

Chaney: I was recommended by my professor, Professor Salisbury, who was considered one of the best teachers in the world, and I guess he was. He thought I was a little nuts, I guess, with my interests in birds and plants, rather than in invertebrates and rocks. I was interested in all these things. He told me I'd never amount to very much, so perhaps he thought it would be a good idea to get me into this rich kids' school.

Daniel: This was a private school?

Chaney: Oh, very much so. It was subsidized by Mrs. Emmons

Chaney: Blaine, the wife of the harvester--the McCormick Harvester and Reaper--that family, a very fine woman.

Daniel: Was it a large school?

Chaney: No, it was a school of about 500, 400 or 500. It's a little bigger now.

I was in charge of natural science there in all the grades. I was there three years. I organized the curriculum. At least I recommended it to the teachers. We had a sequence of subjects and figured out what was best at the outset and what was best to finish with. I taught the high school curriculum courses in science, the general sciences, we called it then, a mixture of biology, physics, chemistry, and meteorology. That was for three years following 1914, and I made good pay, about $1600 a year, which was marvelous. I commuted from the South Side up to the North Side.

One other thing I did was take these kids on field trips. There were enough wealthy kids so that there always were motor cars. We would go to all sorts of places: to a big dairy farm, or to a forest somewhere, or out on the beach to see

Chaney: erosion, or out looking for birds, or to the stockyards to see some of the manufacturing processes.

Daniel: This was unusual at the time, wasn't it?

Chaney: Yes, it was. I'd never had a field trip in my life until I got to college, but here kindergarten children were taken on field trips.

On the whole the teachers and the principal were high-minded, idealistic, extremely competent people. It was fast company in terms of my years. For instance, the Parker idea of motivation is now what they call the activity program--oh, there's another word in the jargon for it now. Anyway, motivation meant to have a reason for doing everything.

Daniel: This is motivational psychology.

Chaney: Well, Colonel Parker was the originator of it, in writing at least. His followers were many and this school was founded by Mrs. Blaine so his ideas could be taught, and they still are taught.

Daniel: Did you have any idea about the extent to which your work in this school might have had influence on curricula in other schools of the area.

Chaney: We had a profound influence on curricula all over the United States.

Daniel: Let's hear about it.

Chaney: We had a series of publications. I have a long report in one of them. I don't suppose I even own it any more. I haven't seen it for years. There would be a curriculum of teaching in history, a curriculum on teaching of science. For all I know, these were both in one of these volumes. I'm sure science wasn't a complete volume.

We put forth our ideas--not only my own rather simple ideas, because I was just a kid myself, I was 24--24 to 27 years old.

Daniel: How did you happen to bring these to publication?

Chaney: It was done by the school.

Daniel: And did the school always do this or did this seem to be a good idea of something unusual worth publishing?

Chaney: They did it while I was there. Whether they're still doing it I don't know. I suppose they are. These manuals of education have played a very important part. I think there are perhaps better sources now, but in those days this was pioneering.

Daniel: Who subscribed to the manual?

Chaney: I suppose they were sold. Maybe they were given away. I had nothing to do with it. I was a junior

Chaney: member, one of the youngest members of the staff. Many people on the staff were old enough to be my parents, fine, old, and not dried-up teachers. They were almost all of them first-class. There was music of the finest sort including special programs by first-class musicians who may have cost a hundred dollars, a fabulous amount in those days to get out to the school. There was drama by first-class coaches and plays were put on--a Christmas play, and all sorts of plays.

Every morning, it was at ten o'clock, I guess, there was what was called a morning exercise when the whole school, as much of it as could be got into the auditorium, appeared together for a program. Frequently, very frequently, I was emcee for those programs. Whenever a program failed, as it occasionally did, I was, so to speak, in the wings to go on extomporaneously and put on a show.

We always had what were considered important visitors. There was scarcely a day that I taught that there weren't visitors in my room--which was kind of rough for a young kid--from all over the United States.

Daniel: This, in other words, was rather an example as a school.

Chaney: It was a model school, a modern school with modern methods. I am sure that if we wanted to do so we could find out from the Parker School how many of their publications have been issued, we could get a report on their visitors, perhaps over a period of forty or fifty years, the numbers and the places. It would be a very compelling record.

Daniel: While you were participating in a teaching experience, you reached far beyond Chicago, developing your specific interest in fossils and paleobotany. It seems to me quite a complicated arrangement of ideas.

Chaney: I would teach there during the daytime, leaving about seven or a quarter to seven, get over there about eight, get through about two or three, go back to the South Side, where the University is located, and do a little work before dinner--had dinner with my girl friend--who is now Mrs. Chaney--and then work in the evening on my fossils.

Daniel: At the same time you were preparing to qualify for the Ph.D.,weren't you?

Chaney: Definitely moving toward it, yes.

Daniel: You were handling this very complicated existence, apparently quite handily.

Chaney: There's one more very comical thing that happened to me in the summer of 1915. I hadn't been drafted yet. There was a lot of talk about the need for agriculture, and I was a little fed up with paleontology, that was before I really got into paleobotany in 1916, so I went down to an employment agency down on the bowery of Chicago wearing old clothes,and hired out as a farmhand and went to work on a farm doing farm labor. I wasn't doing it, please be assured, for strictly patriotic reasons. I had in the back of my mind the fact that I might want to be a farmer. I had always been interested in animals and plants from a food standpoint and from a crop standpoint, too. Also, although I may not have realized it, I think I did though, I picked a place in Illinois near where my ancestors had settled, the same farming area. But I decided I liked geology better after that summer. You see, I was feeling around and it cost me nothing and I made a little money, even, and I strengthened my shoulders tossing bundles.

Daniel: Your studies there were in abeyance at this time, weren't they?

Chaney: That was during the summer, the summer of 1915.

Daniel: And you didn't have summer sessions?

Chaney: I didn't that summer, no.

Daniel: I think it might be interesting to consider the war in this period.

Chaney: That was the summer of 1914. I was down in Missouri working for the Missouri Geological Survey --invertebrate paleontology--

Daniel: How did you always slip into these geological survey jobs? Had you established a reputation?

Chaney: Well, different people had asked me to go. Stuart Weller, my professor, asked me to go on this. He was working there for the Missouri Geological Survey. It was a great place for fossils. So I had been there--it was August, wasn't it, when the war started?--I had been there for nearly two months when we got an old newspaper with the news of the war. There was no radio, of course, no other source of information.

The fact that the Germans were marching on Belgium, or whatever it was--I don't remember how the war started--was appalling, of course, because we had been raised to think that war was obsolete.

Chaney: All my lifetime I'd known only the Spanish-American War, which wasn't much of a war.

Daniel: It had been a peaceful time.

Chaney: It was. It was the finest time that I can think of to live in, in terms of security.

Daniel: The Spanish-American War was rather romantic, wasn't it?

Chaney: Superficially. I'm sure the boys who went, and who died of yellow fever, malaria, or whatever--for them it was a serious matter--but it wasn't much of a war. The Spaniards were greatly outclassed in every way.

Our neighbors went. I was in the third grade in 1898 when the troop trains came back. I remember the teachers let us out and we ran over to the tracks, which were only a hundred yards away, and waved at the men coming back presumably from New York to Chicago and then on west to wherever they were going. That had been my only contact with war, and as you say, it was a glamorous sort of affair. Nobody I knew got killed. This little cousin, hundred-year-old cousin of mine in Oakland, was in Puerto Rico. He got malaria. He told me some tall tales about it, but it was a

Chaney: pretty tame war. I hope he never hears this record, because he thinks it was a wonderful war.

Daniel: There was a great contrast between the Spanish-American War and the first World War.

Chaney: When the Teutons started marching across the lowlands of Europe that was really war. I went back to Chicago in September to a new job at the Parker School, a job for which I would not have been deferred, because it was not an essential job. I signed up for selective service.

Daniel: What about selective service? Did this bother people very much? At the time Theodore Roosevelt seemed to feel he could bring a volunteer group together.

Chaney: I don't remember anyone objecting to going. Many of my friends went as members of the army, of the infantry or the engineers. Now, I would have gone but by the time we got in--in 1917 wasn't it?--I had a job teaching in an officers' training program. I was teaching them military mapping, based on my work in Alaska, incidentally, (laughter) I haven't thought of this in years: A very wealthy man, member of a wealthy Chicago family, wanted to be sure to get into the officers' training

Chaney: school. He hired me to take him out with my mapping equipment for a couple of weekends. I think I made fifty bucks a day, some fantastic amount, showing him just how to map. I never heard whether he passed or not, but I hope he got his hundred dollars worth. Anyway, how I got the job I haven't the faintest idea.

The fall of 1917, when the war was getting hot, my number was up. I was at the University of Iowa teaching a course in military mapping and several other courses which were in the curriculum for officers.

Daniel: How did you get over to the University of Iowa?

University of Iowa - 1917-1922

Chaney: I'd been at the Parker School for three years and I had my thesis well in hand. I wanted to get married and did in 1917. Also I wanted to get out of teaching in high school and into a university.

It was all right professionally to teach on the North Side and to do my research on the South Side, but I took an awful beating. I was able to get from the University of Iowa just the same amount as I was getting at the Parker School. I had a lighter teaching schedule, fewer responsi-

Chaney: bilities, although the responsibilities were higher level responsibilities. So I went to a Geological Society meeting and met the chairman of the department at Iowa, and he asked me if I was looking for a job. I said I might be, so he wrote me in the following spring, and the upshot of it was I took the job.

Daniel: This placed you in a new circle of teachers and students. Do any interesting faculty personalities come to mind?

Chaney: The University of Iowa was an exceptionally fine place for a start in university teaching. Several of the older men, Kay, Thomas, Trowbridge, in the Geology Department were fine teachers, and standards were high. I learned a lot from them. The University was small in 1917, and so was the town of Iowa City. We had no car, but went for long walks in the adjoining country. Nearly everyone went to church, and so did we. I have sometimes wondered since how I might have turned out if we had stayed there. There was a pious air--smoking was frowned upon, and drinking was not even mentioned. Perhaps it is just as well that I left for the dens of iniquity of Berkeley in 1922.

level

Chaney: But the five years at Iowa were happy, and I learned a lot.

Daniel: What did you contract to teach?

Chaney: Geology, just geology.

Daniel: And then, of course, you were put into the army courses as the need arose.

Chaney: Yes. I taught the specialized courses and one of the general courses for Letters and Sciencegirls and the men who were still there. I taught most of the special classes. Students were decreased in number; I had a very heavy schedule. Most of the classes were for these young boys who were in the army, who were wearing uniforms, just like our boys.

Daniel: Yes, just like the training program during the Second World War.

Chaney: So when my number came up the university asked for my deferment, and I never was considered again. In other words, I did not participate in the war. I had been in the National Guard about 1913 and 1914 in Chicago. I organized the University of Chicago graduate students' troop, mostly geology students. I was a member of our graduate fraternity, Gamma Alpha. It had chemists and physi-

Chaney: cists and biologists in it, too. Quite a number of us were in it. That was a cavalry troop, but nothing came of it. I think, as a matter of fact, there was a lot of trouble in Mexico and some of our boys went, but I didn't.

Daniel: Your contribution in the first war was in teaching special courses for the military.

Chaney: Yes, well, there wasn't anybody else at the university who seemed to be ready for it.

Daniel: Did the work there allow you to continue your thesis?

Chaney: Yes, I had my summers. Oddly enough, I'm sure this is true, there was no summer school for soldiers. How they managed that I don't know because we always had summer courses here in the second World War. I worked nights and vacations. The buildings weren't heated, but I got a university truck to carry my specimens home and put them in the big kitchen of the house we were living in and worked on them.

Then I went back east in 1916. That was before I went to Iowa, to the National Museum to compare my plants with others from about the same and adjacent areas. There I met Dr. Frank H. Knowlton,

Chaney: a paleobotanist who did a great deal for me in Washington; Dr. Arthur Hollick, in New York; Dr. Berry at Johns Hopkins. There were various others.

That was my first trip to Washington, and I certainly was a hayseed. I went there without any hotel reservations. In fact, it had never occurred to me to get a reservation. I walked up Pennsylvania Avenue until I came to a sign and went in and got a room for a dollar, probably in a flophouse. The building is no longer there. The National Art Gallery or something is in that general area.

Then I moved from there and lived in a house, one of the many houses that had roomers, for a very, very low price, fifty or seventy-five cents a night. I was on my own, paying my expenses.

Then I went up to New York. On the train I met a somewhat older fellow graduate student in geology, a rather staid individual. I was certainly happy to see him because I was all excited about landing in New York after dark all by myself. We found a cheap hotel and went out to see the town. We wandered into a theater ticket office. By that time it was a quarter past eight. The man said, "I

Chaney: have tickets for such-and-such a show. I'll give them to you for half price because the curtain goes up in fifteen minutes." Well, we stood there trying to make up our minds, not having much money, and finally we talked to him until 8:30. So this fellow said, "Listen, you rubes, I'll give you the tickets now!" (Laughter) By that time we were so scared we didn't even take them. It's unbelievable, but we beat it. We thought we were in the dens of sin. So I never did get to go to that free show.

But I went up to New York not to go to the theater but to go to the New York Botanical Gardens where Dr. Hollick was, and where I saw some other things of great interest. The National Museum in Washington, D.C., the New York Botanical Gardens, and the Arnold Arboretum in Boston are places where I have spent hundreds, oh, many hundreds of hours in the past thirty or forty years.

Daniel: Well, you were actually opening communication with other people in your field.

Chaney: Yes, these good friends, all dead, were in a systematic stage of paleobotany. Just about all they did was describe the plants they found, identify them,

Chaney: and indicate their age.

My first little paper, written when I thought I might have to go fight for my country, was, I suppose, the first paper in America, written solely from the standpoint of ecology, interpreting the plants in terms of environment. All my life, my interest in plants has been not in plants as species, but in plants as members of forests.

Daniel: Relating the plant to everything else around it.

Chaney: Vegetation in terms of topography, climate, animals that eat it. My first little paper was based on this oak. My argument, as I look at it now, was not altogether sound. No one has ever refuted it, at least. That oak was a member of a slope forest; therefore, there must have been an irregular topography. I set out to find it and did find irregularities. I remember this vaguely because the paper isn't any good in terms of today, but it was the first thing I did and I think the first paleo-ecological paper, at least in any such detail. I don't know of any at all up to that time. Anyhow, it was fun, and it was the sort of thing that I've done ever since.

Daniel: Well, you might call this gumshoe paleobotany.

Chaney: My older friends were concerned with the 'what' of it, what kinds of plant is it, and the 'when' of it, when did it live. But I was concerned with the 'why' of it, why was it there, and whence and wherefrom--the distribution part of it. Distribution and paleoecology have been my interests, my only interests in paleontology, though of course I've had to do a vast amount of systematic and stratographic work, because we have to know what we're talking about and when it lived.

Daniel: Darrah puts forth what he considers to be the challenges of paleo--

Chaney: It was in his book, wasn't it?

Daniel: Yes.

Chaney: He was pretty vague. He was an interesting fellow, young and good-looking, somewhat effeminate, and as it turned out, not wholly honest. As a youngster, in his mid-twenties, he got the job at Harvard and began writing a textbook which is the book you saw. It came out around 1939. It was Darrah's hard luck that I was ill at the time, the only time I've ever been ill. He sent me a copy,

Chaney: and I read it carefully. Naturally, I turned to the chapter on tertiary floras, the plants I'm interested in, first. This fellow is marvelous, I thought, the way he expresses himself, the lucidity of his ideas--I couldn't have done better myself...I did it myself!

Daniel: Oh, good heavens!

Chaney: The book was a series of plagiarisms. It cost him his job. I was only one of the hundred people he plagiarized. Two chapters were almost word for word without pause--my stuff. He was smart. He wrote to everyone and said, "I'm going to write a book. May I quote such-and-such an idea?" And he put quotes on that, and then he quoted everything else, but without the quotation marks and without credit.

It cost the poor boy his job. If he had been honest--but he was so dishonest I figured I should smoke him out, which I did.

Daniel: He disappeared from the field of paleobotany?

Chaney: Yes. He has some sort of job in coal geology and occasionally writes a paper, but he was rather superficial. All the good in his book was already

Chaney: in print. He brought it together, of course, in a sense that's what a textbook is, but he did it without proper citation. It's comical though, reading my stuff and having the notion gradually come on me that it was my stuff, not his. I would catch a phrase, and then the conclusion--

Daniel: This is known, in vaudeville, as the slow take.

Chaney: Yes, it was. It was most amusing, of course, and an annoying experience. I wrote to my friends at Harvard. They defended him to some extent. They said that he had notes on various people's papers for use in his lectures and when he came to write his textbook he copied his lecture notes into his textbook.

Daniel: Suppose we get back to your work and to completion of requirements for the Ph.D.

Chaney: That was in 1919, when I'd been at Iowa for two years, the summer of 1919. That meant meeting requirements from geologists; the junior Chamberlin, that is Rollin Chamberlin-- T.C. Chamberlin was still living but did not attend-- Bretz and Salisbury in general geology, Weller in pathology, and Cowles in botany. There was no one in paleobotany because they had no courses.

V. CARNEGIE INSTITUTION RESEARCH FELLOW AT BERKELEY

Paleobotany in the West

Chaney: My paleobotany was a synthesis of botany and geology, which is all it is anyway.

Daniel: Was this true in general in curricula throughout the world in this field? Paleobotany became a concept as it grew from geology and botany?

Chaney: Yes. The invertebrate paleontology had long been important because it has so much value in marine sediments for dating. But plants are in terrestrial sediments and in the area where I lived, at least, from Chicago eastward all fossil-bearing rocks are marine. Southward down the Mississippi there are terrestrial deposits, but I had seen none of them, never have seen them. We lived in a marine area and invertebrate fossils were the only important ones.

When I came out here to Berkeley, to the West Coast, it was to an area which had, in addition to invertebrates, the vertebrate fossils which Camp and others have worked on, and the plants which I had worked on. So we have a much broader picture

Chaney: of paleontology.

The department was reorganized in 1931 when I became a member of it--the chairman. It was the first department in America which had an active course in all three fields.

Daniel: Apparently an accident of surroundings determined lack of study in paleobotany before this time.

Chaney: The eastern United States was an area of marine rocks. Trilobites and brachiopods and corals were important, but there weren't any land plants. But out here, J. P. Smith of Stanford, a marvelous man, and John C. Merriam at the University of California, another great man, were both interested not only in their fields, animal paleontology, but in fossil plants. It was along about 1918, maybe 1917, that I met Merriam at a scientific meeting and I sent him my paper, the paper on ecology. All his life he had been waiting for somebody to work on paleoecology.

So the first thing I knew--in 1920--he offered me a job at the University, which I didn't take.

Daniel: How does this tie in with your Carnegie research?

Chaney: It does a little later.

Daniel: You were not first a member of the Carnegie research group?

Chaney: No, I was at the University of Iowa from 1917 to 1922. During that time I met Merriam and he offered me a job, and then he said, "Let's wait a little." At that time he probably knew that he was going to be the president of the Carnegie Institution. That's the tie-up. But he wasn't yet. So he said, "Instead I'll send you money for field expenses. I want you to come out to the John Day Basin this summer." So this time, instead of riding in a day-coach on my own expenses, I spent $450 to $500 of research funds from the University of California--my first.

I had a marvelous summer and met several of the men: Chester Stock, Eustace Furlong, and John Buwalda, with whom I was to be associated through all these years. They are all dead now--and Merriam. I'm the only one of the quintette still living.

Charles W. Merriam, J.C.'s second son, is an invertebrate paleontologist with the United States Geological Survey at Menlo Park. I see him fre-

Chaney: quently, but then he was just a youngster. Of the grown men of that group I'm the only survivor. It gives me a very queer feeling.

Daniel: You said that Merriam offered you a job and you didn't take it?

Chaney: I didn't take it because, actually, he sounded me out on a job. Before a decision was reached he said he thought we had better wait a little while. He was thinking about Carnegie. When he went to Carnegie he immediately, or even in 1921, wrote and said he wanted me to be a member of the Carnegie Institution staff, quartered in Berkeley on the University of California campus. He was planning for me, you see, in advance.

Daniel: You were listed in the Carnegie roster as an individual doing research.

Chaney: Yes, research associate.

Daniel: But you didn't work in Washington ever. You came straight on.

Chaney: No, I was on the campus throughout, from 1922 to 1931.

In 1927, Chester Stock went to Pasadena, or it might have been 1926, and I taught his course once or twice as a special arrangement. In 1930, W. D.

Chaney: Matthew, a marvelous man, who came here from New York, became fatally ill and I finished his course in the fall. He had started it. I finished it. He died before the end of the semester. I taught it the next semester and by the end of the year I had been appointed a regular, so in 1931 I went on as a regular University staff member.

Daniel: You also had a title with respect to the museum.

Chaney: Yes, I was curator of paleobotanical collections during all that time.

Daniel: Is there more background about your coming to the University?

Chaney: I continued at Iowa until 1922, but the summers of 1920 and 1921 I came out here, and with University of California research funds I laid the groundwork of all the paleobotanical work I've done in western America ever since.

I visited several scores of localities in Idaho, Montana, Washington, Oregon, Nevada, and California. For the first time I traveled around in an automobile, collecting. These collections are still a very important part of our study material here, though they have been added to many times since.

Then in 1922, when Merriam was in Washington

Chaney: with the Carnegie Institution, he said that for a time, at least, it would be better for me not to teach at the University, as he had originally planned, but to come here as a member of the Carnegie staff, without teaching responsibilities, so I could devote all my time to research.

I came to Berkeley in 1922 as a research associate of the Carnegie Institution, refusing a position with the University, a teaching position, because it seemed better to spend all my time on getting paleobotany established. It meant that I could go into the field at any time of the year I wished instead of being held in Berkeley by classes. As a consequence, I had a lot of field work, brought together a very large collection of materials which I have been using and others will be using.

Daniel: However, you were an associate in the University.

Chaney: I had an honorary relationship and sat on Ph. D. committees.

Daniel: But not as an official?

Chaney: I had received no salary from the University. I simply had quarters. The Carnegie Institution

I had an honorary relationship and sat on the D.
committees.

Chaney: favors that arrangement, at least it did at that time. There were many people, including several others on this campus in other disciplines, who were Carnegie staff members but who had the hospitality of various departments.

Daniel: This arrangement was developed by the chairman of the Department of Paleontology?

Chaney: Well, actually, oddly enough at that time there wasn't any Department of Paleontology. It had been run into the ground. There was a museum of paleontology. It was the Geology Department. When Matthew came in 1927 the department was reorganized. Geology and paleontology were once more separated in 1927. They had been separated from about 1910 when Merriam founded the Department of Paleontology for administrative reasons. Around 1921 or 1922 they were merged because there was no one in paleontology who could be chairman. The men in there were not strong enough men to handle it.

When Matthew came he was definitely competent. The Department of Paleontology was reorganized and ever since there has been a department. I'm in-

Chaney: clined to think it was a mistake because paleontology is a part of geology, but that's the way we have it here.

Daniel: This is in line with fragmentation of other departments, isn't it?

Chaney: That is the tendency at Berkeley. Time will tell whether it is wise or not. Dividing up subjects has disadvantages, but there are administrative advantages. For example, a very considerable amount of funds from outside sources were given for paleontology. The only way to be sure that geology wouldn't get some of them was to have a wholly separate office or a separate department, which is the reason 'way back forty years ago, nearly fifty years ago, why this was done.

The present trend in geology is toward physical and chemical geology--geophysics and geochemistry is a better way of putting it. And that takes them still further from the life side of paleontology science, so it may well be that we have this fragmentation. I have no mature opinion about it. In general I don't favor it. It brings in more difficulties than it solves. But anyhow that's the way we do it.

Chaney: While I was around here in the twenties I was associated with the Geology Department and the Museum of Paleontology, just as there's a Museum of Vertebrate Zoology, from the same source of funds, incidentally,so there was a Museum of Paleontology.

Daniel: Administratively the Museum was not under the Geology Department?

Chaney: It was wholly separate, yes. During that time I taught one or two courses by special arrangement with the University when the men who normally taught them weren't here. Then when Dr. Matthew became seriously ill--in 1930--and was unable to meet his classes I finished the semester for him and taught the course he would have taught the next semester. I always had a stand-in capacity, for some of the teaching at least, and I was associated on seminars and on committees and other matters. Even then I was somewhat more experienced than some of the others.

Daniel: This arrangement continued until you took over the chairmanship of the department?

Chaney: Yes. Of course this enabled me, as I was mentioning, to go to Mongolia and China for a year--just

Chaney: to pick up and leave. No one had any call on my time except myself and Dr. John C. Merriam who was directing my work in the Carnegie Institution. And at various other times I went away on trips during the school year because the University bells weren't ringing for my ears.

Starting out in 1922 as a resident of Berkeley, I had an office in Bacon Hall in the Paleontology Department. My responsibilities were limited to an occasional seminar and to participation on Ph. D. committees from time to time.

When Matthew came in 1927, might have been 1926, he called upon me for advice. As I say, we were old friends, and he had never taught before. So I did a good deal, informally, in helping along. He did more for me than I ever did for him. He advised Roy Andrews to take me along to Mongolia in 1925.

Then around 1929 and 1930 I began going to Mexico, and to Central America in 1931. I had my schedule so arranged that I could occasionally take a semester off without classes.

Daniel: How could you finance these things?

Chaney: As a member of the Carnegie staff I had funds. I used Dr. Merriam's funds. He sent me anything I

Chaney: needed as long as I was a paid member of the staff. I received my salary from Carnegie. When I went into the University in 1931 he set up an annual allotment, a generous one, which enabled me to hire an assistant and do any travel and publication work I needed. I suspect that the Carnegie Institution altogether, including salary, spent close to a quarter of a million dollars on me.

This is not an inexpensive type of work. The taxpayers can't complain about this because it was not public funds, but it seems like an enormous amount of money.

Anyway, all I had to do was to determine whether I had six or seven hundred dollars for a trip to Venezuela, and I usually did, so I went. They bought equipment which the University couldn't get for me.

When I became a member of the University staff in 1931 we moved over from Bacon Hall to the Mining Building--that was another change in the department, we moved into the third floor of the Mining Building to insure safety for our collections. Bacon Hall has never burned down. It has

Chaney: caught on fire several times and is a fire trap. Fossils are in general irreplaceable, these types at least, the described specimens like this can't be replaced and so we moved over to the Mining Building which is relatively fireproof. We've been there ever since and we're moving out in another year or so to a new building nearby.

Daniel: Had you decided when you first came out here what your field of exploration would be?

Chaney: Yes, almost exactly. The John Day Basin, where Merriam worked as a young man in 1900 and 1901, has the most complete selection of landlaid terrestrial deposits in North America and perhaps in the world, at least a section containing fossil animals and fossil plants. Almost every part of the Tertiary section is represented here. Merriam was an extremely wise man and, even as a beginner, he had gone up to the John Day Basin and recognized its value and wrote a paper which is still authoritative after more than fifty years, and that's going some. In geology and paleontology there weren't very many that last a half century.

So Merriam told me in 1920 when I was still at Iowa to go to the John Day Basin, which I did. I

Chaney: went back in 1921 and 1922 and 1923, and have been going there ever since with an occasional year out, sometimes twice a year. In 1925 I didn't go because I went to Mongolia.

Ralph W. Chaney in June 1937
near the village of Shanwang, Shantung Province, China, where he was collecting fossil plants with a field party of the Geological Survey of China.

VI. PALEOBOTANY ABROAD

Asia

Daniel: How did you happen to go to Asia?

Chaney: It was becoming obvious that if my ideas for western America were sound they could be tested in Asia. After all, this is a global study. It's not an isolated John Day Basin in Oregon study. The conditions which I was beginning to think had obtained in Oregon and California and Washington, must have had corresponding manifestation in Asia, if I was right.

So I went over there and the results of that first year weren't all that they might have been for the reason that we were going to Mongolia, mostly collecting fossil reptiles and mammals. There weren't many fossil plants there. I had a marvelous time. We could talk for hours about it.

Daniel: How long were you there?

Chaney: About five months in Mongolia and a month or two at either end. When I got out of Mongolia I went to Manchuria where I found a fossil flora almost exactly like one in the John Day Basin.

Daniel: Did you have any communication with any people in this field?

Chaney: In Asia?

Daniel: Yes.

Chaney: No. The Chinese were interested--Amadeus Grabau, a very eminent man, had got into trouble at Columbia during the first World War because he was pro-German. He went out to China and founded the school of Grabauian philosophy, which is now outmoded, but which was very useful for over twenty years.

Daniel: You say Grabauian?

Chaney: G-R-A-B-A-U, and then just the "ian" for the adjective.

Daniel: Was there some connection between what you were doing and what someone in China may have been doing?

Chaney: Not much, no, no, no.

Daniel: And how did you happen to go to Mongolia?

Chaney: Well, Roy Andrews was collecting dinosaurs in Mongolia. He was at the American Museum under Osborne and Matthew. In fact, I certainly must have discussed it with Matthew beforehand and said I wanted to go. I don't remember the details.

Daniel: To see what you could see, in other words.

Chaney: To see whether I could find floras like those of the John Day Basin in Mongolia. Well, I didn't, but in

Chaney: Manchuria there was a flora, very much like one in the John Day Basin.

Daniel: How did you get into the Manchuria area?

Chaney: A Swede had written a paper about it around 1921, a man I know very well now. He was out of his field, but Swedes are great to get around places, particularly China.

Daniel: What was his name.

Chaney: I'll tell you in a second. I know him. He's a close associate. We've had him here lecturing on this campus--Florin is his name.

Daniel: You knew about the Manchurian flora ?

Chaney: Yes, I knew they were there. That was my first real contact with the Japanese. My search took me to a coal mine. The plants were inter-bedded with false seams of coal. They confirmed my feeling that flora in Asia would supplement what I knew of plants in western North America. So I've been back, in 1933, primarily, to study the plants associated with Peking man, Pleistocene; in 1937, at the request of the Geological Survey of China, which didn't pay my travel expenses.

Daniel: Was the Chinese government interested in your work?

Chaney: Yes. By this time I knew these men well. W. H. Wong was to be the Minister of Transportation and the Minister of Education in the War Cabinet, a very fine man.

Daniel: Did they become interested because you were interested, or were there people in the Chinese scholastic circle who might have been interested?

Chaney: There was a botanist named Hu who became interested. These things get very complicated, all human relations do. In 1933, working on the Peking man deposits I became very well acquainted with the Rockefeller group, the Peking Union Medical College, who were handling that job.

Associated with them was a French Jesuit, Pierre Teilhard de Chardin. He was not employed by them. He was a missionary, but he spent all his time on fossils. In many ways he was the most remarkable man I have ever known. Well, Pierre and I got well acquainted. Four years later, when the Shantung flora, (Shantung is the province that sticksout toward Korea, out into the Yellow Sea), when the flora was discovered it was turned over to a Chinese botanist who wasn't wholly competent. He'd never done anything with fossil plants before, and he was sort of butchering the flora.

Daniel: Was he primarily a botanist?

Chaney: Yes, he wasn't a paleontologist at all. There were some other reasons why he was having difficulty.

So, through Pierre, I got the invitation from the Geological Survey of China to come out and take it over.

Daniel: This was the Jesuit missionary. Was he primarily a missionary or a researcher?

Chaney: Well, he went out as a missionary, but except for crossing himself a couple of times a week--he was a paleontologist, one of the great men in paleontology. The Jesuits tend to go into non-controversial sciences. Anyway, that was the summer of the war--the war in Asia. In fact, on the way out to Shantung I stopped and got off the train at Tientsin and wandered around as I always do, talking a little Chinese. I began talking to a guard of one of the troop trains--this is China, mind you--and I walked up to him and he shoved a bayonet at me. It was dark in the train shed. It was a Japanese sentry--not Chinese at all! That was my first inkling that the Japanese were moving troops into North China to set up the incident at Lu-ku Chiao, the Marco Polo Bridge which was to start the war about two weeks later.

Chaney: It was a very dramatic introduction to the Japanese military power, on a small scale--but a bayonet is a bayonet. No Chinese, in those days at least, would ever have done such a thing. Nowadays they probably would have run the bayonet through me. This talk about the Japanese being more brutal than the Chinese is a lot of baloney. The Chinese invented brutality, and they are strictly in character these days. They are modified by some of our western controls but they are just exactly the way I would expect them to be, no better, no worse, and it's pretty bad.

But to get back. That was 1937. These were just summer trips, you see. I got away during the summer vacations, mostly around Peking. We went into Shansi and I collected some fossil plants there. In 1937 I went to Shantung and around Peking.

Daniel: Is this Shantung?

Chaney: Yes. T and D are confused. You're dealing with letters that don't exist in the Chinese tongue, so when we say "tuh" or "duh" they just aren't there in Chinese--Shantung. It's like "k's" and "g's" and "p's" and "b's."

Daniel: By the way, did you learn Chinese and other languages as you went?

Chaney: No. I don't speak any. I know words in three or four, Korean, Japanese, Chinese, and Mongolian.

Daniel: Enough to speak to people who are working?

Chaney: Oh, well, yes. Right now, I couldn't handle any Korean. I haven't been in Korea since 1937. My Japanese is pretty sharp, though I don't speak it. My Chinese--I know lots of words.

Daniel: I didn't mean to interrupt you, but we did get off--

Chaney: I 'm not a linguist, unfortunately. If I were I might never come back. It would be so fascinating to live there, really know what was going on.

Daniel: You came back in 1937.

Chaney: And I rushed that publication into print, giving senior authorship to my Chinese colleague, who didn't write any of it, (for obvious reasons). It didn't matter to me. For the theoretical section I took senior authorship and gave him the systematic section. Well, anyhow, the Japanese were moving in. I now know they were sending scientific men into all these regions to write papers. So I hustled this through under forced draft--the only paper I've ever done that with and it's quite

Chaney: a large one, too--so as to prevent any possible Japanese beat. They were moving in right across my fossil locality.

Daniel: Does this mean that the Japanese had more knowledge in the field of paleontology than the Chinese?

Chaney: Oh, yes. The Japanese are way ahead of the Chinese in almost every aspect of science. The Chinese have followed classical education. It's sort of like some of the eastern schools where Greek and Latin and philosophy are emphasized. And I'm not saying that they aren't the better for it. I'm not saying that the Chinese classics may not have raised better Chinese than the world of modern science would, but not in the modern world.

Daniel: Paleontology was different from the subjects of classical study?

Chaney: It was, but Grabau, going there around 1920, had sent out some of his Chinese students to Germany and America. They had come back, as well-trained paleontologists, geologists. So there were some men, but none in my field, none in paleobotany. Just between us, neither the Chinese nor the Japanese average more than middle class as scientists.

Chaney: They are mediocre men in both countries who are at the very top. The average is way off.

I'm now working with a group of seven paleobotanists in Japan in a cooperative project. At least half of them couldn't hold jobs in America.

Daniel: It's a new study for them, isn't it?

Chaney: Yes, it's a matter of getting oriented. The Japanese are way ahead because of their more frequent contacts with the West, just as England was way ahead of Germany and France at the outset. They were getting ideas.

Daniel: The Jesuit certainly had a solid background in this field.

Chaney: Oh, yes. He was trained in France. He's a first-class paleontologist, geologist, zoologist, and anthropologist.

Daniel: Who first discovered the deposits in Shantung?

Chaney: One of the Chinese geological survey men. It was a Chinese geological survey job, all of it. They didn't have a paleobotanist who was interested. So they sent the specimens over to H. H. Hu, who was a botanist, thinking he might be a little interested in paleobotany. He figured he could write a paper. He would have written one, but it would

Chaney: have been pretty terrible. It would have been like his models, the Germans of a hundred years ago. They were good then, but they aren't good now. It would have been thirty to fifty years behind the times.

Now, during the post-war period, things have changed very greatly because we've had scores, hundreds of American scientists there related to the Occupation, and the Japanese have jumped ahead and let's hope they catch up with us very soon. They haven't yet, but there are some young men coming on in my field who are decidedly good.

Daniel: The war simply brought more people to the area and stirred it up, so to speak.

Chaney: Yes, people scream about the G. I. babies, but that's just one aspect of an occupation and not necessarily an undesirable one. I'm not competent to discuss the sociology and economics of it, but the biology of it doesn't do anybody any harm. There are some dandy half-caste children in most Japanese villages I go to jabbering Japanese like everybody else. Nobody knows the difference.

Daniel: If you believe in the brotherhood of man this is no problem.

Chaney: Well, it's no problem to me. As I say to my sob-sister friends who moan about this, at least the G.I.s gave the girls cigarettes. The irony of that is perhaps not apparent to you, but most of those girls who became G.I. consorts, sometimes wives, anyway mothers of half-American children, were in an economic group which is farmed out as young women to some male who can afford to pay something for them. They accumulated money for their dowries and then married village boys and lived happily ever afterward. Instead of getting beatings these girls got Lucky Strike cigarettes from the G.I.s. This is just one of the amusing points that you know if you've been in Japan, but you don't know if you view things from across the sea.

Daniel: Do you think the ideas brought by the American occupation forces were beneficial to Japan?

Chaney: With the world as it is, with transportation and communication the way it is, the sooner they develop relations with the rest of the world, the better. I think it might be best of all if we could put a fence around some of the countries, the way the Danes had a fence around Greenland until about 1940. One couldn't go ashore. If you

Chaney: were shipwrecked and landed on the shore you were arrested. They didn't want alien races. They wanted an Eskimo National Park. They didn't call it that but that's what it was in effect. I almost went there in 1940. I had the money and all the preparations, and then the war started. It is an important place in my business.

Anyhow, if they could put a wall around the whole of China and leave China the way it was, untouched by the West; if there could be some way to insulate Japan from the world outside. I'm not altogether sure the Japanese and Chinese wouldn't be happier the way they used to be. I'm far from sure--this is getting into a pretty complex philosophical drift. They'd die of hunger, and they'd have more blindness and misery, but both the Chinese and the Japanese are a very happy people, particularly the Chinese village people, the Japanese village people, too.

Daniel: You mean in their personal philosophy?

Chaney: Oh yes, they are very happy and very simple. Although we say they are benefited by having our radios, automobiles, television, and canned food, in some ways we may be burdening them.

Daniel: Unfortunately, we never have choices about these things. Inevitabilities arise and--

Chaney: --and nobody can keep up a fence--the Danes couldn't. They had to absolutely seal Greenland. You just couldn't get on without high endorsement and then--for all I know, I never got there--they might have sent a sentry around with me to make sure I never would have stopped for the Eskimo girls. They just weren't going to have contamination. The San Blas Islands, off the coast of Panama, are like that. I flew out there once in a navy plane, an amphibian, and those folks have gold mines and agricultural lands on the mainland, not more than four or five or maybe ten miles away. They go across in canoes. The islands themselves are completely occupied, and I mean completely, by their houses. When you step onto an island, you step into a house. The reason they live on these off-shore islands is because they don't want their womenfolk mingling with Negroes. When a woman goes ashore, if she gets out of sight (this was true in the early 1930s when I was there) if she gets out of sight of her men she's never allowed to come back. She might have had some Negro semen introduced in the

Chaney: interval. Now that, like the Danes and the Eskimoes, is a losing fight. You can't keep it up. Sooner or later some girl is going to be smart enough--while I was there there certainly were no signs of Negroes, but all you have to do is step ashore on the mainland and there are Negroes, along with the Indians and mixed breeds. The San Blas are completely Indian, at least in the same way others are completely Nordic. Nothing is complete but they thought they were, anyway. But all those are losing fights. The Chinese tried it and kept us out, but the Japanese submitted to Commodore Perry around 1850. Because they are a small country they absorbed our ideas faster and are ahead of China.

Daniel: As you were making your exploration you had agreeable relationships with most of the officials.

Chaney: Oh, very. One has to. My policy with the Chinese has always been to treat them as equals. My first contacts were not that way. Roy Andrews, who led the Mongolia expedition,had a British point of view, although he was strictly an American. He thought the Chinese were inferior--all Orientals were an inferior race but I saw the results of it. They were unfortunate for him and for the Chinese.

Chaney: Anyway, I doubt that I would ever have treated them in any other way than as equals because I think they are our superiors.

Daniel: This is your inclination?

Chaney: Well, I admire the Chinese highly, and the Japanese also. They are the same people, they happen to be living a little differently. Well, certainly I'm not concerned with economics and sociology as an amateur. The Chinese I have had dealings with have always treated me fine. I've had no unfortunate experiences with either Chinese or Japanese and I have to have very close cooperation with them. It's their country, I do what they let me do. But I've always been able to do almost everything I've wanted.

The Japanese were a little tough before the war but they are no longer that way.

Daniel: What about China, now?

Chaney: We get papers occasionally.

Daniel: What was the last time you were there?

Chaney: I was there in 1948, and just before communism. I had hustled over there that time to get in ahead of the Communists and I just made it.

Daniel: Do you suppose there are people who are well enough trained now to handle paleobotanical materials skilfully?

Chaney: They were coming along. We had a man here--a Chinese--I can't think of his name--Tze, Tze I think is the Chinese--he was here for several months studying our collections and discussing matters with me. I have had Indians and Hindus also.

Daniel: Is there any indication that Russian paleobotanists may be interested in this field?

Chaney: Not in China. There have been Russians right along who have been interested in my sort of paleobotany, and there are several who have been writing papers and sending them to me in the last two or three years.

Daniel: Had you any communication with them before this time?

Chaney: I've never heard of any of them.

Daniel: Had they done any work in this field before, that you were aware of?

Chaney: I doubt it. Kryshtofovich was the principal paleobotanist of Russia and he died about four years ago. These are probably his students. They probably took his mailing list and sent me papers. I had never heard of any of them before.

Daniel: You continued your work in that area just as long as you could, through 1948?

Chaney: In 1948 I went over to have a look at Metasequoia. I didn't see any fossils on that trip. That's the living tree.

Daniel: That was quite an exploration and had a wonderful effect in several ways.

Chaney: It was of very great interest. Almost everybody read about it. Metasequoia was obviously a first-order discovery. I didn't discover it. It was discovered by a Chinese. As soon as I became assured that the tree was living in China it opened up the possibility of seeing a tree, previously considered to be extinct, living in its natural environment.

If we could go today to an area where there were dinosaurs and see what they ate, which ones ate which plants, think how much more we would know about dinosaurs. Actually, no one knows what dinosaurs ate at all, the herbiverous dinosaurs. There's no knowledge, no real knowledge on the food of herbivorous dinosaurs.

This was a chance to apply ideas that I and others had been formulating on paleo-ecology, to check them in the field in central China, to go and see a tree that I had guessed might be in

Chaney: existence before it was found. I had no idea what it would be. I thought it would be a Sequoia.

Daniel: How did you get the first clue to this?

Chaney: My collaborator on the Shantung paper, H.H. Hu, wrote and told me that redwoods had been discovered in China.

Daniel: How did he know?

Chaney: He heard about it from the Forestry Department at Nanking University where he had a close friend named Cheng. Cheng heard of it from the forester who brought out the first specimens of Metasequoia around 1940, 1941, or 1942.

He wrote to me and wrote to Elmer D. Merrill at Arnold Arboretum. Mr. Merrill was too old to go. We considered it. I'm sure he never considered going, but it would have been fine if he could have.

I was reading in the papers those days about the advances of Communist troops. They were getting perilously close to this area. So I picked up and went.

Daniel: There a notation in one of the sources that you went to the Philippine Islands.

Chaney: I went down to the Philippine Islands after my work in Mongolia and Manchuria in 1925.

Daniel: Was there material there you wanted to investigate?

Chaney: Forests. I had never seen a tropical forest and I saw a dandy. That was just enlarging my botanical experience.

Daniel: What about Mongolia? What did you find there?

Chaney: There weren't many fossil plants, but afterward I went to Manchuria where there are very fine sources of plants and where I found the dawn redwoods without knowing what they really were, of course. No one did then.

Daniel: Now this was in the period before the 1930s when you went to Manchuria?

Chaney: That was after Mongolia in 1925. My next trip to China was in 1933 after I had become a member of the University.

Latin America

Daniel: There's also a mention of your going to Central and South America. Did you always go to different places?

Chaney: I went to several places in Latin America, and always to Panama. Panama is particularly interesting.

Daniel: Why?

Chaney: Because it has a forest very much like that which lived in the Sierra foothills, Dutch Flat, and Nevada City, Grass Valley during the Eocene epoch, some sixty million years ago. It's readily accessible because it's a part of the United States and has some facilities. There's a fine tropical research station, Barro Colorado Island, there, where I had accomodations. All in all, it was a very fine experience and supplemented what I had seen in the Philippines of the Old World tropics.

VII. ECOLOGICAL AND GEOLOGICAL APPROACH TO PALEOBOTANY

Qualitative and Quantitative Aspects

Daniel: Is the material you find in a living forest reliably of the same nature as the fossil remains?

Chaney: What I'm trying to do is to match fossil species and groups of vegetation (floras) with living plants and forests of today. That's been my whole approach throughout all my life, matching the vegetation of the past with that of today, and it's been primarily on a vegetation basis rather than on a basis of individual plants. Most botanically-minded paleobotanists are concerned with the individual plant, the structure and the naming, and its evolutionary position. They study it as a plant. I study it as part of a forest, as an indicator of earth history, a geological and ecological approach.

Daniel: Which is wider--

Chaney: Well, it's different. I think it's more fundamental to geology and I think probably taking a plant apart and studying all its structures, relationships, is of more value to botany, at least of the old line sort. Modern botany includes, of

Chaney: course, distribution and ecology, which comes out of my work.

Most people, back East at least, are inclined to think that I am a botanist. I don't know whether I should mention this here but the National Academy section of botany fully expected and assumed that I would join the botany section. I joined the geology section without ever having considered anything else because I am a geologist. In many ways the botany section would have advantages, but I am primarily a geologist.

Daniel: Do you think the tendency in the past has been to limit study to the structure of plants?

Chaney: It still is in most parts of the world. Floristics, which is the study of whole groups of plants, is not an important part of botany as is morphology and evolution. I can't say, I'm too close to it to say whether there's a trend away from the morphologic studies and the systematic studies and the evolutionary studies. I wouldn't favor abandoning them. They are absolutely essential, but if there is a trend toward emphasizing some others that will make the subject better-rounded, won't it?

Daniel: Yes. Do you go on from this point to relate animals to the plants?

Chaney: Oh, the biota is involved, all living things, yes. The trouble with that is that there is scarcely a vertebrate paleontologist who is working on the ecological side. They have been largely students of structures and evolution, and they have hard parts which change rapidly--teeth, for example. There's nothing in fossil plants which changes as rapidly as teeth. The leaves I work with have been the same for nearly a hundred million years. We don't have evolutionary trends in the structures of plants in so short a segment of time. So I've had to look for other things. In the case of vertebrate paleontologists they have the basis for exact and significant evolutionary studies, and most of them haven't got around to ecology at all.

One or two of my students, men who have sat in my classes, not as paleobotanists, but who have taken my course, are beginning to work on ecology in vertebrate paleontology, and it may be hoped that others will.

Daniel: Discovery of evolutionary changes keeps the cre-

Daniel: ative energy and fascination going, doesn't it?

Chaney: Yes. It's wholly desirable. It has, though, delayed the point of view that is developing in paleobotany. They still look at fossils as individual animals and not as part of the whole living group, the biota. So I think we are also a little bit ahead of invertebrate paleontology. There is a great deal of work and a great deal of talk about ecology, paleo-ecology. The difficulty there is that we are dealing with marine life and we just can't know as much about conditions on the floor of the sea as we know about conditions on the land surface, so it's a much more difficult study to make.

But so far as my work is concerned, my point of view could be summarized as saying that I've been concerned with vegetation, and most paleobotanists still are concerned with plant specimens. Vegetation is a part of the history of the earth with which I am concerned. The plant is part of the sequence in time, a part of a sequence of structures, all essential. It would be like saying that one friend was better than another friend, or one kind of food was better.

Chaney: Now, one is better at one time, another at another time. I'm certainly not narrow-minded enough and I'd be very stupid to say that the morphological aspect of botany isn't as important as the floristic approach. The British, for example, indulge in morphological botany almost to the exclusion of everything else, and people in the Eastern universities are almost entirely botanical paleobotanists. What I do say is, I like the floristic better. I like vegetation better than individual plants, and so because I've been greatly favored I have been able to work on it.

If I had in past years gone to some universities perhaps they'd have told me to study structures, the petrified structures of ancient plants now extinct and meaning nothing, or almost nothing in terms of their habitat significance. But nobody told me that. I gave myself my orders and I also had ample aid from Dr. John C. Merriam.

I met him about 1918, and when I published the Eagle Creek paper, a small one that I mentioned earlier, I sent him a copy. I didn't have his support in mind; I sent the paper to fifty or sixty people, I didn't have much of a

Chaney: mailing list in those days. He had been interested in paleo-ecology and paleobotany all his life, but had never been able to find anyone to work on it. As soon as he got that paper he stopped off in Iowa City where I was teaching to see me.

We talked about many things. He asked me if I would like to work out here. He suggested that I come about a year later and two years later I did come as a member of the Carnegie staff.

Merriam throughout aided me financially, and even more significantly, in supporting the vegetation approach, the use of paleobotany as a tool in figuring out earth history.

In the Carnegie group there was an outstanding man, the outstanding ecologist, botanical ecologist in America at that time, Frederic E. Clements, with whom I had become acquainted in 1916. The first time I ever went to Washington I met him. A man full of ideas, not all of them good but he had a good percentage throughout his life--he died during the war, this last war--I was extremely close to him. I was unable to follow some of his suggestions; sometimes he came to realize that he was in error. He thought, for

Chaney: example, that the plants of the Eocene were oaks and maples and walnuts like those now living. He was at first very disdainful, very inhospitable to the idea that they were plants unlike any now living in temperate North America, but as soon as I had worked up the Goshen flora and shown that they were tropical plants he accepted the idea and immediately got the point that we had here a temperature gradient from tropical to temperate, and this has been one of the most significant tools in geology. For example, if I find a plant with large thick leaves, often leaves without teeth on the margin, often with veins which are heavy and loop around the margin--there's a botanical name for it--I know that's a tropical flora because that's the kind of leaf I find in the tropics, in Panama, in the Philippines, and in all the tropical places I've been to. At higher altitudes the leaves are smaller, thinner, and have serrate margins and if the nerves run out to the teeth in these margins--I'm thinking of a birch or an elder leaf now and you can think of leaves like that--then I know it's temperate.

Well, the fact remains that in the western United States all of those tropical floras are in the

Chaney: older rocks. As we come up to the present there are fewer and fewer of them and more and more of the temperate kind. In other words there is change in climate expressed.

Where the vertebrate paleontologist sees his horse grow from a dog-sized animal with four toes and low-crowned teeth up to the present horse with only one functioning toe and the very high-crowned teeth and long jaw and all the rest, where he has a morphological sequence, I have a sequence suggesting climatic change and it doesn't make any difference what kind of sequence I have. If--this is absurd--but if in the Eocene there were white pebbles, in the Oligocene there were red pebbles, in the Miocene there were green pebbles and so on--it's too silly for words but it's a good example--then we would always know the Eocene by the white pebbles, wouldn't we? It doesn't really make any difference what they are just so we have it well-marked.

So when I find large thick leaves with characteristic venation, I say Eocene and it always works out that way, and dating is, of course, an important part of any paleontologist's activities because we have to know the 'when' of the ques-

Chaney: tion. It's important in economic geology, it's important even in the pure unapplied phases of geology to know the age of the rocks with which we are concerned.

In the western United States, at the present time, anyone who has read my papers and other papers written by our Berkeley group, can identify and determine the age of the rocks, even without identifying the plants. Some botanists say these leaves don't mean anything. You don't know whether you have figs or magnolias. All right, so what? If they're thick and large, whether they're figs or magnolias they at least represent tropical plants--which means Eocene.

Actually, botanists who say we can't tell are showing a lack of knowledge, because anyone who knows leaves well can tell nearly as much about them as botanists can tell about other structures, modern botanists. So I'm not admitting that their charge is correct. I'm saying even if they were right we can be pretty sure of our ground.

I have applied for a National Science Foundation grant to do in four or five years what I have done in America in the past forty; that is, to develop the sequence of vegetation in eastern

Chaney: Asia, particularly in Japan. I can do it in a few years because there are a half-dozen professional paleobotanists instead of a group of green graduate students, because I've been through it once, and also because I don't have forty years to spend anyhow, it may be presumed.

So I'm hoping to go over there once a year for the next several years to guide the work of Japanese friends and to come up with a sequence which is going to be as useful for them as ours now is for us.

Daniel: Where is this?

Chaney: All over Japan. Japan is a wonderful place. There are more plant fossils in Japan than any place of its size I have ever seen.

Daniel: And there is a growing number of people there who are interested?

Chaney: There are a good many. There are almost as many as there are in the United States.

Daniel: Have these people studied here?

Chaney: Some have. Most of them have studied in Japan. With a little guidance they can do very good work, a little guidance and some American financial support. There's one thing about the Japanese. They're

Chaney: very good on systematic work, on description, but they don't get over into theory very much, interpretation and theory, and without some theoretical studies you just don't get anywhere. Even way back at my start in 1922 I had the benefit of Merriam and Clements, who were about twenty years older than I, both top-flight men, who had suggested these theories to me. I had some of my own. They supplemented them, very maturely, and guided me. Those two have done more for me than any other persons since my college days. I mentioned some of my teachers--but these men guided me to within the last fifteen years. Merriam died in 1946, Clements died, I suppose, in 1944, and up until the day of their death I was in touch with them regularly, receiving ideas from them.

Daniel: At present where do you bring your ideas for cross-fertilization?

Chaney: I don't know. It's different being an old-timer. People come to me for ideas now. That doesn't mean my ideas are any better than they were when I was young, but just as I turned to Merriam and Clements, men younger than I turn to me--not all

Chaney: of them, fortunately. And I don't consider myself in the least degree an infallible source.

One or two of my students--one of them is in his late forties, the other in his early sixties, he isn't much younger than I am, in other words--are the men I talk to most about paleobotany. Both of them are my Ph.D.'s and both actually engaged in paleobotany in western America.

And, of course, there are literally scores of friends. When I want to find out something about conditions of deposition on the ocean floor I may talk at lunch with Maurice Ewing of Columbia University who knows more about the ocean floor than any other man, I guess. He's made a lot of deep sea soundings.

That brings me to an aspect of my work which runs through it all the way and which has been emphasized more than anyone else has ever emphasized it, the quantitative approach. Most paleontologists, past and present, give a list of the plants or animals in a flora or a fauna. Sometimes they would say that a certain animal or plant was the most abundant. Sometimes they would mention that one was rare. Well, only in

Chaney: the most general terms. Very early, in 1923 to be exact--in fact, even in 1916, my first flora, but in 1923 on a large scale--I counted, identified in the field, and tabulated thousands of leaves determining the proportion of each species in the flora.

Daniel: How did you define your frame of reference for this?

Chaney: What frame of reference?

Daniel: Of leaves per what unit area?

Chaney: I used cubic feet, but it didn't particularly matter. A ten thousand unit, ten thousand leaves, is a good workable unit. It's more than I can get in many floras. I have studied floras in which I had fifty thousand, and after one has collected ten thousand or fifty thousand there aren't many new things coming in and the percentages hold pretty constant. You can find out what's rare and what's abundant, and you also can find out what's missing that might be expected.

Now, these quantitative studies are a part of all of the papers of our group out here and of almost no one else's. An Englishman did work

Chaney: of this sort, probably before mine, on a carboniferous flora, but it was very different.

For example, this manuscript I have around here has in it an exhausting, not exhaustively, an exhaustingly complete discussion of rarity as well as abundance. And I find that plants which are rare are usually represented by winged seeds, which blow through the forest, such as pine, spruce, seeds of plants that live in the high levels. In other words, these rare plants gave me an insight into what was on the hillsides above. The abundant plants were those living down in the valley near the sites of deposition. So it's possible to do quite a little with topography. That's one of the tough ones. We've always worked on climate, but topography has been comparatively little-known.

I'm working over to topography by means of this quantitative tool. I don't think it's a well-made tool as yet and I'm working on another research project now in Japan on methods establishing sound quantitative procedure, and I'm doing it just like this:

I go to the shore of an ocean or a lake in

Chaney: Japan where the sediments are volcanic like those of the past in western America, where the trees are more nearly those of the American Tertiary than any living anywhere except in China where I can't get to them. There I count leaves. I sit on the ground, pull out leaves from a foot-square unit, and count them by the hundred or the thousand. I've been doing this thoroughly since 1917 but the Japanese work is on an intensive scale.

I hope to find out why it is that some leaves which we might expect to have been present are rare or absent. Poison oak, for example. There are quite a good many poison oak seeds but poison oak leaves are rarely present. I recall listing it in only one flora. Have you ever looked for poison oak leaves the day after they blew off the bush? They're beautifully red in the late summer.

I shall never forget the time I went out watching them pretty carefully to see what the leaves looked like. I couldn't find any. They were all shriveled up. Foliage like that doesn't get into the record. Azaleas, not the heavy

Chaney: evergreen rhododendron, but occidentalis. Azalea has a mushy leaf. So does hazel. Neither one of them is common. They are almost entirely absent in the fossil record.

Are we going to assume there weren't any hazels, azaleas, and poison oaks? We had to work out some way of explaining what we don't have as well as what we do have.

Now, this is getting way over into the theoretical side. And I like it. I don't know whether it's going to amount to anything. I don't know whether my work amounts to anything or not. I know that someone is going to do it sometime. If I get enough done someone will start where I leave off. If I don't it may be a hundred years before someone gets in the mood. There's no rush. I'm not in the least impatient to get there. I like theoretical paleobotany, that's why I do it, but there's no particular reason why all the juice should be squeezed out of the grape in my lifetime.

Thank God, I got Metasequoia in my lifetime. It makes me shudder to think of having died, say at fifty-five. I was fifty-eight when I saw it.

Chaney: If I had died at fifty-five I would have been practically unbaptized. Not that it was an earth-shaking experience but it certainly has affected me profoundly. In the same way if I can tumble onto some of the significant facts of accumulation in my lifetime I'll enjoy it, but whether I do or not someone will eventually get around to it.

Some of these vertebrate paleontology boys whom I mentioned, interested in ecology, are doing quantitative work and watching out for the same thing. Incidentally, they're finding lots of tiny little jaws of rodents and even teeth, individual teeth of rodents so small you can hardly--you can see them but they're the size of a pinhead, some of them, which have been almost completely unknown. In general I've been told (it's in the books), rodents were present but rare. They are extremely abundant if you look for them, look for the little, almost micro-organisms, not quite. They're just too small to find readily.

So the quantitative side of it involving this approach of the factors which affect preservation

Chaney: interests me very much and probably interests me more now than working up floras does. Other people can work up the floras.

Daniel: It would be interesting to hear about some floras.

Chaney: Well the Bridge Creek flora has dominant Metasequoia, with alder, oak, maple, and fifty other species.

Daniel: These are different combinations?

Chaney: That's the flora. The flora that comes next in the John Day section is the Mascall, which is Miocene. Instead of dominant dawn redwood (Metasequoia), it has swamp cypress, Taxodium, a different setting, a swampy situation. I've worked on floras ever since 1917 and I'll doubtless continue. I'm working on some now. I like to work on a lot of floras. The results of what I and other people have been doing, for example the geoflora idea, have come out of that. The fact that there have been great units of vegetation which lived on the earth for tens of millions of years and which shifted their area, not necessarily getting larger, they may even have contracted, for the geoflora move from, say Alaska to California over a period of fifty or sixty million

Chaney: years. One has to have a lot of little floras, little units before the geoflora idea is possible.

There have to be many dots on the curve. You can't draw the curve very well if you have only one or two dots, two or three.

At the present time I'm very much fed up with paleontologists, not with paleontology. We have in the Paleontology Department a man who should never be in the University but who has political acumen and plenty of energy, not much education. He's running things now and has all the young men terribly cowed. When I retired he was all for heaving me out. That was a little too raw. So I'm in a noisy, dusty little hole where there aren't really adequate facilities for work and I go there as seldom as possible. I work at the Radiation Laboratory. This is a personal matter but perhaps it's just as well to get it on tape. The man I'm referring to is Stirton.

This is relevant only because it is entirely possible during the next ten or twenty or however many years there are of my life I'll do most of my work in Japan, or get seriously to work on my Japanese porcelain which I've been working with

Chaney: for many decades. I have a very large collection.

Daniel: Work that goes on in the field to some extent depends on the leadership that is exerted at any one time?

Chaney: Of course. The leadership of a man like Stirton is preposterous.

Daniel: What is his chief interest?

Chaney: Vertebrate paleontology. He's a very energetic, hard-working man, has many good qualities, certainly. He is uneducated and lacks good University manners.

Daniel: What do you mean 'uneducated?'

Chaney: I mean it literally. He doesn't pronounce technical words. He's recently written a textbook which from all sides is receiving giggles and criticism. He doesn't know things but that doesn't bother him. Specific little things like this: he calls a cycad a cocoa palm, whereas he means a sago palm--plants as different as a rabbit and a porcupine--much more so, a rabbit and a lizard.

But that means nothing to him. The textbook has much merit, incidentally, as does Stirton.

Daniel: What is his chief merit?

Chaney: He's hard-working and...I guess that's about it. I don't think it's appropriate for me to give an

Chaney: appraisal of his scholastic achievement. All I would say is that it is largely on the systematic level. There's very little in the way of ideas in it, as far as I know.

Daniel: When did he come to the department?

Chaney: He was in the museum and against my earnest efforts--

Daniel: You were chairman, weren't you?

Chaney: Not at that time. Against my earnest effort he got his foot in the tent, like the camel, do you remember? So there isn't any room for some of the Arabs any more. Now, I don't feel especially bitter about it. It's a disgrace for any university to have a man like that call the shots, but he does. He has a good deal of political power.

Daniel: What is his chief research activity?

Chaney: I think one would say he's working on mammals of Australia. He's found very, very few. I don't think there are very many there.

But he's mostly one of these very busy organizers. The whole story--you can't tell a story like this. I'm not even going to hint on the tape at where the trouble lies other than to

Chaney: say that private contributions may cause more misfortune to a department than as though we went slower and depended on public funds.

Daniel: Is this a problem, in general, in institutions receiving money from different sources?

Chaney: Oh, I guess. It raises the devil with the Zoology Department. I talked to your father-in-law about it at various times in the thirties. Somebody comes along and wants to give money and then indicates how it's to be spent. I read a letter once from the person who gave this particular money chiding President Sproul for not having fired me sooner. Of course, I was never fired at all. Private funds may subvert the morals of a place and it's pretty hard to have integrity if you're interested most of all in getting money.

Of course there are two sides to such a question. I'm giving one side. The fact remains that as a senior professor I am deprived of the use, the ready use, of material I have collected in the last forty years, while two graduate students sit in the room which I should have.

It was strictly a matter of revenge--because

Chaney: Brother Stirton knows that I blocked his entry into the University and he waited for his time and got even, or maybe a little more than even.

Daniel: However, I'm convinced this kind of thing does not really stop you at all.

Chaney: I don't have any ulcers either. I rarely think about it.

However, I have the good fortune to work with men like Lawrence and McMillan and Alvarez. I'm probably not going to get out of paleontology, but I'm more interested in people, in human relations. We are going to have a new building soon and maybe I'll have better facilities. That remains to be seen.

VIII. DEVELOPING THE CURRICULUM IN PALEOBOTANY

Daniel: You had a large share in opening up the ideas of the department when you did take over and you expanded the curriculum in paleontology.

Chaney: Yes. The idea was to have two kinds of paleontologists. The kind I like better was geologically inclined; the other kind was biologically inclined. It was simple enough. I don't know that--well, anyone would have seen it. But the biologically inclined people took more courses in zoology or botany. They all took some. The geologically inclined people took more courses in geology, and the really good ones took more courses in both. They are the people who had to have everything.

Daniel: How did you develop the elements of the expanded major? Had you patterned this on the curriculum at any other university?

Chaney: Oh no, just sat down and looked over the catalog and figured out what they should take. I consulted with Bruce Clark who was the invertebrate paleontologist at that time about what an inver-

Chaney: tebrate paleontologist should take. And I consulted with Charles Camp, the vertebrate paleontologist, about what vertebrate paleontologists should take. And I suppose I had talked, I'm sure I had, to W. D. Matthew, my predecessor, about all this.

Anyway, we worked up a series of course sequences which are useful. Most of our students take the geologically-emphasized sequence, I'm glad to say, because paleontology as I view it here is a way of figuring out the history of the earth, not the history of the plant kingdom or the animal kingdom, but of the earth. Now, I repeat, figuring out the history of the animal or the plant kingdom is just as valuable, maybe more so, but I'm interested in the earth, not in kingdoms, so that merely expresses my personal preference.

Also it's something more than that because most paleontologists earn their living geologically. A majority of them earn their living working for oil companies and there's scarcely any place there for a strictly biological emphasis at all. That's earth history, applied earth history.

Chaney: Most universities have paleontology courses in geology departments. There are some universities that have paleontology courses in zoology or botany. Some have personnel in zoology and botany able to cover zoology and paleontology in the one case, and botany and paleontology in the other. This is rather a desirable way to do it, I think.

It all comes down to organization. We have more departments here than most universities. If we straddle our departments there's no disadvantage. Actually I have had, because of my emphasis, fewer students from the Botany Department than from the Geology Department. But that's because I'm mostly a geologist, I guess.

Daniel: This curriculum which took shape in about 1931 has remained constant?

Chaney: So far as I know. I haven't looked at it carefully in the last several years, but I don't think it's changed much. I'll do that between now and the next time I see you and let you know, but I doubt if there's been much change.

Course Content

Daniel: As department head, you were responsible for the arrangement of a suitable curriculm. As a

Daniel: teacher, what did you feel you should impart in your courses?

Chaney: When I came into the University I told Sproul I was going to give idea courses, not fact courses. When we were talking about it, I said, "If you want me to teach a lot of facts you had better tell me right now because I don't want the job," or words to that effect. I've always taught idea courses with a lot of well--there was a sort of goofy appraisal published and it sold for fifty cents or something, it's around here somewhere.

Well, in professor ratings I was rated very high on ideas and social and political point of view. Some other people whom you would expect, and very popular people, much more popular than I, were rated very low on those ideas. Well, they had other things to do, in other words, which recommended them to students.

Yes, I've been conscious of it. I've always been interested in human relations--social, political, and economic. I worked conservation in, which was certainly, well, economic, if not social and political; it sure is economic. In all my lectures--I give lectures frequently to organi-

Chaney: zations--I give conservation talks.

Daniel: One question apparently leaves quite an impression. This has to do with the religious implications of geology.

Chaney: Yes, and the theory of evolution which, in paleo, students come up against, kids from the sticks who think that makes monkeys of them. I have always treated all aspects of the subject, including the anatomical names of the body which frequently aren't mentioned: anus, and so on. If they've fitted into a sentence I've always said them without an instant's hesitation. And I've always indicated that there could be--well, I have put it this way: I'm going to give you the evidence; I don't care in the least whether you believe in evolution. But if I ask a question in the final about evolution and you don't believe in it, that doesn't mean you're to answer the question wrong. You just say, "This is what the professor says, and I don't believe it." That will be a correct answer. I don't care what you believe, but I want you to know what I said about it.

A number of students have come in and told me, not very many, actually, that they don't believe

Chaney: in it. Mostly they were pretty dumb. I always looked at their grades afterward. Most students who are hit for the first time with this consider it carefully, and they have the evidence, which to me at least and to most people in my field is rather conclusive. It has nothing to do with believing in God or Jesus. It doesn't repudiate the Bible; in fact, I read the first book, the first chapter of Genesis, and have for years, commenting sentence by sentence on its application to what I have told them, that in the beginning the Lord created heaven and earth, the earth was dark and something or other. Well...okay. I point out that the Jews or whoever they were who wrote the originals on this couldn't possibly have known all we know now about astronomy and geology and biology, and they are rather vague in spots, but they certainly had the general idea of the cosmogony, the Genesis cosmogony and my cosmogony are essentially the same.

I've always done that. I think it's a good idea because I'm not destroying the Bible. Naturally, I guess I have made a few comments about the Flood and the Ark, wondering what the dickens

Chaney: the lions ate while they were on it, pointing out that they must have had four sheep instead of two so that the lions could eat two of the sheep. It seemed to me desirable to point out that we can't be too literal.

I've never got into the subject of Jesus in class. Outside I tell students or anybody else what I think about it, but there's been no occasion to mention the particular tenets of Christianity in class. I'm obviously no Christian, but it's nothing to brag about or to talk about except when it's relevant.

I think we have to give the students something before we take something else away. You can't refuse to take evidence just because it doesn't fit your ideas.

At the end of the course the students have a chance to say what they think of the theory of evolution. I don't care whether they like it or not, but I want them to know how it's developed. The course context has nothing to do with the student's personal beliefs or faith. The student must know the subject matter of the course whether he believes in my conclusions or not.

Daniel: You also talked about minorities.

Chaney: For years I talked about minorities. I told students about the time I was in Manchuria when I was the only Caucasian in the theater, a variety show, and they were having some sort of skit, and in comes the comic of the cast made up as a Caucasian, wearing a checked suit, a red tie with a diamond stickpin in it, and wearing a derby hat. This is the Japanese idea, this was a Japanese show, of a Caucasian, and he brought down the house. Everything he said was ridiculous. People around me looked at me, more or less apologetically. They realized that I was being made ridiculous, too. They didn' want to make me as an individual ridiculous, but here was this silly Caucasian who was the butt of all the jokes. Well, I have been in the minority more than once.

I told about one night in Bartica down in British Guiana. Without knowing it was going to happen at all I got into a river town on a river boat. I had another Caucasian, a paleobotanist, with me, and the man to whom I had a letter from William Beebe was a Negro, and

Chaney: everyone in town was a Negro! There just wasn't anybody but Negroes there. A British judge who was going up to try a case was a Caucasian. But the three of us were a very small minority. Well, when we walked up the street parents pointed us out to their children as something very funny, worth taking a look at.

So my conclusion was that everyone is a minority, if he happens to be in a certain place. It's purely a matter of chance. The mores of any group aren't right simply because they are mores and they certainly aren't wrong. It's just the way we do things. Some of this sounds rather fatuous, but remember that in this class that we're speaking of, there were mostly freshmen and sophomores, very inexperienced boys and girls.

And a lot of them had, as I had when I was in college, an idea that right was right and wrong was wrong. It's just one of the little dragons that I've always been trying to slay. Conventional standards aren't necessarily right, although I think they often are, oftener than not.

Daniel: The prevailing climate of opinion develops the standards.

Chaney: I'm not opposed to opinions because they're conventional at all. We'd get nowhere if we didn't have some conventions.

Daniel: You want them to understand the derivations of conventions.

Chaney: Yes. Often I have said when I have started a course, "This course is listed as a course in paleontology. Actually it's a course in discrimination and timing. If you believe everything I say you may get a good grade, but you won't be very smart, because I'm probaby going to make mistakes," and so on, debunking the idea of infallibility.

I'm perhaps speaking a little more forcefully than I would to a group, but that's the idea. I'm giving you a thumbnail sketch of it.

Daniel: Apparently you made your lessons quite clear.

Chaney: I hope so. A point of view is a lot more important than paleontology. As I've said, this beginning course is not a professional course. It may become one. Plenty of people who took it as freshmen have gone on to be paleontologists,

Chaney: very good ones, but the principal benefits are habits of thought and attitudes, a general attitude toward life and history. I've often started a course by saying, "This is a course in history. Maybe you don't like history." Most people don't; I didn't.

Daniel: Paleobotany is a special kind of history.

Chaney: Very.

Daniel: Chairmanship of the department didn't curtail your field trips, did it?

Chaney: Well, it was a small department in those days. There were only two other men. And we didn't have as many students in the University. When I went away I handed over the paper-signing duties to Professor Louderback with the geology department, an old and trusted friend.

It was satisfactory, to me at least.

I went to China in 1933 and again in 1937. Both times I was still chairman of the department. I think my last year as chairman was 1939, but it didn't affect my schedule any. Most of my field work I did summers anyhow, maybe a long summer beginning in May and getting back in October.

Daniel: You continued to give courses in the department?

Chaney: Oh yes, I gave my regular courses. Often there weren't courses in the second semester; I could bunch them into the first half of a semester and leave early.

Daniel: Are there any other aspects of the paleobotany curriculum you would like to discuss?

Chaney: We haven't talked about graduate students.

Daniel: Go ahead.

Chaney: I never had a great many. It isn't a field that attracts a great many students. There aren't many jobs. Most of my students were oldish. Some of them were quite young, but most of them were oldish.

Daniel: What do you mean by 'oldish?'

Chaney: Well, they were men who had been out teaching. They were in their middle thirties when they came to me. I've had some just off the B.S. assembly line. Several of my students are within a few years of me, as old as I am.

Daniel: In teaching, do you think you have some of your greatest satisfaction among the graduate students?

Chaney: Oh yes. I've enjoyed the undergraduates very much, too. Undergraduates are, a lot of them, developing a very receptive frame of mind, and

Chaney: they are getting new ideas, some of which they refuse to accept.

It's very interesting to talk to them. I've had students who came back to me and hoped that I had changed their point of view. They hadn't, you see, and they hoped that I was going to be saved from going to hell.

Daniel: Oh, I see.

Chaney: They were fond of me and didn't want me to have to continue on the path--of course, it's very difficult to get me off the path.

Daniel: This conversion attempt didn't happen very often, did it?

Chaney: Not very often, no.

Daniel: Do you think there's more interest in paleo now, for instance, than there was 15,20,30, or 40 years ago?

Chaney: No, I don't think so. A man named Lull at Yale had a big class there. Richard Lull, forty years ago; and William Brewer, though he didn't have a course in paleontology, taught at Harvard to a full house. It was a small group compared to our big classes.

I don't think there's any great resurgence of interest. I think that newspaper publicity

Chaney: and the fact that everybody knows about dinosaurs may attract some people, but the word 'fossil' is still a term of opprobrium.

IX. COMMENTS ON EDUCATION

Daniel: You've no doubt been aware of various comments and criticisms about our elementary and secondary schools. What changes would you make to avoid defects you may have perceived in your children's education?

Chaney: I'm not altogether clear whether the defects in my children's educations are the result of poor schooling or poor parental control. Ellen never learned to study until she went to a private school where she had to. She was the only one of the three who knew what it was all about when they entered college.

Daniel: How was your education different from that of your children?

Chaney: When I was a child we came home and did our homework. I was interested in knowing my multiplication tables, and in knowing my spelling. I was interested in being the best kid in the class and I always was, through grade school.

Daniel: Why did you want to be the best kid in the class?

Chaney: I don't know. I wanted to be because I wanted to be, I guess. My children didn't want to be because they didn't want to be.

Daniel: But why do you think they didn't?

Chaney: I haven't the slightest idea. I don't think my parents necessarily instilled in me the desire to excel, but I had then, and I have still, a competitive spirit which a great many children, including mine, most of the time seem to lack. I don't know. I'm puzzled by it. I haven't any idea.

Daniel: This is something that puzzles a great many people. In retrospect can you think of any children within your children's group who did have this desire to excel?

Chaney: I don't remember those children well enough.

My daughter in college, with good study habits, did not have sufficient grades for Phi Beta Kappa, although she could have readily enough. Her rationalization was that she didn't want to be known as a brain. There was social pressure in the sorority house.

Daniel: She was a sorority girl?

Chaney: She was more interested in being like the other

Chaney: girls. They were very fine girls, and most of them whom I know anything about are successful and happy, as she is.

Being a Phi Beta Kappa certainly has meant nothing to Mrs. Chaney, not being has meant nothing to me. I didn't, as you see, retain my ambition to be the best through high school and college or I'd have been a Phi Bete. There were other things I was more interested in.

Daniel: You are assuming that "the best" equals Phi Beta; there's a difference of opinion about this.

Chaney: Yes, well, the best grades, then.

Daniel: Did it ever occur to you to find out about the study habits of your daughter's group?

Chaney: Oh, I've talked to hundreds of girls, sorority girls, about their study habits, and a girl who slips down grade points has a study table and is fairly rigidly, only fairly I guess, supervised, and they generally try to build them up because they don't want girls flunking out and leaving the sorority. It's a self-preserving institution, this study table. As for the study habits of the girls who are getting "C" or better, they go out, they go to the library. I have only a general knowledge. I've never followed anyone

Chaney: carefully, except my own children, my sons who lived largely at home, rather than in a fraternity house, where they studied a lot but were awfully slow at it. They didn't know how to read. They didn't know how to organize, apparently.

Both of them are bright, especially the older one. He has, for example, in qualifying tests in engineering, been in the top three or four in every examination; and he's taken quite a few. He now has a very high rating and has gone steadily up, excelling scholastically, at least excelling in examinations. But he was never able to do it in college.

Examinations

Daniel: This leads to some consideration of the ways of evaluating students' knowledge. In your Department of Paleontology what kind of examinations did you have? Did you have objective examinations?

Chaney: No. Students used to ask for them so once I gave a true and false. And they naturally expected that half the questions would be true and half false. I gave them all true.

Daniel: Oh dear!

Chaney: Almost all the class got zero because they answered ten of the twenty false and ten true. I kidded the daylights out of them and threw the examination out, and told them I would never waste their time and mine with such a silly examination again, and I have never had one since. I occasionally have had a question that involved a true-false, but that seemed to me an elegant way of showing the absurdity of such questions in a developmental subject. I think there are perhaps some subjects that would be suitable, but science is not, and it was not a memory course. They figured they had to have ten right and ten wrong and all but a few, as I say, a very few, got zero in the examination. It was no test of their ability at all. It was a test of their guessing, and they guessed very badly.

Daniel: What value do you attach to examinations?

Chaney: Of course one of the values and purposes of an examination is to force the student to review the material. That is perhaps the principal value, or the only value to the student.

There is another value--his ability to put down what he knows in an organized fashion and

Chaney: in a short time. We all have to take examinations of that sort: perhaps when we write a letter, perhaps when we make remarks in court or in some other important situation. We're all taking what is the equivalent of an examination throughout our lives.

And I think that examinations aren't without value to the instructor. Of course, they are of value in giving him a quantitative basis for assigning grades. I have with advanced students, given an examination more than once, involving their writing an examination in the course.

Daniel: That sort of examination displays their grasp of the entire course.

Chaney: Yes, it stumps them for awhile, and some of the questions are very badly written. But one can tell pretty well what they got out of the course by the questions that they think are important. It might be added that from some of the examinations I've seen of my colleagues they wouldn't be graded very high on their examinations either. Some of them, in my opinion, are pretty bad.

Daniel: For the student one of the most helpful tricks is to find out what kind of examination the teacher gives.

Chaney: There was a very clever student of mine, Fred Peters, a lawyer, who unfortunately died when he was quite a young man, who ran seminars in geology and paleo. He knew me. He had had my course. He knew me extremely well. I never told him what questions I was going to ask, but in his seminar he always covered every question that I asked because he knew so well what my course was like. He knew me very well. He was a very clever fellow. He would have made a wonderful teacher, incidentally.

Daniel: Did all of your children go to the University of California?

Chaney: Yes. The boys both went to other schools in connection with their army and navy training. David went to the University of Indiana. Dick went to Columbia. But they graduated from the University of California.

The Student in a Large University

Daniel: Your children all had experience as undergraduates at the University of California at Berkeley. This leads to the question about the University, its size and its teaching.

Chaney: I think that large classes place a premium on being aggressive and a penalty on being retiring. They place a premium on a strongly-developed competitive spirit and a penalty on an easy-going attitude.

All of my children were rather easy-going. None of them was very competitive, and in large classes they didn't always show what they knew. If they had been in, say, Pomona or Reed College their professors doubtless would have been well acquainted with them and would have known that they had a great deal to offer, and I presume their grades would have been better. I think there is that aspect of a large university. Of course, it's commonplace to say that a larger university has a better staff. Compare Cal and Stanford, for example. Stanford is a wonderful school. Actually in many ways I like it better than the University of California. I'm speaking of geology, geological sciences. But it doesn't have the staff. Say we have three or four times as many students. Say you multiply the number of distinguished faculty members by

Chaney: three or four, it's still far short of California's. They just don't have it, and almost no small school does. An opportunity to study with a distinguished man is important if the student is receptive.

I can't seem to remember what my sons and daughter got out of distinguished professors. I can remember one very distinguished one whom they didn't think very much of and presumably they didn't get much from, although the fault may have been theirs.

Daniel: I was going to ask you how well you think the really gifted and talented faculty members are brought into relationship with the students.

Chaney: There are a number of departments--geology, chemistry, physics--with many first-class men. Zoology, too, probably. I know it less well these days. It had a distinguished faculty. These departments have first-class men giving elementary courses. I don't think there's any question that a lower division student can profitably take courses with outstanding men in science. What it's like in English I have no idea whatever.

In mathematics, teaching assistants, and in foreign languages teaching assistants, that is,

Chaney: pre-Ph.D., graduate students, presumably well-selected, are responsible for classes with, I suppose, some supervision although I'm inclined to think they don't always have much.

Daniel: You are in a position to say something about the relationship of teaching assistants to faculty members.

Chaney: In paleo we usually use teaching assistants under several instructors and in several subjects. That way they learn a good deal. They don't stay just with their specialty but learn a good deal about teaching the whole subject, and I think that's a very fine plan. Ours is the only department I know about in that respect, but I have no doubt that other departments do it.

Of course in English and modern language and mathematics teaching assistants give the elementary course and there is no choice of subject. They are independent teachers.

I have rarely if ever seen a teaching assistant in paleo whom I would want to give the chance to teach a course for a semester. I have gone away and left the class with a teaching assistant for one period or maybe two. The results weren't always good, either. I think our teaching assistants

Chaney: are probably as good as those in other departments. I rather think our standards in science are higher in elementary courses.

I can't conceive of allowing teaching assistants to take over full charge of courses, although a mature one, one who has had teaching experience elsewhere, one of these men who comes back at the age of thirty, who has been an instructor at the University of Kansas or whatever, he'd obviously be the eligible member for independent teaching.

However, we have such men as teaching assistants in paleo now but they aren't giving independent courses. I can't generalize about other departments. I know how it is in paleo.

Daniel: Do you think that a university of this quality might be more effectively used only by graduate students?

Chaney: Well, we're geared for about 20,000 students and that would mean that we would have 20,000 graduate students if there were no undergraduates. Let's say we wouldn't have quite as many because the staff would spend more time on each. Let's say we had only 15,000 graduate students as against the combination of 20,000 today. That

Chaney: would mean, when we got the thing geared up and running that every year thousands of advanced degree holders would go out into the world. What would they do? I don't think there are jobs for them. There certainly aren't in paleontology.

Daniel: I hadn't thought of the question in that way.

Chaney: Well, what would we do with the rest of the University? We're built for 20,000.

Daniel: Is the building program now meeting the needs of the University?

Chaney: There are some soft spots. Economics still has Old Soph Hall. But anthro is now out of its shack and geology is moving out of Bacon Hall in a year or so. We're moving out of the Mining Building where we aren't wanted because the space is needed for engineers. Mathematics is moving into a new building in a matter of months. Dwinelle Hall has been crowded, but I think with various departments moving out, there will be more room. Math, for example, is moving out shortly.

Daniel: You don't think there is any particular advantage or disadvantage to the students with one arrangement or another of undergraduate or graduate schools?

Chaney: Most of the students in our sciences who are studying as graduates come from other places anyway, so it doesn't make any difference to them. They wouldn't have been here as undergraduates anyhow. I think it would be a very interesting study--I've never seen any figures on it--to go through the whole of the graduate enrollment and find out their sources. I'll venture to say more than two-thirds of the graduate students in paleo got their bachelors of science elsewhere than at Berkeley.

That might be true in paleo and not true in English or philosophy. My guess is that a careful study would show it and I think it should be made.

Daniel: There are some people who feel the student is more adequately prepared in smaller undergraduate schools than those which exist at Berkeley, and Los Angeles.

Chaney: I don't know how to solve that problem. Of course, you can make Berkeley the undergraduate and UCLA the graduate, or the reverse. This much should be said: that all these smaller institutions,

Chaney: state and otherwise, which are putting on graduate programs are going to run into trouble handling their physics and chemistry in light of modern emphasis. You can't study nuclear physics or nuclear chemistry on a shoestring.

Special Opportunities in Research: The Lawrence Radiation Laboratory and The Atomic Energy Commission Installation at Livermore

Chaney: It's interesting to note that even this great university doesn't have the facilities for graduate study in physics and chemistry that the Livermore laboratory does, a part of the University. We have equipment at the Livermore Laboratory which is not found in any university, in fact not found anywhere else in the world, in some cases.

Daniel: There are students at the Livermore laboratory?

Chaney: They may go out. I have been concerned with building up the student aspect of Livermore laboratory for several years, and we are just beginning to get a flow of students. It's only a trickle at present.

Daniel: Yes. Graduate courses are offered there aren't they?

Chaney: Yes. Graduate courses leading to a master's degree.

Daniel: All the preparation for the master's degree can be completed at Livermore?

Chaney: Only half of it may be done at Livermore, the other half in Berkeley.

Daniel: What about work toward a Ph.D? Is that also allowed there?

Chaney: No Ph.D. curriculum has been set up, but in effect it will be shortly in this way: the students enrolled as Ph.D. candidates at Berkeley can go to Livermore for their research under the direction of members of the Berkeley staff or presumably of the Livermore staff. We have more Ph.Ds by far in physics and chemistry at Livermore than we have at Berkeley. I don't know what the factor is, but it's four or five times as many. In physics and chemistry, to a much lesser extent in engineering, members of the Berkeley staff are members of the Radiation Laboratory staff, and some of them have Livermore duties. Edward Teller is at Livermore. And anyone concerned with Teller's type of physics, and those who wish to study it, would presumably wish to go to Livermore, though until recently he might have taken a course with Teller on this campus. As

Chaney: director of Livermore laboratory I'm sure he no longer teaches a formal course here, but that's just a very recent development since Director York left for Washington.

We have a number of the Berkeley staff who are consultants at Livermore and a number of the Livermore staff who regularly come into Berkeley, either to teach or to carry on research. Let's suppose, to make a very simple case, that a piece of research involved electronic computers of a very high degree. Our electric computer battery at Livermore is, so far as I know at present, the most complete in the world. It won't be very long, perhaps tomorrow, there'll be a better one, but it just happens we have a very fine electronic computer, very excellent equipment. The only electronic computer in Berkeley is a small, student, very simple affair. It's useful but probably wouldn't be useful for research, certainly not in mathematical research. A professor who is guiding a student in a field that involved either the theory of computation or the results of computation would direct his student to Livermore if he didn't have facilities here.

Chaney: Anyone who was involved in a field of physics which included a need for a reactor would send his student to Livermore or to some other place where there was a reactor. This is regularly done. Brookhaven--I'm speaking in a general way, not knowing actually--must have students from Princeton and Pennsylvania, Harvard, Yale, Columbia, and all of the other schools that are part of the Brookhaven group.

Argonne must have many students from the University of Chicago, Northwestern, and other educational centers of that area.

And insofar as there are students in the South, they would go to Oak Ridge, and so on.

Daniel: You have been talking about Livermore. Is there any more exact explanation of Livermore?

Chaney: It's an Atomic Energy Commission installation which has been turned over to the University to operate. Funds are supplied, money is expended according to University regulations, for salaries and purchasing, personnel, everything according to University regulations. It's part of the University.

Whereas the Lawrence Radiation Laboratory in

Chaney: Berkeley is almost entirely a research organization, Livermore is a research and development. Livermore stresses the development side and the Lawrence Radiation Laboratory has stressed the research side. The materials that are tested in Nevada or in the Pacific are developed and manufactured in part at our Livermore laboratory. They are also manufactured, no doubt, across the road at Sandia.

There's a great plant, 640 acres, I don't know how many millions of dollars worth of installation, into which we moved in 1953, I guess it was, and which now has nearly four thousand employees. It has a bigger staff than the University of California at Berkeley.

Daniel: Is there any particularly aggressive recruitment program afoot to attract young men into the studies leading them to work at Livermore?

Chaney: We take all kinds. We recruit bachelors of science in physics, chemistry, mathematics, and engineering, largely.

Daniel: You do make an attempt to encourage these people to come?

Chaney: We go to their institutions. We look for them

Chaney: and offer them jobs and pay the expenses of their family up here if they have to move and we do all sorts of things. We have to compete to some extent with the airplane companies and other big companies that are interested in similar activities.

Livermore has a majority of young men with only the bachelor's degree. We're giving them opportunities to take graduate work. That's the important part of it, so they can become master's degree holders. Under some circumstances, the best of them come to Berkeley or go elsewhere to go on to the doctorate.

Daniel: Did this program exist befor Sputnik went up?

Chaney: Oh yes. Sputnik had no effect at all on us. This talk of what the Russians are doing is for the people who read the newspapers, not for the scientist.

We are well aware of what's going on. We know our strengths and our weaknesses, and we have plenty of strength, I can assure you.

Ralph W. Chaney during
the forties

X. RADIATION LABORATORY DUTIES

Daniel: When did you develop your relationship with the Radiation Laboratory?

Chaney: It was during the war.

Daniel: That was during the forties, wasn't it?

Chaney: It was probably in 1943. I went to work for them in 1944, but I had a close working relationship before that time.

Daniel: Were you in administration?

Chaney: Yes, entirely. I was assistant director. Dr. Cooksey was associate director, and Dr. Lawrence, director. There were three of us.

Daniel: What was your particular niche?

Chaney: Personnel, which during the war was a very broad field. We had with us a great many foreign--mostly British--physicists and chemists. We had representatives of many of the big companies like Westinghouse and General Electric who were here because they were doing the development work on our research.

We were in a rush then. We couldn't build a Livermore laboratory. We had to send our ideas

Chaney: to Schenectady, or Rochester, to have them manufactured there, and what came out of Dr. Lawrence's and the staff's study was made almost entirely elsewhere and shipped down to Oak Ridge, the area where the actual process of separating the isotopes of uranium was carried on.

That was in 1944 and 1945. I retired from the Radiation Laboratory staff a few weeks after the bomb was dropped in 1945 and went back to paleo, but I have retained a close association with the Radiation Laboratory, and for about the last ten years I have had a consultant status which involves my working regularly if there's a big job. For example, the man who was in charge of professional personnel died unexpectedly and I took over that job for a year or a year and a half, I guess it was.

Various matters relating to manpower come up, and I have on occasion--

Daniel: What do you mean, matters having to do with manpower?

Chaney: I mean, specifically, in the case of a laboratory the use of men in civilian or military activities, the assignment of men for University and

Chaney: and research activities, or military duty.

Daniel: Is this a sort of priority rating?

Chaney: In effect that's what it is, yes.

Daniel: You decide?

Chaney: Well, we don't decide. The local selective service board decides, but we recommend. And there have to be laws which guide selective service, so at one time, a number of years ago, five or six years ago, it must have been, I spent a good deal of time in Washington working on the laws with members of Congress and others.

Daniel: Does selective service tend to keep the young men in science with special talent and capacity at their work?

Chaney: Selective service selects men to serve their country in the way they are best fitted. Selection of a boy who's working on a farm to go into the military might seem desirable unless we're short of food, in which case he should be kept on a farm.

Selection of an engineering student to go into the army would be appropriate unless we're short of engineers. If it's going to be a long war, we are going to need engineer graduates. All that

Chaney: has to be figured out. That involves manpower allocation, the term which is applied to the use of the human resources in the best possible way. Laws control the activities of selective service. And if the laws aren't right, if for example we don't have facilities for holding first-class physicists in civilian life and they are subject to being drafted and sent into the army to do just ordinary infantry work as their assignment, the law should be changed. The law is changed sometimes, though there's never been anything just like that. The law must provide means of holding essential men in civilian capacity.

One trouble with a democracy is that every mother is sure not only that her son is as good as everyone else's son but that he shouldn't be placed in any greater danger.

Daniel: Do you think protective mothers exert a very significant force in Washington?

Chaney: There's no question about it in Washington. In wartime I have been in selective service enough to know that the fan mail that is received and

Chaney: gets down to the state or local board levels is tremendous.

Yes, the public opinion in this country I think is an extremely effective factor. It's always slow and it frequently is too emotional, perhaps it's always too emotional. The idea that everyone's son is as good as everyone else's may be correct in the eyes of mothers and God, but not nearly everyone is as useful in a physics laboratory. For that matter not nearly everyone is as useful in an infantry company. An effort is made--it should be and is made--to select the men who by training and ability can do outstanding jobs. Theoretically, if they can write good poetry they should be assigned to poetry, though in wartime we usually forget about that. The men who are deferred are useful in industry, agriculture, training, or in research.

We very early had to decide, when I took over the selective service office in the University in 1942, whether we were going to ask only for the people we had to have, or ask for the people we would also like to have. We developed our own classification of the people we simply had to

Chaney: have, whom we couldn't under any circumstances spare, and we never lost one of them.

We didn't ask for and insist upon all the people we might have liked to have. We always had a third group that we could replace in a fairly short time, in a matter of months, that weren't even worth asking for at all, for more than a brief period of deferment.

I'm going to see tomorrow two of the men I worked with during the war. They are coming down to spend the day with me here and at Livermore. I and one or two others went to Sacramento to talk to those men and give them our philosophy, the men we had to have and the men we just wanted. Then, as the Manhattan Project began to develop, involving the Radiation Laboratory, we had powerful aid from the Army and from President Roosevelt, who knew what we were doing. Most people did not. The Army didn't know except in a vague way, I suppose. Roosevelt knew. So the Manhattan District was able to aid us through selective service and at the height of the fight we never lost a man we had to have.

Chaney: That's a phase of super-selection which was important. It kept me extremely busy during the war.

All this time I was a member and later a chairman of a draft board, too. It made it rather comical because I was always writing letters to myself.

Daniel: You certainly knew in detail the governmental regulations on manpower-allocation.

Chaney: Well, I'd been catching them in selective service so I knew the--

Daniel: You knew what the rules were.

Chaney: Yes. And there are laws by which all individuals' rights may be protected. Naturally I knew all those laws. I was a selective service lawyer. And knowing those I knew just what I could insist on, and then I knew how to go and get still more. It was extremely interesting, with long distance calls to Washington, New York, Oak Ridge in specific cases involving a man we had to have.

Or we got cases from various organizations in Berkeley, the industries, General Electric, and that sort of thing. They were continually getting into trouble, didn't have things organized

Chaney: just the way we did. Men used to come to me for advice, generally governmental organizations, for help in holding men that were essential.

The selective service work was extremely interesting. It's remarkable what a wide range of people one finds in a university town. We had convicted murderers, homosexuals, robbers, and all sorts of things. The story is in their file and it all has to be looked at and adjusted before a decision can be reached.

Daniel: This is true in social services.

Chaney: Yes. It was a phase of social service.

Daniel: You did a very important piece of work for the Radiation Laboratory as long as the war was on and then--

Chaney: Then our staff was cut drastically and I wanted to get back into my own field anyway. For a period of about five years I had only casual and informal contact. It was around 1949, I suppose, maybe 1950, that I went back on an appointment basis, and I've never had a regular staff basis since. It's been much better from every standpoint to be a consultant.

Daniel: Presently, you are the person who is consulted when there is a question of manpower selection?

Chaney: Yes. It's much more than selective service. The whole reserve program is involved. The reserves are members of the armed forces and are not subject to selective service call. We have many problems, many more than during the war, involving reservists because the reserve has been built up. Then, we didn't have a reserve, at least not one comparable in size.

This is one of the laws that I was working on, getting reserves. It's a wonderful thing to have a large group of reservists and ex-reservists and National Guard. I don't happen to know just what the National Guard does. I was a member of a National Guard regiment once, but I don't know what it amounts to now. I'm sure though that the reserve program is a very good one, and I'm thoroughly in favor of it. And I'm working right now, this afternoon, until the minute I came here I was working on it and will be tomorrow morning.

All sorts of things come up. I've been around the laboratory now for sixteen years, not continuously, but in touch, very closely associated with various of the men who are running it and I know

Chaney: many aspects of it. Of course I'm neither a physicist nor a chemist. I know scarcely anything about the scientific aspects of it, but the way it's run I know pretty well. Until it got so large I seemed to know most of the people in it. It's altogether too large now to--

Daniel: How large is it?

Chaney: About two thousand. It's crowding two thousand.

Daniel: It looks like an industrial establishment.

Chaney: It's a big place.

XI. THE LOYALTY OATH

Daniel: An episode in the history of the University seems to set itself apart for comment; what part did you take in the loyalty oath controversy?

Chaney: Well, I didn't take much of a part. It was inequity that really got me into the loyalty oath argument. I was being misrepresented. It annoys me; it annoyed me then; it will always annoy me to be misrepresented. I signed it. It was a silly sort of thing, but I had signed lots of oaths.

Daniel: You mean the oath was silly, or the general idea?

Chaney: Well, the idea that it would ever amount to anything was rather silly, but I had before that signed a good many oaths. It was a good deal like the statement you make on the witness stand: "I swear to tell the truth, the whole truth, and nothing but the truth, so help me God." It was in that mood. I thought if it would help I was for it, and it didn't seem to me that it could do any harm.

Daniel: You were aware, of course, of the policy of the Regents?

Chaney: I certainly was, and approved it thoroughly.

So I found, talking around, that the situation was getting serious. And I began to hear that the faculty, at least a part of the faculty, and the Regents were in rather violent opposition. So I talked to one of the leaders of the faculty. He was on the committee appointed, I'm sure, by the Academic Senate which was meeting with the Regents. I talked to him and asked him what the position was. He didn't tell me very much but he told me that the position was sound.

I heard there was going to be a meeting and I got myself invited to it.

Daniel: This is a meeting of the faculty, the conference committee.

Chaney: It was called "The Committee of '48" or something or other. I went to it and I was perfectly appalled at the point of view expressed there. Somebody had invited a newsman there to take pictures, and maybe sound movies. They talked about a war chest and they talked about a tax. The chairman of the meeting was in a nervous emotional state. I went there feeling as though I was in a foreign country, and so did some other friends of

Chaney: mine who were there.

Now, the next morning I made direct contact with an influential Regent by long distance phone, and I told him what I had heard the night before, and I asked him what his side of the story was. I got a reasonably satisfactory answer. But he said, "If you want to get the real answer I'll phone my secretary and ask her to give you a copy of the minutes of the meeting at which this disagreement took place." I met her at Dwight and Shattuck a few hours later with a complete transcript, a correct one, of the minutes of the meeting. There was the most damning stuff in it said by my representatives. In fairness to them let me add that one of the Regents was a very skilled trial lawyer and made suckers of these men. He got them into situations where they overstated their cases, the way a clever lawyer will with a stupid witness whom he wants to discredit.

Remember that I, and so far as I know, no one else of the group in the controversy, saw this, these minutes with the consent of the man who turned them over to me. I made copies of

Chaney: portions of them, and then I did a Paul Revere. I met with engineers; I met with the medical school; I met with enough people to get a vote on the key question, that is, were we going to repudiate the 1940 or 1941 ruling of the Regents that we don't employ communists. One of my colleagues at the Regents' meeting said that an overwhelming majority of the faculty was opposed to this, and that's what started the fireworks.

Now, at that meeting, which took place about a week later, 79, about 8 per cent voted to sustain the Regents. That, I should say, is all I did. Other people were working on it, too, but I got the endorsement of the Regents on a matter where I had been misrepresented. I'm glad that I did. It didn't amount to anything because, incidentally, the Regents involved weren't very smart, either, and they weren't any smarter than the faculty. Apparently they loved to fight, and so when they could have, by making some simple concessions, had what amounted to a victory, they kept fighting for what they couldn't get and got soundly licked.

Chaney: And probably it served them right. I take no sides as between stupid people in either group, and there were stupid Regents and stupid--or rather unwise Regents and unwise faculty members. But it seemed to me desirable to get a clear statement as to where the faculty stood on the Regents' ruling, because if we were against it we should make a statement, not an unauthorized statement such as had been made by our representative. At least it proved to be unauthorized because of the fact that the faculty vote repudiated that position.

The whole thing of course became very unpleasant.

Daniel: Why do you think it became unpleasant?

Chaney: Well, we all had to get pretty tough.

Daniel: Do you think that academic people don't like to be tough?

Chaney: They like to be tough themselves but yet they don't like someone else who's tough. I had to say things about the opposition in order to get the engineer and the medical school and the agriculture vote. We had to whip this up. It was education. I wasn't lobbying, particularly. The

Chaney: engineers abominated it from the top dean down; the medical school from the top dean down; agriculture was opposed to it. We had an awful lot of votes there. They took care of the English department, the philosophy department, the economics--though it was a big bloc--they took care of those lads who were on the other side.

And of course they didn't like it. And the graduate students in the English department, I am told--this is a laugh, because it made no difference to me--agreed that they would have no contact, social or otherwise, with me. But it never mattered. There are still at least two members of the economics department who don't speak to me; philosophy...well, I guess they all speak to me, but it doesn't matter; and so on down the--well, those were the three particular sinners, as I saw them. Political science I guess was involved with econ.

But I'm not concerned with groups or with names. I was concerned with being represented properly, and I wasn't being represented properly.

Also, and this is something I'm going to discuss, the Regents' position was one which was more

Chaney: or less handed to it and then abandoned by some elements of the University, and the Regents were left holding the sack. And the man with whom I had my contacts, whom I admire highly in some ways, was in particular holding the sack. I think he was in this a very stupid man, but he didn't know how to roll with the punches. He wasn't willing to make concessions. I think, with the advice that I and one or two other people gave him, if he had been willing to follow it and concede a little, that the whole thing could have been settled. But like the faculty he wasn't willing to compromise. So I say there were stupid people, or at least unyielding people, on both sides. For neither do I have any use.

Well, you can see plainly enough that as a leader of a so-called, and it was, liberal group like the Berkeley Municipal League, I was cancelled out from that point on. Most people who were in that group wouldn't admit I was a liberal at all. Maybe I'm not. If being liberal means loving the Russians, I'm certainly not. I was on the wrong side for the liberals. I figured it out and I didn't blunder into this. I knew very well which side I was on. Maybe it's about

Chaney: the same as picking McCarthy against Bridges. Which would you take? Let's hope you never have to take one. But I'd take McCarthy over Bridges and I'd take him quick. And I'd take a Regent over a red-hot econ professor if it came to a choice like that--and I did.

Daniel: Was there something about this whole oath controversy that was of use either to the faculty or to the Regents or perhaps to both groups?

Chaney: No. I think it was a complete mess. Everything about it was disgusting. All I did was to reiterate what most of us thought all the time. The objectors got their pay, to be sure. Some of the Regents were discredited. I can't see any dividends in it at all. There weren't for me and I don't know anybody--a high official of the University with whom I was discussing this in his office just after it happened said to me very sadly, apropos my statement that I certainly got my fingers burned, said, "All of us who had anything to do with it made serious mistakes." It was a remark of a saddened man who took an awful beating, too. I didn't take a beating, much of a beating, because I didn't

Chaney: amount to much. But if I had been a high University official I would have.

Incidentally, most of the left-wingers kept quiet. The men who were most active weren't what I would call left-wingers. They were just moderate, or off-a-little-to-the-left liberals, some a little muddleheaded, perhaps. There was only one of the group that I suspect of being a bit subversive about it, and that's only a suspicion and it doesn't matter.

There wasn't any disloyalty in it, but there certainly were differences of opinion. The objectors objected for all varieties of reasons. They were the most muddleheaded and incoherent group, I've been told by a man who had a great deal to do with them, and who didn't agree with me on this. I have many friends who didn't agree with me who are still my close friends, incidentally. But I lost a good many friends, or at least I don't have close associations with most of the groups I mentioned whereas I had previously. But heaven knows I have enough left.

These things don't do any good though, and

Chaney: so I say we all lost. No, there was no residuum of benefit that I could see anywhere.

Daniel: Persons who are in academic life seldom have a straight-out confrontation with an opposing point of view that asserts itself strongly.

Chaney: Yes, but professionally we have difference of opinion. It isn't necessarily on the campus, but I have differences of opinion with other paleobotanists. I've never had a violent one, but there are violent ones. We live a reasonably cloistered life and this was a bit hard. Of course, a lot of the boys with their war chests and so on were way beyond their depth. They dramatized themselves ridiculously. It was the first time they had been anywhere near the big time, I suppose, and were getting in the newspapers, and it was wonderful stuff.

XII. NON-ACADEMIC STUDENT RELATIONS

The California Club

Daniel: Was the California Club President Sproul's invention? In 1936 he set forth its role in the maintenance of harmonious relations among University of California student bodies.

Chaney: I think it was a wonderful idea and I haven't a doubt, knowing him well, that President Sproul was fully responsible for the idea. It's the sort of thing he's particularly good at.

Anyway, he developed it and it has been useful in relieving tension between the campuses, particularly UCLA and the University of California at Berkeley.

Daniel: Was UC-UCLA the reason the thing was started?

Chaney: There's no doubt about it.

Daniel: Other campuses have developed--

Chaney: Originally we had only Davis, Medical School, UCLA, and Berkeley. Then we added Santa Barbara, and that was all that were ever around when I was in it. Do you have the dates when I was involved?

Daniel: December 18, 1944, you became faculty advisor. You resigned in 1948 as the faculty sponsor in Berkeley. You must have had an association from 1942.

Chaney: I was the faculty member in charge from 1942 or whenever it was until about 1948.

Daniel: Weere you the first?

Chaney: No. No, there had been several. I can remember Desmond was one for a very short time. I can't tell you who the others were.

Daniel: Did students develop this group? What did the California Club do?

Chaney: Outstanding students, it could have been twenty or more, were selected every year by the club and the faculty member. The students' names were turned in to the president, who sometimes added or subtracted, or asked consideration of others. His suggestions were almost always very good. Members were sent to an annual meeting at Santa Barbara, Los Angeles, or Davis, and we entertained students from the other campuses. There were parties that everyone enjoyed. During the war, when I went in, the social activities were very much restricted; and there were almost no

Chaney: student activities.

California Club was one of the very vigorous centers. All of the student leaders were in it, are still, no doubt. There were various privileges which were very welcome, especially to the boys. And of course, they had an opportunity to meet President Sproul; he personally welcomed everybody in. He did a wonderful job and made everybody feel the importance of the club. He gave his usual inspirational talks on the subject of University unity through students. I enjoyed it very much.

Student Government at the University of California

Daniel: Who was on the Executive Committee of the ASUC when you were a member from the fall of 1948 through the spring of 1951?

Chaney: Dean Hurford Stone was the president's representative throughout. I was classified, and there were others who have been since, as a faculty representative, but the term is not altogether accurate. The request to represent the faculty came from President Sproul. The faculty never checked up on me. I never made a report to the faculty. I reported to Sproul. That was an amusing thing

Chaney: and I've never known whether that's the way it was supposed to be. Sproul had two representatives, and that was just about right. Being a member of the faculty I naturally knew something of the faculty's point of view, but also I made it a point to know the president's point of view. And it may be added I had my own point of view but it usually coincided with the president's in matters of that sort.

Daniel: Then the Academic Senate didn't take any particular cognizance of the fact that there was a faculty member on the Ex Committee?

Chaney: I don't remember ever having any official contact with the Academic Senate on this. I don't remember being asked a question about it. I'm sure I wasn't appointed by the Committee on Committees. I haven't looked at the file of fifteen years ago but I'm perfectly sure my appointment came from President Sproul and that I received a letter from him when I finished thanking me for what I did.

There were several alumni representatives and they were not always very good. I think I won't go into that.

Daniel: Who were they at the time?

Chaney: I sort of hate to put this into the record, my opinion, I mean. I think they almost always voted right. Being younger, they were a little more inclined to bait students.

Daniel: What were the alumni interests at that time?

Chaney: Oh, nothing in particular. They just went along with the idea that students should have some voice in the handling of their affairs, athletics, activities of various sorts including elections, the store, dramatics; all of that is handled with supervision by the director of activities and the director of athletics. Eventually the director of athletics was the more important one in terms of money because football pays the bills.

Daniel: At that time how were athletic affairs handled? Was there a paid executive?

Chaney: Yes. Ed Welch was the director of the ASUC, top man.

Daniel: Do you remember how he was chosen? Did the students have a voice in choosing him?

Chaney: It's a strange thing that I can't say, but he certainly came in on a wave of protest from the alumni about how things were going. He was a

Chaney: very popular and a very capable man. I don't even remember his predecessor. During the war things didn't work out particularly well because many of the men who had been leaders were given other assignments. Kenneth Priestley of whom you may have heard, he's no longer living, got an assignment in the Radiation Laboratory, and the men who handled the job weren't always quite up to it. It was a very complex situation without much income because there was no large athletic program. That was just before my day.

I don't remember any major issues. I remember minor issues, and it seems to me that is about all that were ever discussed, and that those are the sorts of issues that should be discussed. This is a rather cynical remark, perhaps, but I don't think members of the student body have much basis for policy-making on major affairs.

Daniel: What were the major affairs of the ASUC Ex Committee?

Chaney: The football coach and other coaches were hired and fired by the Associated Students. That prerogative was summarily taken from the students

Chaney: by President Sproul, quite wisely, and given to a Board of Athletic Control. These names may be inaccurate but that's essentially what it was. This board was composed of perhaps four students, four alumni, and four faculty members. I was never a member of it. That committee, then, with a majority of non-students made the decisions. There had been some very bad handling. Some coaches had been fired in an unfortunate way. The president was fed up with it, quite naturally. He was able to do these things and carry a majority of the student body with him. He's a very astute man.

Whether Kerr will be able to do that I have no idea. He hasn't as yet come up against such a problem probably. He's very clever also. He's a professional negotiator, maybe even better, but time will tell.

Daniel: Did the Board of Athletic Control carry out the steps for engaging athletic coaches?

Chaney: Yes. The ASUC athletic manager, who was appointed by the Associated Students, was always consulted. He was a key man but on his own. He couldn't go out and hire, nor could he fire.

Daniel: His job was to interpret the work of the athletic control board?

Chaney: Yes, and he was depending upon his strength and the board's weakness. He was an important man, but I don't think the board was ever weakened, nor do I think any of the athletic managers were unduly strong.

Daniel: Were the students inclined to want more authority at that time?

Chaney: Just after the war we were in a mood to go into reveries about the heroic Russians, perhaps quite properly, but we don't do that anymore, anyway. Being pro-Russian was almost patriotic, as you know. They were our allies. We were helping them and they were helping us, or so we thought.

Being pro-Russian in the second half of the forties carried no stigma whatever. I suppose it began to get bad around 1948. But for a time students who were, mind you, not pro-Russian, but who were left-wing, very liberal, got just about what they wanted. Everyone was in sympathy. A lot of these boys who had been through the war. Some of the men who were elected had been heroes.

Then of course came the reaction with our

Chaney: disillusionment, when we realized that Stalin had been too smart for Roosevelt and Churchill, and with that the lines of conflict were drawn.

Actually I was away. I went to China in 1948. I had a sabbatical and was away most of the year. I think the president now has a wise policy of not permitting a faculty representative to go on as long as I did. My guess is I may have had six years. I think there's a four-year period now which is far better. Students get awfully fed up with a faculty member who's been around too long, and heaven knows he gets fed up with going to an Ex Committee meeting once a week and talking largely about trivia.

Daniel: We were talking about the president's administrative arrangement for the control of athletics. Did any of the students on the Ex Committee resent it?

Chaney: Actually, this Board of Athletic Control was set up before I was a member of the Ex Committee. I suspect it was set up around 1946.

Daniel: While you were on the board the students weren't annoyed by this arrangement?

Chaney: No, I don't remember that as a point of conflict. The points of conflict were largely on social and political matters that went outside the campus.

Daniel: Did the relationship of the student to political activity outside the campus ever come up as a problem that touched the Ex Committee.

Chaney: Yes.

Daniel: I think you mentioned something about the make-up of the student paper.

Chaney: That was always a difficulty.

Daniel: What was the problem?

Chaney: The editor was appointed by the Ex Committee, or at least confirmed by the Ex Committee. I think he was selected by the Daily Cal group, but always confirmed, and Ex Committee at that time had the right to remove him. And that was a matter of resentment. The Daily Cal was always somewhat more liberal than the Ex Committee. The president had some occasion to discuss with Stone and with me, never together, the mistakes that the students made in writing unfavorable editorials about regents, or about a benefactor of the University, for example. It just wasn't smart.

Daniel: How was that handled?

Chaney: How was the curbing of the Daily Cal handled?

Daniel: Yes. Supposing an editorial appeared that was embarassing to the president of the University. What happened then?

Chaney: He spoke to Stone probably on more than one occasion. He mentioned it to me or asked Stone to discuss it with me. Stone was his contact man. Of course Stone was then in administration. I was not.

Daniel: What did you do then?

Chaney: We certainly held discussion with members of Ex Committee whom we had reason to believe did not approve of such editorials. We debated and discussed ways and means of curbing them. One of them was to set up--this was done after I left Ex Committee--to set up a control board on publications. This has been called a muzzling and a loss of our freedom of the press, and so on.

Freedom of the press is all very well, and we talk about it and desire it, but freedom of students to run a monopoly newspaper... Remember, there is no competition to the Daily Cal. It's a monopoly. To run a monopoly newspaper without some guidance from the administration is likely to lead to a good deal of trouble.

Chaney: Somebody would come in with a motion to write commendatory letters on the faculty's opinion on the loyalty oath to all of the schools and all of the newspapers; or some political upset would take place and a dictator would assume the throne or perhaps be driven out. The Ex Committee was all for writing a letter to the new liberal leader. Now,the paper might run an editorial--

Daniel: Opposing this?

Chaney: And it certainly did. I remember vaguely the pro-Spanish, I suppose anti-loyalists far back in the late thirties. You can imagine the students would take the liberal side. Probably I would have, too, in that. That was a pretty hard one to pick the winner on though. It was the sort of thing that would have led--it was propaganda and it was a representative body of the University of California which was issuing these statements, but it wasn't a body authorized to make such statements. And it was at that point that I'm sure the administration felt embarassment, and it was at that point that we always tried to, well, I think we always were successful in voting down any such grandstand play.

I mentioned before and I'll say again for

Chaney: this record that occasionally these requests to endorse or condemn a public figure in other parts of the world came up simultaneously in the ex committees in several parts of the state, which led me to surmise, although I've never had any direct proof, that an organization was concerned with expressing this point of view, an organization that reached members of all of the ex committees of the several schools involved.

Daniel: Is it possible that certain kinds of activity have dramatic appeal to young people?

Chaney: I think young people should be interested in world affairs, in national affairs, and in University affairs. But I was never convinced as I sat on Ex Committee that they were competent to go beyond University affairs. That's what I meant a while ago when I said we handled trivia.

A bitter debate would come up whether wives of ASUC members should have cut-rate rooters' tickets to go to UCLA. The members did. They got in for 75¢ instead of $3.50 or whatever the scale was, but the wives didn't. So there would be a debate for an hour on whether the wives should go along and have cut-rate. Well, it's

Chaney: rather important to the boys with wives, who wanted to take their wives along, but the men who were talking for it were mostly unmarried.

And at one point in the debate I interjected the remark; it seemed to me that if justice were to be done we should allow these married men one weekend a year without their wives--a rather ridiculous and perhaps disrespectful remark, and it wasn't any profound conviction on my part, but the whole thing was getting rather tiresome, and I was getting sick of it. That brought the matter to a vote shortly thereafter and the wives were not allowed the ticket privilege, not by my persuasion, of course. There never was any possibility of it.

The boys and girls in Ex Committee I also knew in California Club. Almost all of them were members, or if they were juniors, they were about to be. The seniors were almost invariably members. Long before I finished on Ex Committee I had been through with Cal Club, but they overlapped. And I knew some of them quite intimately to begin with, not always with the same

Chaney: point of view, but I had known them. I had known student leaders since the eary Forties, actually for a couple of decades before that, but especially around 1942, I guess. Matters of this sort had meant comparatively little to me, at least I thought very little about them. That's why I was so nonplussed when you asked me what some of the issues were. I can't think of any but trivia, and not many of them.

Daniel: Were there deficits in the athletic program when you sat on the Ex Committee?

Chaney: We were in a rather prosperous period financially. Those were the good days. I was sitting on the Finance Committee, which the faculty representative and the president's representative always did, along with the graduate manager and the president and the vice-president, and perhaps one other student representative. Also the University business manager, Bill Norton, sat on it. I suspect the grown-ups had the majority, probably a four to three majority--that wasn't an accident--in making policy decisions on funds and budget allocations.

But things were going very well. There were

Chaney: no deficits, though before I got out there were threats of deficits. I think bookkeeping can keep deficits off the books for a while, as you know.

Daniel: I'm told that for the last ten years there has been a deficit in the athletic program.

Chaney: That would take it to 1949 and that would take it into the days of my membership in Ex Committee, and probably there were deficits. I seem to remember so. But they weren't especially serious.

Of course if the administration were budgeting the athletic program it could cut out crew and a lot of minor sports which are expensive, and there wouldn't be a deficit. You can be sure that the University business manager would do exactly that. They'd run no deficit athletic program.

Well, I think the students have a pretty fair point there: if the University is really running athletics it should take the responsibilities. But students wouldn't like the decisions that would be made to curtail some aspects of the program. It might be necessary to cut out dramatics.

Chaney: The Daily Cal may not pay its way. Maybe we'd only have two Daily Cals a week. I have no idea what the results would be, but I can assure you that if the University business manager had autonomy there'd be no deficit. There couldn't be.

Daniel: Were there any complaints about the service of the student store when you were on Ex Committee?

Chaney: Yes, and I think there were shifts in the top men from time to time. There unquestionably was inefficiency in the store and elsewhere. No one thinks that everyone is efficient. Running the student store is very difficult.

Daniel: What are the chief problems?

Chaney: One of their very great problems was that employees stole books.

Daniel: That was a large problem really?

Chaney: Well, tens of thousands of dollars a year. The employees stole books and sold them to their friends at cut-rate.

Daniel: This was criminal action.

Chaney: It was.

Daniel: Was this handled as criminal action.

Chaney: It was discussed never quite as bluntly as I have stated it, but I had what I considered the facts.

Chaney: One or two students were caught and fired or perhaps dropped from the University. The details of that I can't remember other than that safeguards were put on to prevent it. I can't even remember the safeguards.

Daniel: They worked?

Chaney: I doubt it. Incidentally I saw today or yesterday the story about stealing, but that was shoplifting. But I'm talking about stealing by temporary employees, students who worked for ten or twenty hours a week--

Daniel: Who would walk out with the stock and sell it.

Chaney: Yes, or who would turn it over to friends who came in and not ring up the sale. That was one of the things that was brought out. Whether all that was brought out in open committee I don't know. We used to have executive sessions when all salaries were discussed, and when this touchy sort of thing was discussed. It's a long while ago. I remember only the bare facts. It was established to my satisfaction that the store was losing because of stock depletion of that sort. Of course they were stealing candy bars, taking up little things and walking out with them. That will always be a problem, I suppose, perhaps not a very large one.

Chaney: The story in today's Daily Cal indicated that--

Daniel: Well, a $20,000 loss in a year is a considerable loss. I think that was the figure that was quoted in the paper today.

Chaney: I would say that the losses from theft by employees were estimated as being higher than that, but it's been so long ago that I can't remember.

Daniel: In any case, it was as difficult to run a student store as it is now.

What else about the store?

Chaney: Oh, we'd have a discussion of the Bear's Lair, which was the restaurant, the fact that the price of hamburgers was going up from 10¢ to 15¢. I suppose it's 30¢ now, but it was at about that level in those days. The reason for it was that beef cost more and help cost more. This was a protest of inflation which we always protest whenever we feel the bite of it.

Nobody is ever satisfied with the student store. I think it's a thankless job. I can't imagine anyone wanting to do it.

Daniel: Now it's a self-service arrangement which I think has changed matters.

Chaney: A gate was put on the book counters so that unless a student actually had a book under his clothing it could be seen. Even that might not have kept the employees from removing books. Suppose the gatekeeper was a thief. I know the present gatekeeper and she certainly is not. I know one of them. But if the gatekeeper was a thief that would be a good place to start things, wouldn't it?

Daniel: Yes, I suppose so.

The students did not have much to say about athletics, but they did have something to say about the store.

Chaney: Oh yes. They had a good deal to say about athletics, about giving raises to coaches.

Daniel: Did they make decisions like that?

Chaney: Oh, they suggested it, yes. They certainly did. And they went much too far sometimes and the Finance Committee had to curb them. They didn't have the final say.

Daniel: You had a controlling vote of adults on the Finance Committee?

Chaney: Yes, in effect it was. Matters of that sort frequently were handled outside.

You can see why over the years there has been student resentment towards adult administration

Chaney: members of the Ex Committee. They were the villains in this skit. If they'd been just students they'd have--

Daniel: Well, they needn't be villains.

Chaney: They are villains from the students' standpoint; they aren't villains in fact. They are presumably sensible people who know how many dollars we have and how we have to spend them.

Daniel: If the students are given an accurate picture of the possibilities inherent in a situation--they're not stupid people, they could see what the possibilities are.

Chaney: Ordinarily it was quite possible to persuade a majority of the students. In fact, we never had, while I was on Ex Committee, a majority which was consistently anti-administration. Occasionally there would be something voted through that was against administration policy, and by administration I mean largely Sproul, who was a strong man and who was usually right about such things. Probably always right, as I would view it.

But only occasionally was there a vote that would violate his wishes. I can't speak from

Chaney: memory on this but I have an idea that maybe it was changed afterward by another vote. Certainly nothing important ever happened that was against his policies.

Daniel: What besides the store and student athletics claimed the Ex Committee's attention?

Chaney: Elections, Judiciary Committee, Student Welfare Committee--

Daniel: What about the Student Welfare Committee? Was that important? What did it do?

Chaney: It was quite important. It watched out for "Fair Bear" wages and for racial discrimination. All these are subjects that would be of great interest to students, and properly so. Housing.

Daniel: How could the students take any action in the field of housing?

Chaney: They couldn't, but they could vote resolutions.

Daniel: About what?

Chaney: Probably what they did was to address communications to the president pointing out what he already knew, but emphasizing the fact that they didn't like it if there were racial discrimination, or if conditions were unsanitary or dangerous.

Daniel: Did they try to establish any standard for acceptable housing facilities?

Chaney: No, I don't think they ever got that far. The University has its own standards, and I'm sure no student ever got into the technical side of housing.

Daniel: There was no "Fair Bear" stamp of approval on a house, let's say.

Chaney: No, I'm sure there was not. Students were less interested in housing than they were in wages and in racial discrimination of various sorts.

Daniel: The students' housing at that time was probably poorer than it is now.

Chaney: There weren't as many dormitories. Yes, there were all sorts of houses.

Daniel: Wasn't better housing a pressing need for the students?

Chaney: Very. But to my knowledge students never got to the root of that, to urge the Regents to support housing. For years the Regents were unwilling to do so. Whether or not that was sound at the time I have no idea. They were surely opposed to it and now they have accepted this as one of the University's responsibilities. I doubt if students had anything to do with that change of heart.

Daniel: What do you see as the effective role of student government? As you saw it working, do you think it was a valuable experience to the students who were on the Ex Committee?

Chaney: Oh very. They handled their affairs. They determined the dates when various parties could be held, and the budget which the junior class could have for its junior prom. Actually, I think I'm wrong about that. I think the junior class determined its budget from its class funds. But there was frequently an ASUC subsidy.

And there were many other types of University affairs, the Glee Club or whatever, in which the ASUC set aside $10 or $100 or even a substantial amount on occasion. Whether the band would go to Seattle for a football game. These were matters that had to be referred to the Finance Committee, of course, and the Finance Committee didn't always say no by any means. Whether the tennis team should be sent to an eastern tournament in view of its record. If its record was poor the students would usually vote not to send it.

Actually, the tennis coach would make the

Chaney: recommendation in a case like that. But I'm quite sure he didn't always get what he wanted, or at least he didn't get as much as he wanted.

Here's another. There are national and international student organizations that held meetings, sometimes even in Europe, and funds had to be set aside for delegates to attend those meetings. Affiliation with those organizations was discussed. Some of them were left-wing. That was brought out and the left-wing element of Ex Committee would be all for continuing. The right-wing element would be all for breaking with it.

Daniel: Since right-wing and left-wing characteristics change over a period of time, what were the characteristics of the right wing of the Ex Committee and what were the characteristics of the left wing of the Ex Committee?

Chaney: I think the left wing wanted to spend the money whether we had it or not, and the right wing was more likely to look at the balance and see. The right wing was certainly not interested in memorializing the legislature of a foreign country about some of its acts or the acts of its executives. The left wing was likely to be interested,

Chaney: especially if it were something that was on the left side, as it usually was when such things were brought up.

Now these lines are rather easily drawn.

Daniel: Would the left wing be more critical of the administration than the right wing, do you think?

Chaney: Very much more.

Daniel: Was the left wing for expanded student services in the store, or didn't it care?

Chaney: I suppose it was but I don't remember. I do remember that there were always some students who were against the present management.

Daniel: Are there any other activities--

Chaney: I mentioned the scheduling of parties. Sometimes there would be conflicts. Two important organizations would want a party on the same night, possibly even in the same place. All these things had to be resolved. They were handled first by--it may have been the Student Affairs Committee--I've forgotten. And almost always members of these committees included not only elected Executive Committee members but others who were drawn in. And then some of those people were elected, when they got to be seniors, to Ex Committee if

Chaney: they did well politically. The committees were a training ground for the Executive Committee.

There was always something like that and I said a while ago, not respectfully, that they were trivia. No one really cares whether a student club has its initiation on the 13th or 20th of December. But we might care a good deal, it might affect all of us to some extent, at least, if we had written letters from an official University group praising Stalin or condemning de Gaulle, or whatever it might have been. That sort of thing may bring lasting harm because it gives a certain character to the University. I don't think the University should have the reputation of being a group of stalwart conservatives, mostly Republicans. But I certainly don't think that it should have the reputation for being liberal in the extreme sense, left-wing is what I mean. That would not be pleasing to our state assembly.

Incidentally, occasionally our students would go up and visit the legislature. I don't think we ever invited legislators down here but students would go up and visit the legislature in Sacra-

Chaney: mento and talk to them to show that they were sensible and not a group of irresponsible redhots.

Daniel: Then you feel that the University as a tax-supported university has a different background for the students than a non-tax-supported university?

Chaney: Oh, of course. The taxpayer determines whether we continue.

Daniel: In a way then, the faculty representatives are sort of watchdogs for the administration, to avoid embarassing situations.

Chaney: Yes. That's why students, for several years, have been arguing vigorously against it. They've brought up motions in Ex Committee--imagine!--to legislate against having such appointments. Well, they can't do it because the president in all cases makes the final decision and he has appointed them.

I have to summarize this general feeling that there was always a majority of the student members of Ex Committee who were in favor of most administration policies. There was always a majority which acted wisely in strictly student affairs having to do with time and place and the allocation of minor amounts of money. There was always a small group which disagreed, quite vocal, often

Chaney: of minority races, some of whom may have been disloyal, but all of whom were, by their behavior, to be characterized as left-wing, but always a minority in my day. The vote was never close. But the reason why it wasn't was that the three adults almost always voted against that group.

In other words, a student who thinks that adults should be removed is quite right if the thesis is sound that the students should have complete control. The results might be quite different with students only.

Daniel: Were the students voted into student government office on their personality or were they voted into office because of their ideas on student government?

Chaney: Certainly both. The high officers of the Associated Students always had held various posts. They had been class officers, they'd been members of various committees. Being the chairman of a homecoming committee is a tremendous job. It takes a boy maybe 100 or 200 hours. It's a great responsibility. A boy who does that well is likely to receive some recognition. Perhaps he'll run for representative-at-large on Ex Committee and be elected. He'll always mention his committee

Chaney: appointments and attainments. Then if he is vocal and well thought of he may run for president of the ASUC.

Daniel: It was identification with his student record which put him into office.

Chaney: Yes.

Athletes were encouraged by Waldorf to run for office. I always thought that was a good thing, except that athletes during their season of participation were rather tired and very busy and often away on trips, so their attendance record wasn't good. We had a number of top-flight athletes on Ex Committee and in California Club during my contacts with these organizations. And it was always a good idea to have them. In general, they are too busy to be as effective as someone who has the Executive Committee for his major activity.

Daniel: Has it ever occurred to anybody that the students in outside activities in these student offices put an immense amount of time into what they do?

Chaney: Yes, and they generally have to put in another semester to get in their units because they take a minimum load, twelve units.

Daniel: They do reduce the number of units they take?

Chaney: Oh, the smart ones do. I used to advise them to. And a great many members of Ex Committee flunked out and weren't back next semester. Maybe they couldn't take it.

Daniel: Do you know if this generally occurs?

Chaney: I don't know about generally, but it happened while I was there. The weaker students flunked out, and almost all of them were on a reduced schedule, a minimum schedule. They should be.

There is a small stipend for certain of the officers. There is none for representatives-at-large. The president and the editor of the Daily Cal and the business manager of the Daily Cal, or he may be called the advertising manager, all of those were salaried positions, or stipend positions. The amount was perhaps $500 for a year. That was justified fully on the basis that they spent an enormous amount of time, and had no opportunity to work and earn money. I think there was never any question about that. There was often a wish to increase the amount.

But the details of all this are pretty largely gone. My feeling is that most of the matters

Chaney: discussed for hours were on a rather low level of importance. And often, perhaps, just for the fun of arguing. There was a lot of that. Our spirit was almost always good. There were rarely quarrels which weren't healed by the end of the meeting.

You asked a while ago about the cliques in elections. Some fraternities and sororities would often get together for a candidate. I wouldn't say that it was fraternities against non-fraternities because the non-fraternities would always have won, on the basis of the quantity of the vote, but there were usually organization and non-organization candidates.

XIII. THE CONSERVATIONIST

Daniel: When did your conservation activities, as such, begin to take shape?

Chaney: I was raised in a rural community on the outskirts of Chicago and during the time I lived there it became rather thickly settled. The natural conditions were gradually destroyed. How aware I was of that I don't know. But when I came to California to live in 1922 I went up the Redwood Highway and there I saw the results of over-cutting redwood forests on a wide scale.

At the same time I saw forests which had not been damaged, the finest forests I have ever seen or have seen since. So I immediately had the impact of over-cutting in the redwood area. The opinions and guidance of John C. Merriam directed me towards conservation. He was one of the founders of the Save-The-Redwoods-League, and one of the three men who had first recognized the importance of a conservation organization to save the redwoods.

Gradually, through Dr. Merriam, I became more and more related to the Save-The-Redwoods-League

Chaney: activities, first as a counselor, presumably in the late twenties. At that time I had been doing a great deal of speaking for a bond issue in the 1928 election, a ten million dollar bond issue which was to provide money to permit the purchase, with equal amounts from private funds, of Bull Creek Flat and other much needed areas such as Oak Knoll and the Rockefeller redwood grove.

Natural Areas

Chaney: At the same time there were other state park projects. The Save-The-Redwoods-League was interested in Point Lobos. Ray Lyman Wilbur was chairman of the Point Lobos advisory committee of which I was a member with Joseph Grinnell,a famous zoologist. Between us we got across the idea that Point Lobos should be kept in as natural a state as possible. It had been under private ownership for years. Part of it had been intensively used by fishermen and picnickers.

Arguments were advanced to support its return to a natural state. It was pointed out that if a tree falls down in such a place its trunk should be allowed to lie there and rot as a part of the environment, providing food for various

Chaney: micro-organisms and insects, which in turn provide food for other insects and for birds. The idea of natural reserves is becoming much more widespread. I recently saw a statement about a similar park in Illinois. They develop the same ideas.

I was getting lessons in conservation from men like Merriam--

Daniel: I think it worthwhile to spend a little more time on this concept of a natural area. You're thinking of a place which is entirely undisturbed.

Chaney: Undisturbed, insofar as such a thing is possible, by human activties or the imbalances that result therefrom. For example, no one knows about the carnivores of the Point Lobos area--it's named for a wolf--whether there was ever a wolf there I have no means of knowing, and it doesn't matter. But if there were carnivores there, bobcats, mountain lions, as there occasionally must have been, there are probably some bobcats there still. They have been largely destroyed by human neighbors. That imbalance means that some other types of life become more common as a result of not being kept under control. Rodents, for example, and perhaps

Chaney: the micro-organisms that affect rodents thereby become more common. We have something of the sort going on in the state today.

Daniel: Well, would you say there is a general movement to preserve certain areas throughout the country in this undisturbed condition?

Chaney: Yes. It's unpopular because people want to use these areas for picnicking. The reaction is that the state has contributed their tax money for the purchase of these areas, and therefore they should be allowed to enjoy them.

There are conflicting factors involved in the National Park Service and in the Forest Service. The latter is more or less a business organization. It's in the business of selling lumber, selling grazing rights, and it also regulates and regularly permits camping.

The National Park Service has nothing to sell. One of its main purposes is the preservation of natural areas on a national scale.

The taxpayer is likely to be very restive if he can't camp in a national park. He points out that the Forest Service for which he pays taxes permits him to do so. Why doesn't the National Park Service? There is no inconsistency involved.

Chaney: The Forest Service is, in effect, a management agency. The National Park Service is a conserving and esthetic agency.

Daniel: It's a matter of public education, isn't it?

Chaney: Yes. We've run into a good deal of criticism in the redwood parks for not permitting people to camp wherever they pleased. There are hazards, very serious hazards in connection with falling limbs. People would be killed in considerable numbers if they were allowed to camp regularly under redwoods because a redwood branch falling a hundred feet is really lethal. It isn't a safe place. I've camped under redwoods. I don't think I ever want to again. If I did, and other people came to that same place, there would be destruction of the root system of the redwoods nearby. The roots come very close to the surface. Even walking around on them involves some destruction, and putting large numbers of people through, as has been the case at Big Basin has resulted in the loss of a number of trees; also in Humboldt and in the groves to the north.

Big Basin has been near a metropolitan area and has had a longer period as a state park than

Chaney: most of the state redwood parks to the north. There has been a need for getting over to people the idea that some limited areas should be kept in their natural state. I think that the Save-The-Redwoods-League and its policies are on sound ground. For many years I have been working on the committee having to do with the esthetic values and educational aspects of the state redwood parks. On occasion I have gone to Sacramento to act as a witness at hearings where laws came up which threatened what we consider to be the best use of the Redwood and other parks--

Daniel: This has been an effective organization, you think?

Chaney: Well, yes. It is a model for conservation organizations the world over. It has been very successful financially. It had the direction of the Drury brothers; at first Newton, and then afterwards he went to become director of the National Park Service around 1940, a little later, perhaps; then his brother Aubrey. There has been a series of outstanding men: James T. Grant, John C. Merriam, Duncan McDuffie, and Arthur Connick. I'm sure I've missed one or two of the presidents.

Chaney: Among the directors have been William Colby, Frank Wentworth, and Walter Starr. Most of these men have also been involved with the Sierra Club and similar organizations.

Walter Starr is an outstanding man--he's in his middle eighties now. He's still very active as a director of the Save-The-Redwoods-League. In due time, I've forgotten just when it was, late Thirties perhaps or early Forties, I was asked to be a director, a member of the board of seven directors, and have been a director ever since.

Daniel: Did this limit your activity at the educational level?

Chaney: Oh, no. It's in addition. The directors mainly have to do with policy and with determining how funds are to be expended.

Arthur Connick, the present president, was raised in the redwoods, the Humboldt Redwoods, and knows a vast amount about values and knows the best way to acquire land.

Other members of the board of directors are: Richard Leonard, a young member, who is a Sierra Club man and knows a good deal about land use;

Chaney: Walter Starr, who knows both about use and values from long experience, and who is presumably one of the founders, and a former president of the Sierra Club.

I'm the only college professor in the lot. The rest of them are for the most part successful business and professional men. Norman Livermore was one of the outstanding men who was a director during the time that I was.

Well, when Newt Drury went to Washington to the National Park Service he naturally had vacancies on the advisory board, and I should think about 1943 he suggested to Secretary Ickes that I be appointed, and I got a letter from the Secretary and accepted. I was very much occupied with other matters at that time.

Daniel: You were then put on the advisory board of the National Park Service. How many members are there on that advisory board?

Chaney: Eleven, I believe.

Daniel: And they are drawn from what fields? Do you know?

Chaney: They're conservationists.

Daniel: They're all conservationists?

Chaney: Some of them are state park men. Some are university professors. There is almost always an engi-

Chaney: neer, and a landscape architect. It's a representative group. Other men were Alfred Knopf and Bernard DeVoto. They were both members of it while I was, men who write and publish books on conservation.

Anyone who has an interest in conservation and represents a sound point of view is likely to be asked. I had about ten years of it but actually now they have about five years. Whether that's a good idea or not I don't know.

Daniel: The term of serving on this board has been reduced?

Chaney: Apparently it has, but that was just going into effect when I was leaving and I don't know the details of it. At any rate I had about ten years. It was nearer twelve, probably.

Daniel: Do you think you brought something of particular value because you came from this area or because of your experience in conservation or because of a combination of all these influences?

Chaney: I suppose so. Herbert Bolton was a member during part of the time. It was interesting that there were two U.C. men.

Daniel: Why was he a member?

Chaney: Because of interests in the historical monuments. The National Park Service has more historical monuments than it has national parks. They are smaller but there are very many of them. Bolton was an outstanding man in American history and an extremely valuable one.

The emphasis was on geological, paleological matters, and park matters. Most of the geological parks are in the West. I have visited all of them, some of them many times and have made reports which I suppose were largely ignored. But generally the recommendations came through.

Daniel: What kind of recommendations did you make that you think might have been ignored?

Chaney: (Laughter) One of them, around 1944, has just come to light within the last year, a museum over a fossil deposit in Utah, Dinosaur National Monument. I and my group who went there with me developed the idea that we should put a building over one of the best fossil localities and then work out the dinosaurs and leave them in situ in the rocks enclosed in that building. That's going on right now. They've put up the building. It was dedicated within the last year.

Chaney: It wasn't, perhaps, that my recommendation was ignored, but that the recommendation involved a couple of million dollars and we had to wait until they got it. I'm sure no one thought the suggestion was a poor one, but no matter how good the suggestion one has to wait for funds.

Daniel: Is Dinosaur National Monument entirely supported by federal funds?

Chaney: It's largely government. It's Project 66, I believe it's called, a ten-year project which started in 1956, and is designed to increase the usefulness of parks by adding roads and museums and installations of various sorts. The parks ran down very badly during the war. This program is going on extremely well under the directorship of Director Wirth, who followed Newton Drury.

Now, one of the things I always had allowed for was not to interfere with the biota of a park. Big Bend is the only park that has mountain lions in it, and unfortunately a mountain lion, out of curiosity, followed along after some children on a trail. It didn't molest them but it scared

Chaney: them nearly to death. There was a parent there, too, I think. It would be a rather frightening experience. The superintendent of the park was all for shooting the mountain lions. We immediately stopped that. A suggestion was made by me or someone else that we should fence in the children.

Daniel: (Laughter) Yes. That seems more practical.

Chaney: After all, that was where the mountain lions lived. There's no national park elsewhere in the world where mountain lions may be regularly seen, and the idea of destroying the mountain lions, well, it--

Daniel: There are other places where vast areas are reserved for animals. This is true in Africa and everyone accepts the idea there.

Chaney: There are some very difficult situations which arise in a place like Yellowstone, or even Yosemite where there are too many bears, where people can't be persuaded not to run risks and make close approaches to them. The whole matter of game management in the national park is difficult because of hunters. It seems really too bad to kill four or five thousand elk every year, slaughter them

Chaney: and either throw them out or provide government agencies with the meat if it can be handled that way.

Mountain range in Yellowstone just can't support all the elk that are born every year and grow to maturity because the carnivores have been killed. It's a matter of imbalance which results from our human interference.

Even the buffalo, the most glamorous animal in America, perhaps, and the animal which is on the Department of Interior seal, the buffalo has been and is in excess in Yellowstone Park, and yet it's very difficult to apply any sound rules of game management, any population control, because of the reaction of hunters, who are taxpayers.

It's all a very difficult matter and problems of that sort are the problems the advisory board had to meet. I and always someone else who knew more about it than I, plus the employees of the National Park Service, who were professional game-management men, worked at the solution of these problems.

The future of redwood conservation, of the

Chaney: conservation movement in California, is rather difficult to predict. We don't have all the redwood acreage that we should have. There's about 60,000 acres, which has a value of, oh, four or five times what has been paid for it. Of course, everything has gone up, but it represents an extremely successful investment of public and private funds.

I am emphasizing in all my reports at annual meetings the need for inaugurating greater use of the redwood parks. We bought them. We have more to buy. But more people go to see Trees of Mystery, which is a sort of vaudeville show with corny phonograph records placed here and there, more people go there and pay fifty cents, or it may be a dollar now, then are likely to stop at our educational centers at Richardson Grove and elsewhere.

Incidentally, that is one of the things that I have a good deal to do with, getting materials for the educational centers and discussing with the ranger naturalists what they should say about them, not only in the state parks but in the national parks, too.

Crater and Grand Canyon are two parks with

Chaney: which I've had a great deal to do, in terms of their ranger naturalist programs.

Daniel: Is the ranger public education activity popular?

Chaney: Yes. It's free service and for many other people there isn't anything else to do. It's something like going to church.

Daniel: Most people have questions about the things they see in the park. They want answers.

Chaney: I think so too. It's a very healthy sign. Questions are asked, even very simple questions and there should be people to answer them and ranger naturalists in general are able to answer the questions. I'm enthusiastically in favor of it. I don't believe that nearly all the people that have contacts with rangers have any serious or lasting interest, but it's fine just to have a preliminary contact if nothing more.

Daniel: What about the children?

Chaney: I think that, by and large, the educational program in the state and national parks is going to introduce a new kind of people when the children of today are full-grown and are paying taxes and voting. I think they'll be much more willing to support state and national parks and other reserves because as you say they had their first

Chaney: contacts when they were very young, when the world was opening up in a delightful way for them.

Daniel: The National Park Service also handles the administration of national monuments as well.

Chaney: Yes, and historical monuments.

Daniel: What about Craters of the Moon National Monument?

Chaney: There wasn't much to do there, except to build a few trails. It's a recent lava field. With the records that are being kept it's going to be of great scientific interest as centuries pass to see what happens to it. There will probably be some more lava fields in that area. I don't think that is the last one. It's what we call a drive-in or drive-through park, rather than a resort park such as Yosemite and Yellowstone.

Daniel: There are no camping facilities?

Chaney: It isn't a very suitable place for most people to camp anyway. I hope camping facilities won't be developed at the expense of naturalness. Of course, visitor use means more trails and more destruction. The Yellowstone Mammoth Hot Springs area has been almost ruined by visitors. Actually, it's possible the hot water has been shut off down below anyway and that it would have

Chaney: changed without any visitors, but in my own experience during a period of thirty-five years or more it has gone back very badly.

Daniel: Is the development of the Jackson Hole country within the framework of the national park system?

Chaney: Part of it is in the national park. At Jackson Lake there is an arrangement of accommodations amid scenery of great beauty.

Separating Resort from Park

Chaney: The National Park Service encourages this idea and has experts who give good advice to concessionaires as to how to proceed. It is hoped, and this is one of the policies that was developed during the time that I was on the advisory board, that gradually all concessions will be moved out of the parks, including the Curry establishment in Yosemite. There are some advantages of a place like Ahwanee and the Lodge where beautiful views may be seen. The hotel on the rim of Crater Lake has one of the most beautiful views in the world for me.

But I think we shall see in the course of a few decades all of those buildings removed to

Chaney: places outside the parks, and the number of buildings, perhaps even the number of roads, greatly cut down. There are altogether too many roads.

Now, here's an interesting aspect of Yosemite showing you how man interferes. The water which is taken out of Yosemite Valley, and not only for park use but more likely from the Merced River for irrigation, has lowered the water table in the valley and grasses can no longer compete on equal terms with trees. As a result the meadows, which used to characterize the floor of the valley, are gradually giving way to forests of oak and pine and Douglas fir. Now, serious thought has been given to getting rid of them but it's almost impossible. The cost of keeping even with the forests in the floor of the Yosemite Valley is so great that I doubt any appropriation could be made to handle it. At best we shall have to have a few beauty spots maintained. Yosemite has been changed by man. It may not be so simple as that--largely by another water table. Anyway, for someone who conserves trees, here I am urging that they be chopped down, but I don't believe in trees where there should be grasses.

Daniel: The characteristics of the place have been changed because of the changing circumstances.

Chaney: Just imagine the reception they would get if I put forth the idea--I'm not even saying I favor it--of abandoning the firefall. If you don't have a hotel up at Glacier Point you won't have a firefall and you won't have a hotel at Glacier Point when the hotels are moved out of the park. All that's in the future.

Daniel: The firefall is a gimmick and I think it's entirely out of place.

Chaney: It's ridiculous, like watching the bears eat garbage.

Daniel: Probably twenty-five years ago the firefall was more important than it is now.

Chaney: I shouldn't wonder. The purists feel that a national park is a place where there are special values. You can dance and go to the movies in any city, even town: but Yosemite and places like it have values which can't be had anywhere else in the world. It isn't possible, to have people fill out a questionnaire before they're permitted to go to Yosemite saying what their purposes are, and to turn them out if they want

Chaney: to go to a movie. Nonetheless, the conventional amusements should be controlled. In my opinion, gradually, as public opinion supports it, they should be discouraged. I'm quite sure of this in the case of Yosemite. With people like Mrs. Tressider and Walter Starr running the concessions I'm sure that changes will come in park accomodations.

Don't get the idea that I think the Curry Company will ever move out during Mary Tressider's lifetime, but some time in the future unquestionably it will, and people like her who would be landowners will not be averse to seeing the change, but it will take education.

Daniel: You worked in the Redwood League, and you served on the National Park Advisory Board . Have you continued a relationship with the National Park Service?

Chaney: I'm a consultant. An occasion doesn't arise often when they consult me but I have had status and I'm still a member of two or three advisory boards of smaller areas which don't meet very often. I can't even think which ones they are,

Chaney: outside of Point Lobos which hasn't met for ten or fifteen years. It's well in hand, doesn't need any advice.

Daniel: Have you any other conservation areas which interested you?

Chaney: Not very much. Most of the local groups that I have been asked to work with are rather impractical.

Daniel: Do they usually tend to be?

Chaney: The small groups are. They're zealous people but they don't have sufficient experience.

Daniel: Supposing a citizen sitting somewhere becomes agitated, perhaps about some changes in park property. What can he do about it?

Chaney: Fremontia Park is an example.

Daniel: What can you do as an individual?

Chaney: Probably not much. The move to preserve Fremontia Park lost.

Daniel: Why?

Chaney: Oh, it wasn't much of a case either way. The argument that somebody's house shouldn't be taken away from them is too silly for words. I might not think so if it was my house. The man would be reimbursed for it. That was a fairly silly

Chaney: argument. To say that parks are being taken away from us involves a statement of principle, and that would have been a reason for voting against it.

I'm sure I voted against the park being used for a firehouse following my conservation principles, but it mattered to me so little that I could have voted either way.

Daniel: Do you think the natural resources in our own regional parks are being well handled?

Chaney: I'm not sure that land is not being sold for residences that should be kept in the parks. I hear stories right along which I've never checked. I hear stories about Tilden Park and related areas, being sold for housing developments. I don't know what happens to the money. Obviously it's public land and public funds. There is no corruption involved. The worst that can be involved is bad judgment. I don't know to what extent--in other words, I haven't informed myself very fully about it.

These parks have had very little publicity, probably not enough. Hardly any of us know much about them.

Daniel: Do you think there is an increasing awareness about our natural resources?

Chaney: Oh, the whole emphasis is increasing at a tremendous rate. No one thought anything about it when I was a child. I didn't live in California but I know they didn't from the consequences.

In most parts of the world, over almost all of Asia, for example, no attention has been paid to conservation. That's the reason China is in such a desperate condition. They pray to false gods, at the present time. China's economics have been ruined by lack of conservation and other factors.

If China is ever to be a self-supporting and progressive nation, it will have to build back its forests and soil and water resources. It doesn't make any diffference whether it's communists or capitalists doing it, whichever can do it more effectively. It will have to be done before China can pay its way, to a high standard of living.

I think that most people in the United States are coming to realize that conservation is their business, and is profitable. We have to do it if

Chaney: we are going to maintain and increase our standard of living. In Europe, too, it's becoming a widespread idea.

Tree planting and conservation has been done in Germany for decades and is being done on a very large scale in Japan. There they have crops, timber crops, just like the wheat crops except it takes thirty to forty years for a harvest. It has to be a differently run business, of course, Cryptomeria, a relative of the redwood, is the principal tree in Japan, and bamboo.

Daniel: Do you think the Civilian Conservation Corps had any effect on awakening people's interest in nature?

Chaney: Oh, I guess so. There were lots of boys who were underprivileged, in terms of education, at least, who worked in it. They must have developed some of the senese of the value of conservation. We were spending money on conservation. This was in the thirties wasn't it, during unemployment?

Those were the better results of the Roosevelt administration as I look back on them.

Daniel: More money was spent tidying up the national parks in that period than had been spent in the past?

Chaney: Well, it was spent on the C.C.C.

Daniel: And what did the C.C.C. do in conservation?

Chaney: They went into parks and did work. They straightened out the creek bed in Muir Woods, for example. I don't think they did a very good job, but anyway they spent a lot of time and money on it. They went into public and private lands, mostly public, and where the program was well thought out they were constructive. A lot of it was just a waste of time, of course, as it is with all government projects, and I suppose all private projects have a little waste, bad judgment. That is the penalty anywhere, whether it's public or private.

Daniel: Do you think that there's enough natural area for nature study?

Chaney: There is now. Of course there in in any large park area that is natural. Yellowstone Park has some very unnatural areas, but there are still a lot of geysers that no one ever goes close to, that are perfectly natural. They don't have any trees in the Rockies, any real forests like we have in the West, so there aren't any forests to worry about in particular, but they have lots of big

Chaney: game. That's unnatural in the sense of being too numerous and of the wrong kinds.

Yellowstone is the least natural of the big parks. It's the oldest. It's the way they will all be if we let our human mismanagement continue. Yellowstone can be saved. But it may not be. The new concessions are said to be not very attractive, but we don't need to go into that.

XIV. IN THE STREAM OF POLITICAL HISTORY

Daniel: Going from conservation to citizenship, what were your feelings as a young voter?

Chaney: My political bias was that of most northern respectable people. I was born in a Republican family. My father in 1912 was a Bull Mooser and I voted for Theodore Roosevelt. I voted for Wilson in 1916. Wilson was elected in 1912, wasn't he? Well, I must have voted for him only once then.

Then we came to Harding in 1920, and whoever it was in 1924. Neither of them looked good to me.

Daniel: We can go on from the Wilsonian period. What was your first voting experience?

Chaney: For Teddy Roosevelt in 1912.

Daniel: Why were you attracted to Roosevelt?

Chaney: I had very little political experience. I voted the way my father did, I suppose. That's the only reason I can think of.

Daniel: The pull of Roosevelt's personality at that time wasn't something that commanded your attention?

Chaney: I suppose he interested me but I can't remember.

Chaney: I can remember merely that my father was a very enthusiastic Bull Mooser. By the time Wilson ran in 1916 I was getting interested in what was going on and I voted for him.

Daniel: What drew you into the Wilson camp?

Chaney: Hughes was running against him. I liked the Wilsonian philosophy. Wilson had been president for four years.

Daniel: What specifically did you like about the Wilsonian ideas?

Chaney: It's pretty hard to remember. I was beginning to realize that the Republican type of government was often prejudiced in favor of the capitalist group in America. I was naturally liberal-minded, as most young people are.

Daniel: What were you liberal minded about?

Chaney: Perhaps inequality of distribution of wealth. I remember in my early teaching running into the fact that a couple of German butchers in California owned more acreage than the state of Connecticut or Delaware or some place. It was Miller and Lux. It amuses me. Since that time I've been entertained on the Miller ranch a number of times. It's just the same old ranch. It's a

Chaney: part of the Miller millions. But at any rate, it was the inequality.

Daniel: What inequality?

Chaney: Inequality of opportunity, inequality of wealth. I thought that many people weren't paid enough; and that was an economic factor. In capital versus labor, I was certainly very strongly pro-labor. I continued so until the general strike here in the thirties.

I don't remember details, but I remember that I was interested in labor until the Bridges' type of labor leader came into prominence. Then I realized there were subversive trends. Even that hasn't dampened my interest in labor, but it has toward many labor leaders. I thoroughly believe in labor unions and in collective bargaining, and in certain aspects of social security, social insurance. I think that labor is asking for altogether too much, but that doesn't mean that I'm opposed to labor movements. One really can't. Not even a top capitalist can be opposed to a large segment of people who represent labor.

My negative reaction is towards labor leaders, exemplified by Beck and that type, Reuther, and various others. I find it wholly impossible

Chaney: to swallow them. In fact, I vigorously oppose them and vote against them at every opportunity.

Daniel: In general you have a strong inclination to feel that there should be sharing of economic opportunity?

Chaney: Yes. I think we've probably nearly got there so far as labor in general is concerned. In fact we may have passed the median line, but that would fluctuate back and forth and I'm not greatly worried about that.

The only thing that bothers me is the subversive element, in the first place; and in the second place, the management of labor unions which involves corruption.

Daniel: Who did you support in 1920?

Chaney: In 1920 I voted for neither Cox nor Harding. I found them both impossible. I thought the country needed a better candidate. There wasn't anyone to vote for.

Daniel: Better in what way?

Chaney: Someone who was forward-looking. I was a Wilsonian Democrat. Cox seemed to me--I really remember nothing about him except his name, I guess it was Cox. Harding I had no use for at all. He

Chaney: represented the type of Republican that I thoroughly disliked.

In 1924, I was a very strong La Follette man, and it was the first political work I ever did, in Berkeley. LaFollette was of the third party, of course. I remember it very well. That's why I didn't vote in 1920, because there wasn't anybody I wanted to vote for. As a matter of fact, I'm fibbing; I voted for Eugene Debs, but it was really a protest vote against the other parties. I was a little hesitant about putting it on my record, though I'm certainly not in the least ashamed of it.

Daniel: Not at all. It was a protest vote.

Chaney: Well, La Follette was of course a bona fide candidate who might have been elected. He didn't come close, but there was at least a strong following. There were men--I believe Borah was one of them--whom I admired for reasons which I don't remember. They were liberals, I guess, and La Follette appealed to me very strongly.

In 1928 I worked actively for Smith.

Daniel: What about that campaign? If you worked actively you must have some impression of the problems involved in Smith's candidacy?

Chaney: Well, even the fact that he was a Catholic was rough. He wasn't anywhere near my choice, but he met my choice more nearly than Hoover did, and I'm inclined to think if I were doing it again now I'd vote for Hoover. I became rather disappointed in Smith later on.

Daniel: Consideration of Smith always comes to mind when Kennedy's possible candidacy for the presidency is discussed.

Chaney: Yes. He's a ward politician type of candidate and not a New Yorker. I presume I shall vote for Kennedy if he's nominated, but I'm sure he won't be, and because he's a Catholic. I would vote for him, I think, naturally. I don't know who the opposing candidate will be, but presumably I would vote for Kennedy if he were nominated. And if he were I think that probably he might be beaten, even by as weak a man as the Republicans are likely to put up.

Daniel: But one of the problems in the Smith candidacy was the fact that he looked as he looked and he spoke as he spoke. We like to have very polished people, generally, in the White House. Don't you think that's true?

Chaney: Yes, but we've had a number since who weren't. Ike is anything but polished.

Daniel: Oh, but a great many people feel he is exceedingly polished.

Chaney: In some ways, perhaps. Truman himself was not my idea of a well-educated man, although he caught onto a lot. I am an admirer of Truman as a person. I never particularly liked him as a president, but I voted for him.

Daniel: Proceeding to the late twenties, what did the depression mean to you?

Chaney: My salary was cut ten percent, but my living costs were cut perhaps more than that, so I'll never know just how it came out. But the depression was, on the whole, an advantage to me. It was at time when my children were growing up and were quite expensive. Certainly groceries cost less.

It was during that time that I came into the University, and I should say that the depression didn't do any particular harm to me.

Daniel: What did you feel about the measures of the New Deal?

Chaney: Well, I was enough for it so I voted for Roosevelt. Yes. I voted for him three times and for somebody else along there in the middle, I don't think

Chaney: Willkie, certainly not Landon. Norman Thomas was in there. I voted for Norman Thomas once just because it was obvious that Roosevelt was going to be elected. At that time I thought it was a good idea to strengthen the Socialist vote, the third party vote. I wouldn't vote Socialist now because the Socialist party has a somewhat different flavor, I presume. I really am not very well informed.

But Norman Thomas was a great man and I admired him, and it cost nothing to vote for him. I remember once voting for Norman Thomas.

Daniel: The feelings about Roosevelt, either for or against, are usually very marked.

Chaney: I wasn't extreme, but I liked him very much. At the end when he was ill and making mistakes I was disillusioned, and now I'm completely disillusioned about his foreign policy. He was, as I view it, a show-off. Rather than watch his step, in order to call Stalin 'Joe,' he was willing to sign away far more of our rights than any president ever should.

Now, I say that he was ill. He was not getting enough blood in his brain, and one can't blame him him any more than one can blame Ike, or for that matter, Dulles. When I'm ill I don't amount to much either. It's a mistake to vote for a sick

Chaney: man. I voted for Eisenhower because I thoroughly dislike Stevenson as a president, and I'm glad I did. That is, I'm glad Stevenson was not elected. I'd rather have Ike sick than Stevenson well.

Daniel: What is your objection to Stevenson?

Chaney: I think he's completely impractical, and in international affairs far too much the way Roosevelt was--probably not well informed and an incipient give-away artist. He had two planks in his last campaign, which was a pathetic one: one was to abolish selective service; and the other was to stop atom bomb testing, as I recall--both nutty. He got a few votes that way and lost ten times as many.

I say the campaign was silly. I don't know if all this was Stevenson's idea or not, but anyone silly enough to run a campaign like that one would probably make a silly president. Anyway, he was a terrible candidate. But whatever sort of president he would have made--as a candidate he was simply impossible. Ike was a good candidate, and also is a good president.

Daniel: What, in your opinion, is the most judicious foreign policy for us to pursue at this time?

Chaney: I don't know, because our foreign policy has been so different from what I would like for so many years. We've got committed to a sort of policy which we can't possibly continue, or that we can't correct. I would say this. If I thought we could get away with it, but of course we can't go back and do it, the foreign policy of Teddy Roosevelt--carry a big stick and act tough--that's the sort of foreign policy I would like, but that's whistling against the tornado: it's completely out of the question.

Daniel: What do you think is the role of the United States in world affairs?

Chaney: I think we should quit supporting foreign countries whose intentions and record are in the least uncertain. I think we should strengthen our defenses. I am not an isolationist in the sense of 100 per cent, but I think we've gone far too much in the other direction.

Daniel: You would have us withdraw--

Chaney: Withdraw from places like Egypt and Yugoslavia, probably from India. A country that is neutral is an enemy nowadays. I would spend that money on bigger and deadlier bombs, of course, because we're losing, presumably, some friendship and we have

Chaney: more need of resources of our own.

It's impossible, looking back on what has happened to us since 1932, impossible to say at what point the major errors were made; certainly the Franklin Roosevelt give-aways were horrible mistakes. I have read and don't thoroughly approve the Wedemeyer Report book. Roosevelt had advice from Wedemeyer which would have been better than that which he followed. Wedemeyer was a Republican isolationist on the whole, I should think. If his policy could have been followed we wouldn't have had the sort of peace we had, the sort of Germany and Russia we have, perhaps not even the sort of China we have with Marshall messing things up with his good intentions and blundering fashion.

Daniel: Do you think then that we are responsible for the things that have happened in the development of communism, for instance?

Chaney: Well, we certainly encouraged it in China.

Daniel: What do you think Russia would be doing now if we had been, as you consider, more effective?

Chaney: I don't know enough about international affairs to reconstruct a picture of Russia. But certainly we have allowed Russia to get economic and a

Chaney: certain degree of political control of areas.

Daniel: How can we combat that?

Chaney: At this point there is perhaps nothing we can do except show by our way of living a better way of life. We have our agency...

Daniel: Information services?

Chaney: Yes.

Daniel: How can an information service do this?

Chaney: I've seen it operating in China.

Daniel: What does it do in China?

Chaney: It gives lectures and shows pictures and has a library, and gives individual advice. This was in Chungking in 1948. I think it helps wherever it is. I was staying in a consulate and saw a lot of it there for several weeks. It seems desirable.

Daniel: Who goes to the information center and to whom is the information given?

Chaney: Well, any Chinese who wants to. They would be literate Chinese, presumably.

Daniel: And why would a Chinese person want this, just because he's curious or because there's some social interest?

Chaney: Well, there's something free, the lectures and the movies.

Daniel: Those are attractive?

Chaney: I don't know from a Chinese point of view. I never saw great crowds around there. There were men who went out in the country and gave shows and talked about the United States. At that time China as a whole was friendly to us.

It's impossible to go back retracing our steps to figure what we might have done, and I'm not even saying that anyone could have done better than Roosevelt under the circumstances, or if anyone could have done better than Truman or than Eisenhower. The fact remains that we have lost a lot of ground. And that is why I say, perhaps rather stupidly, if we had had a man like Teddy Roosevelt who acted tough and if that sort of thing would still go down, and I'm not sure it would, if we had the "big stick" foreign policy it would be a better world for Americans.

Whether it would be a better place for Panamanians and Lebanese I have no means of knowing. Perhaps it wouldn't. Perhaps the plan is going to be toward equality of opportunity not only in the United States but all over the world. Perhaps the dark-skinned people are going to get

Chaney: their "share," their share in quotes because I don't admit that they have a share of what we in this country have developed. Their rulers and they themselves--I'm speaking of Asia and Africa now--their rulers have been corrupt, they've wasted the resources of Asia, and in Africa they've never developed their resources. In Africa they don't have much of a culture, an indigenous culture. Asia has a tremendous culture, of course, but it's been dissipated through emperors, and their natural resources have been expended and people have stood for it.

We didn't stand for it. In our part of the world we rebelled, starting nearly a thousand years ago, longer ago than that. And we're a different kind of people in that sense, or we had better luck. I'm no historian. I just know that we didn't stand for it, didn't stand for what the Chinese and Japanese stood for, or what the Africans stand for. Whether that makes us better or not I'm not saying. It's fortunate that we didn't stand for it anyway, isn't it?

And now to think that a bunch of illiterate Arabs or some obscure tribe of Africans should

Chaney: have all the opportunities that I or my children have, seems to me ridiculous. I think probably they should have more than they have, and that is where a little more education on my part or more intelligence would give me a better basis for an opinion. You see, about this I really don't know very much. I don't think the world is being run as it should be, but to get right down to cases. I don't think we should have swimming pools and recreation grounds for every Negro who wants to come here from Alabama. In Berkeley I voted against it and shall continue to. I'm neither a "nigger lover" nor a "nigger hater." (I never use the word "nigger" except in this context.) But I see no reason for making Berkeley so attractive to any outsider, including Iowans. But, they all want to come here.

Interest in Local Government

Daniel: This brings us logically to government at the local level. When did you first take an active part in Berkeley elections?

Chaney: I got pretty fed up in the late thirties and forties with the group that was running the city.

Daniel: There was something called the Council Manager League.

Chaney: Yes. The Council Manager League was originally an outfit that favored, I think, a city manager. But a group of right-wing Republicans took the name and came to life every two years at election time. Several of my good friends were in it. Amusingly, at a political action committee meeting last night I suggested that this group take over the Berkeley Municipal League. It is a very different group from the Berkeley Municipal League, I can assure you; it is a group opposed to the Kent sort, to the left-of-center, Democrat spend-it-before-you-get-it philosophy. It would be a perfectly ripping joke to have Ed Martin, who is a pillar of Republicanism the president of the Berkeley Municipal League.

That is, the suggestion wasn't particularly serious and wasn't seriously taken, but I have moved away from the group that I worked with in the Berkeley Municipal League for much of the time because they were much too far to the left for me.

Daniel: When do you think they departed from a program you could support?

Chaney: Well, in 1949 and in 1951 the League still had money and we had a Republican president part of that time, and the Berkeley Municipal League was in effect, and actually, non-partisan. It was not like the Kent slate and it was not like the council-manager organization. It had representative men--members of both parties in it.

I am primarily opposed to the Kent group. I mentioned him because he seems to be the leader--because they are strictly Democrats, because they use the Democratic party to further their ends. I would be as opposed, and incidentally I told this group last night, a very small group, that I would be opposed to it and would work against it if it was a strictly Republican group. I have no interest in either.

Daniel: The point of view of the Berkeley Municipal League is quoted here as being:

> "formed of citizens who need an organization to make themselves heard on balanced tax structure, school expansion, city planning, waterfront development, and who concern themselves with issues wholly non-partisan."

Chaney: Yes, I'm glad that's in there. I helped write that, of course, and I've always been non-partisan at this level. Actually, in my voting I've been

Chaney: pretty catholic, haven't I? I'm a Bull Mooser.

Daniel: You've ranged pretty widely.

Chaney: I've voted Democrat, twice Socialist, and several times Republican. I never voted for a Prohibitionist, but that's about all I haven't.

Daniel: How did Lucy Stebbins get into the group?

Chaney: She was a middle-of-the-road liberal, a wonderful woman.

Daniel: Yes. And Mr. Ross was the editor of the paper that was put out.

Chaney: He hasn't been active politically in late years.

Daniel: No. And let's see now. Mr. Benner was on the board of directors, Mrs. Chernin, Jeffery Cohelan, Lyle Cook, Joseph Harris, Mrs. M.M. Knight--now, who was she?

Chaney: Eleanor A. Knight. She was never in it very long or very much.

Daniel: And Donald McNary--

Chaney: That was a student, one of my friends.

Daniel: --Richard Perkins.

Chaney: He is a very fine man. Incidentally, I want to go see him. He's a good Democrat.

Daniel: Why hasn't the Berkeley Municipal League continued to be effective?

Chaney: That's what the group asked last night. The point is we got what we were after. And suddenly I lost my political effectiveness as a leader in the light of my loyalty oath stand.

Daniel: How did this happen?

Chaney: Oh, well, my loyalty oath stand was not that of the "liberals." The "liberals" were--I don't consider them liberals--but that's what they thought. Everyone thinks he's the perfect blend; the "middle-of-the-road" is what we say, "I'm neither right nor left, I'm just the way I am, a middle-of-the-roader." Well, obviously that's silly. There may be such a thing as the middle of the road but most of us are on one side or the other. I'm darn careful nowadays, I'm not on the left side of the middle of the road, I assure you.

And at a time like this, when the left side contains a good many of our enemies, I'm very careful with whom I associate. So if I have moved to the right too far--I hope I haven't--I still consider myself a liberal in politics.

Daniel: When you say "left," what do you mean?

Chaney: I mean the sort of people that I met on campus,

Chaney: and I'm thinking of some, who were always running down the United States and extolling Russsia. Now, that's silly stuff; it's show-off stuff, but it reflects a very general point of view, not confined to the campus, but I hear it on campus because I have many campus friends.

Daniel: Where would you put the people who are reform-oriented?

Chaney: They are liberals, and they're probably middle-of-the-road liberals. Some of them are awful muddle-heads. Some are people whose names you read. They are reform people, but they're muddle-heads. They don't seem to know what they're doing with the Negroes, for example, the Negro problem. Don't ask me what to do with it--

Daniel: (Laughter) I was about to.

Chaney: I put some time into it and tried to come up with an idea, and I have some idea about bettering the Negroes politically. Incidentally, the left-wingers had three candidates, or two, rather, and there was a third, and none of them got elected. One thing I'd like to do is elect a first-class non-left Negro. I did it once with Byron Rumford, and he's gone on to higher levels.

Daniel: What about Mrs. Mayer, wasn't she running?

Chaney: She didn't have much support. She just didn't make it; she was high, but she didn't make it.

Daniel: Yes. Now, you've indicated what you consider to be left-oriented; what do you consider to be right, very far right?

Chaney: The right is the McCarthyism type of people. That's the classic case. That's what chased a lot of people into the Democratic party--McCarthyism. It was a very hard thing for me to take. Of course, I didn't take it. I had no use for it. Close friends of mine argued that he was the defender of the nation against communism, which I think is nonsense, and I have no use for that sort of thing. On the other hand, I have as much use for it as I have for the point of view of the extreme left wingers. I don't like either.

Daniel: You identify left wing with influences that are outside of the United States?

Chaney: Not necessarily. I identify it with extreme labor position. I would use it also for either party that use minority races for political purposes--

Chaney: as the Kent group did in this election. There are plenty of aspects I haven't thought about very carefully, and I'm saying more about this than I've ever said in one breath before. There are plenty of things about the extreme leftist that I don't like, and there are plenty of things other than McCarthyism that I don't like about the extreme rightists.

The point is, I guess, I'm not complaining about either electorate. I'm complaing about extremists.

As between the two, if I had to take one I'd take the extreme right, and I'd sure hate myself. But the extreme left has so many subversives in it that I wouldn't take a chance. In other words, I'd rather have the United States gone back, retrogressed to the stupidity of the McCarthy sort of rule than have it Russianized. Neither of those alternatives in imminent and it's rather silly to talk that way. But maybe that would sort of indicate that I'm a little more to the right than to the left.

Daniel: Concepts of right and left change a good deal.

Chaney: They sure do. La Follette's harebrained ideas of

Chaney: the early twenties are so commonplace nowadays that we'd consider him an arch conservative.

Daniel: What do you consider are the most pressing problems in a local government?

Chaney: I doubt if I've done very much thinking--

Daniel: Of course you have, or you wouldn't be participating.

Chaney: But I would say this about the local situation. I would quit free spending or plans for free spending.

Daniel: What do you mean by free spending?

Chaney: I've looked around the town quite a lot on the school bonds issue. School people say that many of the items that are so urgently required are not needed at all. A school for example, in Berkeley which is listed for a library already has one which a teacher in it says is adequate.

I am not interested in swimming pools in elementary schools. I doubt that I am in high schools, but certainly not in elementary schools. I see no reason why we should have free night adult education schools. I think it's well enough to have tuition charged and give them facilities, but I don't see any reason why I should

Chaney: pay for grown-up education. Free spending in education is one thing I'm opposed to.

Speaking of free, I'm certainly opposed to freeways through residential areas. I'm opposed, in general, to taking land off the tax rolls.

Daniel: This is one of the problems facing Berkeley.

Chaney: True. And I don't think either the Kent group or the opposition has taken a clear stand on it. I would take a definitive stand againstit and refuse to permit, if I could, if I could legally, another sale of private land into public ownership until I knew I was going to get my taxes out of it. This is going to be just one big public institution. And the few people who aren't in it are going to, naturally, leave and go somewhere else. Maybe we should have a public area here like Washington, D.C. Though they, of course, have private property and pay taxes. The idea of condemning land is completely wrong; incidentally; Kent thinks so, too. What's his name, my good friend, Purcell was bitterly opposed to it, when he was county supervisor.

And there's a Republican and a Democrat, each

Chaney: one opposed to it; you see, it's not a matter of party politics. It's just common sense.

Daniel: How do you explain the fact that this has been a problem that hasn't been resolved very well in Berkeley?

Chaney: This problem hasn't been resolved anywhere. We don't have any new taxes. I'm perhaps getting beyond my depth but I'm certain I'm correct about this. I'm certain in most parts of the United States there aren't any new taxes. I've run into this in the Save the Redwoods League. Say the League buys and the state buys an acreage in Humboldt County. It has a very low tax roll, a very low total. We take that out of private ownership, and therefore there are more taxes, so Humboldt County loses the taxes it's been getting.

And eventually if we keep on taking public land Humboldt County and counties like it are going to be in a very serious condition. It wouldn't matter in Alameda County for parks, but in Humboldt it's a very different matter. I don't approve of it, though I've been participating in it. And I think we should get together, somebody who knows about this, I don't, and figure out the proper way to mee this tax problem.

Chaney: It's ridiculous for the University to get police and fire service from the city of Berkeley and not pay to the hilt for it. And yet an attempt was made, an honest--but I think it was too low an estimate, it was only about half what it should have been--some $50,000 or $60,000. That was defeated somewhere along the line. I don't remember by which side. It's perfectly absurd to have the benefits that I pay for going to an institution or an individual who doesn't pay taxes. The inequity of it bothers me.

Daniel: Did your vote in the city election bear out your point of view in local government?

Chaney: In this recent election I voted for at least one person, a couple of people, whom I don't especially approve of, but I wanted them more than I wanted the people running on the Kent slate, and so I voted for them. Unfortunately you have to take extremes on the two party system, just as I would vote for McCarthy over Bridges if they were on the ticket. I'm laboring that point a bit; maybe I wouldn't vote at all, but if I had to choose between those two kinds of

Chaney: people, with the greatest reluctance I would take the extreme right, because at least it's--neither one is American, neither one follows the ideals of our country--but it's more American than the Bridges' type.

Daniel: It was an interesting election. Mrs. May got onto the council. Of course Mrs. Thomas had been on the council for a long time, she has the support of organizations supporting incumbent candidates.

Chaney: Well, she's a Republican, too. Of course she had Republican support. I don't approve of it but we know a lot of people vote for both parties. As a strong Republican she got a lot of Republican votes and lost a good many Democrat votes. By the same token May got lots of Democrat votes. And in addition she got Liberal votes, and she had friends and--well, she just barely squeaked by. And any one of the three, May, DeMello, or Whitney could have been elected.

It makes me kind of sore to realize that DeMello's advertisements, which I sent out, were in rather poor taste, and my wife and some other women I know didn't want to send those out. If

Chaney: we had sent those out we probably would have elected DeMello. He missed by only a few hundred votes. But he was 'Al' and this and that, a kind of intimate west-of-the-tracks tone, and the ladies didn't go for it.

Daniel: Well, these are the small things that sometimes add up to a significant difference in the result of an election.

XV. PORCELAIN

Daniel: There's another subject we haven't touched: your interest in porcelain.

Chaney: My great-grandmother brought in the horse and wagon to Illinois from Ohio to Virginia, some beautiful porcelain pieces, of which I have one or two. I started in collecting porcelain without knowing anything about that.

I don't think there's any connection. Perhaps I may have inherited good taste, if that is in genes, maybe it's mostly environment. I really don't know; I haven't any opinion to express. All I'm saying is that in 1925 when my wife and I were in Peking one of the first things I did was to buy for the equivalent of thirty cents a very beautiful Celadon plate at a temple fair in Peking. She'd been going to them. I'd been out in the Gobi and when I got back she knew pretty well what the town was like. And I became greatly interested in these porcelains, which were within my price range, and bought just a few that year. Then in 1933 I bought a good many more, in-

Chaney: cluding some very good ones.

In 1937 we were there together. My wife was with me in China again in 1937, and that was, you may recall, the year the war with Japan started, and there was a good deal of liquidation of stock, so we bought quite a lot of things at bargains in Peking in 1937.

Then in 1948, well, I was so busy with redwoods, I got off once or twice but didn't have any time or facilities.

But starting in with my trips to Japan in 1950, I became deeply interested in Kutani and Imari.

I collect just for fun. I have bought for friends lots of things that they wanted, that they asked me to get. But when I see things which are beautiful and I like to look at and that I can afford--the best things, of course, I can't afford, but some of them I can, broken ones I can almost always buy, like this one.

Daniel: Mrs. Chaney showed me some of the pieces that you had mended.

Chaney: Yes, this one is mended by Chinese, and its pretty hard to find the breaks.

Daniel: It's very handsome.

Chaney: Well, it's fabulously beautiful for a green Kutani.

Daniel: What does "Kutani" mean?

Chaney: It's the name of the place where it is made.

Daniel: When you make your selection of a piece, what attracts you first?

Chaney: Color is the primary interest with me. That includes glaze, which is, I suppose, texture, color, and glaze. I've always been interested in color and texture in nature. Bright colors I like very much, and Kutani is bright red, and bright green, and blue. I like color.

Birds have been a hobby all my life. Birds are bright-colored. I certainly don't like the modern Japanese pottery and porcelain, which is dull brown. I abominate the old masters who were so faded. I have a few Sung paintings that are in that category, and I don't look at them very often, not nearly as often as I look at much later Japanese prints of which I have a great many.

Daniel: You also have a collection of Japanese--

Chaney: Oh yes, I have several hundred, I guess, Japanese prints.

Daniel: Early eighteenth century?

Chaney: Yes. Michener's book describes these prints.

Daniel: The Ukioye School, I think it's called.

Chaney: Yes. They're fine things. Because I'm interested in Japan I'm interested in seeing the pictures of Japan of several centuries ago.

Daniel: Have you consulted any experts in Oriental art?

Chaney: I have had a little bit of acquaintance with Dr. Lessing, and with Lauffer at Chicago, and various others. And I've handled enough Oriental objects so that I at least have a touch. If I like a thing, I buy it.

Daniel: Is your judgment fairly accurate about porcelain?

Chaney: Yes, I'd match myself against some of the pros, simply because I've handled so much of it.

Daniel: Porcelain collecting is a perfectly sound economic venture.

Chaney: Yes, I think it is. Eventually, some day, we'll make a lot of money out of it. Of course, I have no interest in that. I have one piece that I paid $35 for. One of my Japanese friends who is perhaps better able to comment than anyone else on its value says it's worth at least a thousand dollars now. But it was just a lucky chance. I knew it was awful good or I wouldn't have paid $35 for it because I rarely pay that much. My

Chaney: typical purchase is much lower.

Daniel: What's your top?

Chaney: Oh, it's around in there, $50.

Daniel: You're not speculating in porcelain. You buy it because you like it.

Chaney: I buy it because I like it and like to look at it. When I get so I don't like to look at it I let somebody have it, but mostly I keep it in the family.

Daniel: Have you ever put it out on loan for any exhibition?

Chaney: Yes, but never with my name on it.

Daniel: Where have you shown it?

Chaney: Around the Bay. The curator at the National Museum in Tokyo who said my piece was worth at least a thousand dollars, said no porcelain group in the United States would be complete without this. But of course I don't want to send it around the country. Why should I? It's mine. I like to look at it.

XVI. THE RALPH WORKS CHANEY FAMILY

Daniel: Since we skipped lightly over your family life before coming west, more comment is needed.

Chaney: Well, I was married in 1917 to Marguerite Seeley, a Kentucky girl whose grandfather was a chaplain of the Confederacy, a Virginian.

Daniel: Was she in school?

Chaney: Yes, she was at the University of Chicago. I met her there.

Daniel: Was she interested in the same field?

Chaney: Not at that time. She was interested in history and economics, I believe. Later she was a Phi Bete, which I never was.

Daniel: Did you meet her in class?

Chaney: Oh, I met her socially through one of my sisters.

In those days people didn't get married and then decide how they were going to finance it. We were engaged for two years before we figured we could get married and have some resources.

Daniel: This was true of the period, wasn't it?

Chaney: Oh yes. It was no credit to me. Nowadays probably I would get married and charge even the preacher's

Chaney: fee to the future, but in those days three thousand dollars seemed an essential amount.

Daniel: Was this size bank account essential to the launching of marriage?

Chaney: Yes. I invested it and I suppose I've never spent it. It's a little hard to tell,(laughter) the way my bookkeeping is carried on. But at any rate it was always a resource that could be drawn upon.

The fall after we were married I went to Iowa, that was in 1917. We had a baby in 1919, Richard. Ellen came along in January. They're two years apart--and the last one was born in 1923. Yes, that's right. Ellen was born just over into January 1922 and David was born in December 1923.

We had Ellen and Richard when we came out here, David is the only native son. We considered going to Nevada to avoid having a native son in the family but--(laughter) anyway, we have one.

Daniel: Richard is the oldest child. What is his field?

Chaney: He studied forestry at the University. Before he finished he went out with the Corps of Engineers into the Pacific and worked until about 1943. Then he came back and enlisted in the navy and got his ensign commission at Columbia and went

Chaney: back into the Pacific on a PT boat, commanding officer on a PT and later an executive officer of an LST.

Daniel: You say he was in the Corps of Engineers in the Pacific. Was this as part of the navy?

Chaney: No, civilian. He was too young at that time.

Daniel: A Seabee?

Chaney: Well, the navy called them Seabees, I guess. Anyway he was building landing strips, gasoline installations, harbors. He did a lot of heavy construction work.

So when the war was over and he came back he was greatly interested in engineering. He finished up his forestry and got a degree in civil engineering and has been a practicing engineer ever since.

Daniel: In this area?

Chaney: In various areas. He helped build the freeway out of East Oakland. He had a couple of years, more than a couple, about four years at Bishop, and now he's in charge of a big unit of the State Highway Commission Traffic Department in San Diego County.

Daniel: What about Ellen's schooling?

Chaney: Ellen was taking up general curriculum with emphasis on science. When she graduated she got a

Chaney: job with the chemical department of Shell Oil in Long Beach. I think she finished up the war there. It was an essential occupation, of course.

Daniel: What about David?

Chaney: David has studied at the University but went to Davis thereafter and studied enology, wine-making. He worked for several wineries on graduation. Within the last three or four years he has gone into agricultural extension in Napa County. He's now in Yuba City. His specialty is deciduous fruits.

BIBLIOGRAPHY: RALPH WORKS CHANEY

1910

Summer and Fall Birds of the Hamlin Lake Region, Mason County, Michigan, The Auk, Vol. XXVII, No. 3, Jul. '10, 271.

1916

With the Whip-poor-wills, Outing, Oct.'16, 34.

1918

The Ecological Significance of the Eagle Creek Flora of the Columbia River Gorge, Jour. Geol., Vol. XXVI, No. 7, Oct.-Nov.'18, 577.

1920

The Flora of the Eagle Creek Formation, Contributions from Walker Museum, Vol II, No. 5, Jul. '20.

Further Discussion of the Ecological Composition of the Eagle Creek Flora (abs.) Geol. Soc. America, Bull., Vol. 3, Nol. 1, '20, 222.

1921

Preliminary Notes on Recent Tertiary Collections in the West (abs.) Geol. Soc. America, Bull., Vol. 32, '21, 137.

A Fossil Flora from the Puente Formation of the Monterey Group, Amer. Jour. Sci. 5th Ser., Vol. 2, '21, 90.

1922

Flora of the Rancho LaBrea (abs.) Geol. Soc. America, Bull., Vol. 33 '22, 204.

Notes on the Flora of the Payette Formation, Amer. Jour. Sci., Vol. IV, Sept. '22, 214.

1923

Report of Progress in Paleobotanical Research in the Tertiary of the West during the Year 1922, Carn Inst. Wash., Year Book No. 21, Jan. '23, 400.

Paleobotanical Contributions to the Stratigraphy of Central Oregon (abs.) Geol. Soc. Am. Bull., Vol. 34, No. 1, Mar. '23, 129.

1924

(Studies in Paleonotany of Pacific Region) Carn. Inst. Wash Year Book, No. 23, '24, 292.

(Fossil Floras of the John Day Basin) Carn. Inst. Wash., Year Book, No. 22, '24, 349.

Preliminary Report on a Tertiary Flora from Northwestern Nevada (abs.) Geol. Soc.America, Bull., Vol. 35, '24, 162.

1924

Notes on the Occurrence of Terrestrial Plant Fossils in Association with Marine Deposits in the Western United States, Proc. Pan-Pacific Sci. Con., Australia, 1923, Vol I, '24, 882.

A Note on the Inter-continental Relationships of a Tertiary Flora, Proc. Pan-Pacific Sci. Con., Australia, 1923, Vol. 1, '24, 883.

Quantitative Studies of the Bridge Creek Flora, Amer. Jour. Sci., Vol. VIII, Aug. '24, 527.

1925

Tertiary Forests and Climates in the Great Basin and Great Plains, (abs.) Geol. Soc. America, Bull., Vol. 36, Mar. '25, 218.

A Comparative Study of the Bridge Creek Flora and the Modern Redwood Forest, Carn. Inst. Wash. Pub. 349, Aug. '25, 1.

The Mascall Flora, its Distribution and Climatic Relation, Carn. Inst. Wash. Pub. 349, Aug. '25, 23.

Notes on Two Fossil Hackberries from the Tertiary of the Western United States, Carn. Inst. Wash. Pub. 349, Aug. '25, 49.

A Record of the Presence of Umbellularia in the Tertiary of the Western United States, Carn Inst. Wash. Pub. 349, Aug. '25, 57.

(Studies of the Tertiary Floras of the Western United States) Carn. Inst. Wash Year Book, No. 24, Dec. '25, 356.

1926

Relationships of the Marine and Fresh-water Tertiary of Western North America, Based on Current Collections of Fossil Plants (abs.) Geol. Soc. America, Bull., Vol. 37, Mar. '26, 213.

(Report on Paleobotanical Research) Carn. Inst. Wash. Year Book No. 25, Dec. '26, 399.

In the Land of the Sheep and the Dinosaur, California Monthly, May '26, 499.

Bearing of Paleobotany on Habitat Conditions in Mongolia, Nat. His., Vol. XXVI, No. 5, '26, 527.

1927

Hackberry Seeds from the Pleistocene Loess of Northern China, Amer. Mus. Nov., No. 283, Sept. 13, '27.

Finding of Pleistocene Material in an Asphalt Pit at Carpinteria, California, Science, Vol. LXVI, No. 1702, Aug. 12 '27.

1927 (continued from preceding page)
A New Poplar (Populus Pilosa) from the Eastern Altai Mountains, (by Alfred Rehder) With Supplemental Notes on the Distribution and Habitat, by R.W. Chaney, Amer. Mus. Nov., No. 292, Nov. 30,'27.

Geology and Paleontology of the Crooked River Basin, with Special Reference to the Bridge Creek Flora, Carn. Inst. Wash. Pub. No. 346, Pt. IV, '27.

Report. on the Investigation of Fossil Plants, Carn. Inst. Wash. Year Book No. 26, Dec. '27, 361.

1928

Recent Additions to the Pleistocene History of Western California (abs.) Geol Soc. America Bull. Vol. 39, Mar. '28, 221.

Distribution and Correlation of Tertic Floras of the Great Basin (abs.) Pan-Amer. Geologist, Vol. 49, May '28, 314.

Investigations in Paleobotany, Carn. Inst. Wash. Year Book No. 27, Dec. '28, 382.

Pictures of the Past in Asphalt, Carn. Inst. Wash. News Release, Ap. 1, '28.

1930

Suggestions Regarding the Age of the Southern Cascade Range (abs.) Geol. Soc. America Bull. Vol. 41, Mar. '30, 147.

The Fossil Flora of Goshen, and its Bearing on the Problem of Climatic Change (abs.) Science, N.S. Vol. 72, Oct. 10, '30, ~~653~~. 345

A Sequoia Forest of Tertiary Age on St. Lawrence Island, Science, Vol. LXXII, No. 1878, Dec. 26, '30, 653. Also in Geol. Soc. America, Vol. 42, Feb.'31, 192.

and Herbert Louis Mason, A Pleistocene Flora from Santa Cruz Island, California, Carn. Inst. Wash. Pub. 415, Pt. I, '30, 1.

1931

Remnant of an Ancient Land-bridge, Carn. Inst. Wash. News Service Bull. Vol. II, No. 12, Mar. 15, '31.

Redwoods of the Past. Save-the-Redwoods- League. 1931.

Research in Paleobotany, Carn. Inst. Wash Year Book, No. 30, '31, 275.

1932

Central Oregon, XVI Int. Geol. Cong. Guidebood 21, Excursion C-2, '32.

Notes on Occurrence and Age of Fossil plants Found in the Auriferous Gravels of Sierra Nevada, Report XXVIII. State Mineralogist, Calif. State Div. of Mines, Jul-Oct, '32.

1932 (continued from preceding page)
A Journey into the Past, Carn. Inst. Wash News Service Bull. Vol. II, No. 33, Jun. 26, '32.

Age of the Auriferous Gravels (abs.) Geol. Soc. America, Bull. Vol 43, Mar. '32, 226.

Eine Reise in die Vergangenheit, Wissen und Fortschritt, Vol. 9, Sept. '32, 247.

1933

Paleobotany, Carn. Inst. Wash. Year Book, No. 32, Dec. '33, 205.

A Tertiary Flora from Uganda, Jour. Geol. Vol XLI, No. 7, Oct-Nov, '33, 702

and Lyman H. Daugherty, The Occurrence of Cercis Associated with the Remains of Sinanthropus, Bull. Geol. Soc. of China, Vol. XII, No. 3, '33.

A Pleiocene Flora from Shansi Province, Bull. Geol. Soc. of China, Vol. XII, No. 2, '33.

and Herbert Louis Mason, A Pleistocene Flora from the Asphalt Deposits at Carpinteria, California, Carn. Inst. Wash. Pub. 415, III, Mar. '33, 45.

and Ethel Ida Sanborn, The Goshen Flora of West Central Oregon, Carn. Inst. Wash. Pub. 439, May, '33.

1934

Renewing the Days of Forty-Nine, Carn, Inst. Wash. News Service Bull. Vol. III, No. 17, Sept. 9, '34.

A Journey into the Past, The Meccano Magazine, Vol. 19, No. 4, Ap. '34, 288.

and Erling Dorf, Ecology of the Tertiary Forests of Western North America, (abs.) Geol. Soc. America, Proc. '33, Jun. '34, 357.

1935

The Food of Fossil Elephants, Carn. Inst. Wash. News Service Bull. Vol. III, No. 22, Jun. 9, '35.

The Food of "Peking Man" Carn. Inst. Wash. News Service Bull.Vol III, No. 25, Sept. 22, '35.

The Kucha Flora in Relation to the Physical Conditions in Central Asia During the Late Tertiary, Sven Hedin, (Book printed in Sweden) '35.

The Occurrence of Endocarps of Celtis Barbouri at Choukoutien, Bull. Geol. Soc. of China, Vol. XIV, No.2, '35.

1935 (continued from preceding page)
An Upper Pleiocene Florule from the Sanmenian Series of Shansi Province, Bull. Geol. Soc. of China, Vol. XIV, No. 3, '35.

The Kucha Flora in Relation to the Physical Conditions in Central Asia during the Late Tertiary, Svensk. Sallsk. Antropol. oct Geografiska Annaler, Vol. 17, '35, 75.

1936

Fossil Foods, Radio Talk, Science Service, Scientific Monthly, Vol. XLII, Feb. '36, 169.

The Succession and Distribution of Cenozoic Floras Around the Northern Pacific Basin, Essays in Geobotany in Honor of William Albert Setchell, Unov of Calif. Press, '36.

Synopsis of Levtures in Peleontology I, Univ of Calif. Syllabus 260, '36.

Plant Distribution as a Guide to Age Determination, Jour. Acad. Sci., Vol. 26, No. 8, Aug. 15, '36, 314.

and Maxim Konradovich Elias, Late Tertiary Floras from the High Plains, Carn Inst. Wash. Pub. 476-I, Oct. '36, 1.

and Herbert Louis Mason, A Pleistocene Flora from Fairbanks, Alaska, Amer. Mus. Nov., No. 887, Oct. 15, '36.

1937

The Book of Ten Thousand Volumes (The Fossil-bearing Shales of Shantung) Carn. Inst. Wash. News Service Bull. Vol. IV, No. 19, Dec. 12, '37.

Pleiocene Flora from Eastern Oregon (abs.) Geol. Soc. America, Proc. for 1936, Jun. '37, 356.

Fossil Plants in the Making, Carn. Inst. Wash. News Service Bull. School Ed. Vol. 4, No. 11, April '37, 99.

Use of Tertiary Plants in Correlation (abs.) Geol. Soc. America, Proc. for 1936, Jun. '37, 391.

Cycads from the Upper Eocene of Oregon (abs.) Geol. Soc. America, Proc. for 1936, Jun. '37, 397.

Notes on the Finding of Mammals and Plants in Frozen Pleistocene Deposits near Fairbanks, Alaska (abs.) Geol. Soc. America, Proc. for 1936, Jun. '37, 399.

with Dr. Frederic E. Clements, Environment and Life in the Great Plains, Carn. Inst. Wash. Supplementary Publication, No. 24, Feb. 15, '37.

1938

Paleoecological Interpretations of Cenozoic Plants in Western North America, Botanical Rev. Vol. 4, Jul. '38, 371.

1938 (continued from preceding page)
Ancient Forests of Oregon: A Study of Earth History in Western America, Carn. Inst. Wash. Pub. No. 501, '38, 631.

The Deschites Flora of Eastern Oregon, Carn. Inst. Wash. Pub. 476, '38, 187.

and M.K. Elias, Late Tertiary Floras from the High Plains, Carn. Inst. Wash. Pub. No. 476, Pt. I, '38.

and Associates, Dept. of Paleontology, Univ. of Calif. Berkeley, Summary of Climatic Data in Papers on Cenozoic Paleontology of Western North America, Blue Hill Observatory, Harvard Univ., for the American Committee of the International Commission on Climatic Variations, Amsterdam, Jul. '38. Also published in Cong. Internat. Geographie, Amersterdam, 1938, Comptes Rendus, tome 1, 1938, 579.

1939

Discrepancies between the Chronological Testimony of Fossil Plants and Animals, Proc. 25th Indian Science Cong. Part IV-Discussions, Mar. 21, '39.

Synopsis of Lectures in Paleontology I, Univ. of Calif. Berk. Syllabus 268, '39.

Plant Fossils in the Making, Young People, Vol. LIX, No. 9, Mar. 5, '39, 65.

1940

Tertiary Forests and Continental History, Bull. Geol. Soc. America, Vol. 51, Mar. 1, '40, 469.

Bearing of Forests on the Theory of Continental Drift, Scientific Monthly, Vol. LI, Dec. '40, 489.

and Others, Paleobotany, Carn. Inst. Wash. Year Book 39, '39-40, Published '40, 175.

1941

Nomenclature and Correlation of the North American Continental Tertiary, Bull. Geol. Soc. America, Vol. 52, Jan. 1, '41. (Report by Horace E. Wood, 2nd, Ralph W. Chaney, John Clark, Edwin H. Colbert, Glenn L. Jepsen, John B. Reeside, Jr., and Chester Stock).

Living Forests are Clue to Climate in Ancient Times, Science News Letter, Feb. 1, '41.

Fifty Million Years of Redwoods, Oakland Flower Show Program, 1941.

Notes on Field Studies in the Miocene of Columbia Plateau (abs.) Amer. Jour. Botany, Vol. 28, No. 10, Supp. 8, Dec. '41.

The Age of the Dalles Formation (Oregon) (abs.) Geol. Soc. America, Bull. Vol. 52, No. 12, Pt. 2, 1945, Dec. 1, '41.

-1940 Carn. Inst. Wash. Pub. no. 507, '40
and Hsin Hsu Hu, Amoeba Fossil from Kaiping Hsien, China

1941 (continued from preceding page)
and Others, Paleontology, Carn. Inst. Wash. Year Book 40, Dec. 12, '41, 182

1942

Topographic Significance of Facies Differences in the Miocene Floras of Oregon (abs.) Geol. Soc. America, Bull. Vol 53, No. 12, Pt. 2, 1798, Dec. 1, '42.

and Others, Paleontology, Carn. Inst. Wash. Year Book 41, Dec. 18, '42, 138.

1943

and Others, Paleontology, Carn Inst. Wash. Year Book 42, Dec. 7, '43, 103.

1944

Pleiocene Floras of California and Oregon, Introduction. Carn. Inst. Wash. Pub. 553, '44, 1.

The Dalles Flora (Oregon) Carn. Inst. Wash. Pub. 553, '44, 285.

The Troutdale Flora (Oregon) Carn. Inst. Wash Pub. 553, '44, 323.

Pleiocene Floras of California and Oregon, Summary and Conclusions, Carn. Inst. Wa h. Pub. 553, '44, 353.

A Fossil Cactus from the Eocene of Utah, Amer. Jour. Botany, Vol. 31, No. 8, Oct. '44, 507.

Trees and History, Science in the University of California, '44, 247.

1945

Paleobotany, Carn. Inst. Wash. Year Book, Vol. 44, ('44-'45) Dec. '45, 86.

1946

Paleobotany, Carn. Inst. Wash. Year Book, No. 45, Dec. '46, 121.

1947

Paleobotany, Carn. Inst. Wash. Year Book No. 46, Dec. '47, 104.

Origin and Development of Natural Floristic Areas with Special Reference to North America-Te tiary Centers and Migration Routes, Ecological Monographs, Vol. 17, No. 2, Apr. '47, 139.

Question of Correlation of Continental Tertiary Deposits (abs.) Geol. Soc. America, Bull. Vol. 58, No. 12, 1249, Dec. ' 47.

1948

Pleiocene Flora from the Rattlesnake Formation of Oregon (abs.) Geol. Soc. America, Bull. Vol. 59, No. 12, Dec. '48, 1367.

Redwoods in China, Nat. Hit. Vol. 57, No. 10, Dec. '48, 440.

1948 (continued from preceding page.)
Paleobotany, Carn. Inst. Wash. Year Book, No. 47, Dec. 10, '48, 110.

The Bearing of the Living Metasequoia on Problems of Tertiary Paleobotany, Proc. Nat'l. Acad. Sci. Vol. 34, No. 11, Nov. '48, 503.

The Ancients Forests of Oregon, Condon Lectures, Oregon State System of Higher Education, Eugene, Oregon, '48.

1949

Miocene Occurrence of Sequoia and Related Conifers in the John Day Basin, Proc. Nat'l Acad. Sci. Vol 35, No. 3, Mar. '49, 125.

Early Tertiary Ecotones in Western North America, Proc. Nat'l. Acad. Sci. Vol. 35, No. 7, Jul. '49, 356.

Paleobotany, Carn. Inst. Wash. Year Book No. 48, Dec. 9, '49. 106.

1950

Paleobotany, Carn. Inst. Wash Year Book No. 49, Dec. 15, '50, 114.

1951

A Revision of Fossil Sequoia and Taxodium in Western North America Based on the Recent Discovery of Metasequoia, Amer. Philos. Soc. Trans. n.s. Vol. 40, Pt. 3, Feb. '51, 171.

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