Regional Cultural History Project

Frank Adams

FRANK ADAMS, UNIVERSITY OF CALIFORNIA, ON IRRIGATION, RECLAMATION, AND WATER ADMINISTRATION

An Interview Conducted By

Willa Klug Baum

Berkeley
1959

FRANK ADAMS,

UNIVERSITY OF CALIFORNIA,

ON IRRIGATION, RECLAMATION,

AND WATER ADMINISTRATION

FRANK ADAMS

(About 1940, by Henry Washburn,
Farm Advisor of Santa Cruz Co.)

Introduction

California's land is fertile, its climate ideal for agriculture, but in most areas irrigation is a necessity. Irrigation on the giant scale demanded brings with it many problems: legal questions of the equitable division of the waters available; engineering problems of the storage and transportation of waters from areas of abundance to areas of scarcity, sometimes requiring canals hundreds of miles in length; agricultural problems of the skillful application of water to the land and then necessary drainage; political problems of the organization of public districts for the purpose of building, financing, and administering irrigation works. Water has always been and continues to be one of the major problems in California and the rest of the West.

In order to preserve some of the details of the development of water-use institutions and facilities in California, several interviews with men intimately connected with these developments have been conducted by the Regional

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Cultural History Project of the General Library of the University of California at Berkeley. One of these men is Frank Adams, whose Bulletin 21, Irrigation Districts in California, although published in 1929, is still the standard source book for irrigation district history. Adams entered irrigation work in 1900 and, with only a brief interlude in the business world, was engaged in public work on irrigation problems until long after his retirement in 1945. His life covers half a century of significant developments in irrigation and reclamation in California and the West, and his memories go back even further to the 1880s and 1890s when his father, Edward F. Adams, organized one of the earliest fruit exchanges in California.

It was Dr. Elwood Mead, then head of the Division of Irrigation Investigations, later commissioner of the Bureau of Reclamation, who in 1900 first persuaded young Frank Adams, Stanford student, to try his hand at measuring water flow. This experience, and his strong attachment for Dr. Mead, led Adams to give up his planned career as an agricultural journalist and make a career of irrigation in the Division of Irrigation Investigations, United States Department of Agriculture, the California office of which he later headed. From 1916 until his retirement in 1945

[illegible] History Project of the [illegible] [illegible] University of California at Berkeley. [illegible] Adams, Irrigation Bulletin 21, Irrigation [illegible] California, which was published in 1920, is still the standard source [illegible] for irrigation statistics. [illegible] was entered in [illegible] location work in 1909. [illegible] chief [illegible] in the [illegible] work, [illegible] engaged in [illegible] on irrigation [illegible] [illegible] of 1912. His life [illegible] history of significant developments in irrigation [illegible] California and the West, and his [illegible] [illegible] further to the 1920s and 1930s [illegible] Adams, organized one of the earliest [illegible] in California.

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he was professor of irrigation at the University of California, serving as head of the ~~Department~~ Division of Irrigation from 1916 to 1936, as well as irrigation economist for the Agricultural Experiment Station and for Giannini Foundation. His work included consulting with the Bureau of Reclamation, the California State Division of Water Resources, and numerous other public bodies, some of which was done after his official retirement from active service. While much of his work involved the gathering of technical data upon which the construction of irrigation projects was based, he is probably best known for his achievements in the field of water administration and of the political organization of water-use districts.

The following series of interviews was tape recorded by Willa Baum during the winter and spring of 1958 in the living room of the Adams home at 1831 San Juan Avenue, Berkeley. The room was austerely furnished, cool, shaded by the gnarled live oaks outside the windows. Toys and hobby collections in view bespoke the nearby presence of the Adams grandchildren, and the landscape paintings on the walls evidenced their owner's familiarity with and love for the land. The most impressive item there was a large grandfather clock with elaborate dials and various chimes, a gift from the Commonwealth Club to its founder,

be [illegible] a lecturer of irrigation at the University of [illegible], serving as head of the department of [illegible] 1916 to 1926, as well as irrigation engineer for the Agricultural Experiment Station and the Hawaii [illegible] Foundation. His work included cooperation with the Bureau of Reclamation, the California State Division of Water Resources, and numerous other public bodies, some of whom he done art a his official relationship from public service. While much of his work involved the mechanics of technical data upon which the construction of irrigation [illegible] was based, he is probably best known for his [illegible] in the field of water administration and [illegible] organization of water-use districts.

The following series of interviews were [illegible] while [illegible] living room of the [illegible] 1931 Se[illegible] Berkeley. The room was [illegible] the [illegible] the [illegible] the [illegible] collections in view besides the [illegible] the Adams [illegible], and the landscape [illegible] the walls evidenced their owners familiarity [illegible] love for the land. The most impressive [illegible] large grandfather clock with elaborate [illegible] chimes, a gift from the [illegible] wealth [illegible]

Mr. Adams' father. In this setting, seated near the piano, in front of a card table which served as his home office, Mr. Adams related the story of his life and achievements to the interviewer and the spinning tape recorder, interrupted only by the entrance of Mrs. Adams bringing coffee and cookies.

Adams, a slender man of medium height, was eighty-three years old at the time of the interviews. Difficulties of speech, hearing, and vision had slowed down his prodigious output of technical writings, but he still continued to gather information and to write at his home and at his office in Giannini Hall. He spoke slowly and deliberately, first carefully thinking out what he wanted to say. The clearness of his thought is evidenced in the finished manuscript. Some of his humor comes through also, though this was most evident when the tape recorder was not running. Adams impressed the interviewer as an old-school gentleman, with his high laced button shoes, his quiet sense of humor, his unwillingness to depreciate anyone, his sense of integrity, and his friendly and helpful manner. He would probably be considered a conservative in most of his political views; the reader may judge for himself where Adams stands on water matters.

[illegible] father. In this setting, Adams [illegible] the [illegible], in front of a sand table which serves as his [illegible] office. Adams related the story of his life and achievements to the interviewer and the solution was recorded, interpreted only by the [illegible] of [illegible], [illegible] and [illegible].

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After the tapes were transcribed, Mr. Adams twice went over the manuscript in great detail, checking on all the information he was able to, revising the wording, and perhaps with excessive modesty modifying his own role in the projects in which he was involved. The preparation, editing, and other effort he so cooperatively spent on this undertaking was great. He also gathered together and donated for inclusion in the manuscript photographs of some of the key figures he mentioned.

Mr. Adams over the years has collected a large body of materials pertaining to irrigation and reclamation and sundry other matters. Many of these have been donated to Bancroft Library, some are available in the Library at Davis, some are now in the Water Resources Archives of the University, and some still remain in Mr. Adams' possession.

This series of interviews was part of a larger series undertaken by the Regional Cultural History Project to record for posterity eyewitness accounts of significant phases of California's history during the 20th century.

Willa Klug Baum

Regional Cultural History Project
University of California General Library, Berkeley
July 30, 1959

Award of the John Deere Medal

by the

AMERICAN SOCIETY
of
AGRICULTURAL
ENGINEERS

PHILADELPHIA, PA.
June 25, 1947

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LIST OF ILLUSTRATIONS

FAMILY AND EARLY YEARS

ANCESTORS

Adams: My father, Edward Francis Adams, was the son of Reverend Thomas Adams and Catherine Swan Adams. My mother was the daughter of Aaron B. Cooper and Levinia Whipple Cooper. Father's paternal and maternal ancestors emigrated from England to Massachusetts in the early 1600's. We have no information about Grandfather Cooper's ancestors, but Grandmother Cooper descended from ~~Kelemn~~ Kenelm Winslow, who came to Massachusetts from England early in the 1600's. ~~Kelemn~~ Kenelm was the brother of ~~John~~ Edward Winslow.

Grandfather Adams was born in what is now North Brookfield, Massachusetts, and brought up on the farm of his father there under the strict religious conditions of 18th Century New England. He attended Dartmouth College, graduating in 1814, and following several years devoted to a study of theology and the classics, he entered the ministry. After something over half a century of dedicated service in the ministry and related activities as a Congregational missionary in the District of Maine

Adams: (before Maine was a state), pastor of several churches in Kennebec Valley of Maine, an ardent worker in the cause of temperance in Maine, pastor of several Congregational churches in Geauga County, Ohio, and agent for the Congregational branch of publications in northern Ohio, he returned to Kennebec Valley and died there in 1881, two days before his 89th birthday.

FATHER--EDWARD FRANCIS ADAMS

Youth and Young Manhood

Adams: Father was born in Augusta, Maine, December 30, 1839, while his father was editing temperance papers in Augusta. Father's younger days were spent in Augusta and nearby Portland and on an uncle's farm in North Brookfield on land that had been in the family for nearly two hundred years. When Father was about seven, Grandfather Adams took up his ministry in Ohio in Geauga County and it was there that Father grew into young manhood.

After a thorough classical preparation necessary in those days for entrance into college, Father went to Western Reserve University. He

Adams: was able to stay there only until about the middle of his sophomore year, owing to lack of financial support. Then he returned to his old neighborhood in Ohio and worked for a time on the farm of a cousin near Hambden. Hoping to become a lawyer, he studied with the leading lawyer in the neighboring county seat. After about a year of this he decided to go into farming and was a farmer on his own a few miles south of Chardon, Ohio. He served for about six months in the Civil War, but was invalided home with the scourge of the Civil War, dysentery. Several years after returning to the farm he was induced by an uncle to heed the western fever and move out to Missouri, where he purchased some land and anticipated being a farmer there. As an aid in establishing himself in Missouri he became land agent for a railroad which had lands out there and traveled over the country rather widely.

He had married when he began farming south of Chardon and took his wife and two young children to Missouri, but his wife and little daughter succumbed to typhoid. Completely broken, Father returned to Ohio with his little son Ned. He didn't know what to do for quite awhile. He worked on a farm, but soon decided to become a teacher. He became

Adams: proprietor and principal of an academy and superintendent of schools in a suburb of Cleveland. To supplement his income he became agent for school maps and books, in which he had become greatly interested. Deciding to give his full time to that work he resigned his superintendency of schools and moved into Michigan, where he and my mother married Christmas Eve, 1868.

Early Business Career

Adams: For the next ten years he was agent for various school publications and a magazine and finally became associated in Chicago with what was then the largest manufacturer of office, school, bank, and church furniture, A. H. Andrews. He was in charge of their agencies over the country.

Baum: It sounds like your father moved around quite a bit, took different jobs. Why did he do that?

Adams: He was in some branch of school supplies continuously from the time he began to be an agent of these maps and books as a side issue while he was teaching and superintendent of schools. He used his summers in that way. He gave up his superintendency of schools to go definitely into that same business. As conditions changed he moved over into another branch of that same industry, finally coming into the firm that

Adams: was manufacturing school, office, and church furniture. He was a born salesman in those days. He was just getting a new start after his marriage to Mother.

Move to California; Pacific Coast Agent for Schoolbooks

Adams: During those ten years from 1868, when he was married, to 1878, he was traveling so much that he became completely worn out. Fearing that he was going to be permanently ill, he took the family to California and went to the home of my Grandmother and Grandfather Cooper, who in the middle '70's had gone to California and begun farming on the Mendocino County coast near Kibesillah about twelve miles north of what is now Fort Bragg. This was, of course, pioneer country.

Baum: So your mother's family were pioneers also.

Adams: Yes.

Baum: How many children were there in your family by the time your father took you to California?

Adams: When the family moved to California, my older brother Ned went to Maine to be with Grandfather Adams and he stayed there until Grandfather's death in 1881. There were five children who accompanied Mother and Father to California, ranging

Adams: in age from three to eleven. There were my three sisters, Evangeline, Katharine, and Marion, and my brother Will. I was the youngest, having been born in Chicago, September 19, 1875.

After about a year on Grandfather Cooper's farm near Kibesillah, working in the open and spending a good deal of time fishing off the bluffs in the ocean, Father regained his health and went back to work. He was very well-known among schoolbook publishers and had several opportunities and he chose the Pacific Coast agency for A. S. Barnes & Co., publishers of schoolbooks. They later merged with other schoolbook firms into the American Book Company. The family moved to San Francisco in the summer of '79 and Father began what turned out to be about twelve years as agent on the Pacific Coast, the Rocky Mountain states, and Hawaii for these schoolbooks.

He had a very hard life in that work because he again was constantly traveling. His old trouble, which was largely dyspepsia due to irregularity of life, kept coming back to him. In Oregon, for instance, he was sometimes away from home as much as six months, traveling over the state and over into Idaho and Utah, in good and bad weather, by team and sometimes by horseback, seeing to it that the members

Adams: of boards of education in these various counties were on his side. That was his job.

He had to deal with legislators, he had to help draft school legislation because the laws were very crude at that time in Oregon where he worked primarily, and also in California. In '79 or '80 he went over to the home of the state superintendent of schools in Oakland and drafted a school law for California. He had become thoroughly versed in that field by dealing with legislators and school authorities in Ohio and Michigan.

Baum: What means did he use to do that? How did he persuade them? I suppose there were competing book agencies.

Adams: Oh yes, competition was very severe in those days. Well, he always said that he liked a fight and he was always a fighter, so he kept at it. He became acquainted with the right men. In his early days in Ohio he had to make the rounds of the school boards, going from member to member, to get his books adopted, so his experience dated back many years.

Baum: Did he do it by his own personality, or by the excellence of his books?

Adams: By his personality, his persistence, and his ability to make friends, by helping legislators and school authorities in drafting legislation. I remember he

Adams: said in a little autobiography he wrote that in his work in Ohio and Michigan the schoolbooks he handled had a distinctive quality and reflected a great improvement in educational methods, but the books he handled on the Pacific Coast were no better than those of his competitors. It was just a matter of who could get his line adopted. He was very vigorous, very much alive in his work. He made many friends and knew the best people. He learned how politics were worked. Around legislatures there was a lot he didn't like, and he was constantly writing home that at his first opportunity he was going to get out of that business and stay out of it. Father was referring here to his experiences with the American Book Company and not to those with A. S. Barnes & Co. before the merger with the various book firms into what was known then as the "schoolbook trust." He always said that his experiences with the Barnes firm were some of the happiest business experiences of his life.

He was very lonesome on these trips and his correspondence shows that if he didn't get a letter from home every day at a certain time he was very unhappy. That situation extended over 12 years. Of course, he wasn't far away all of the time because

Adams: his headquarters were in San Francisco. The family remained in San Francisco for about three years.

Farming in the Santa Cruz Mountains

Adams: After quite a search for a place for the family to grow up, Father had purchased a farm down in Santa Cruz County, in the Santa Cruz mountains, in 1881. We moved there in 1882. We still have that farm, by the way, in the family. That's where we were until the older children finished at the district school. We had the joy of attending the one-room district school up there. I wouldn't have missed it for the world. Then we moved back to San Francisco in 1889 where my three sisters and my brother Will entered Cogswell Polytechnical College, and I entered my last two years in grammar school. Cogswell, a privately endowed school of secondary grade, was then being operated by the board of education of San Francisco. It was an unusually fine high school with an unusually fine faculty, some of whom later became distinguished teachers elsewhere.

Early in 1892 Father left the work which had been so unsatisfactory after the merger of the schoolbook enterprises. The family went back to the

Adams: farm. That was just at the time of the depression. Father hoped to get into some new business, but the time was not ripe for that. For several years he stayed on the farm and went back to "dirt farming," but he was very active in community affairs.

Baum: What kind of crops did you have on your farm?

Adams: With the exception of about 25 acres, the farm was composed of various types of forest growth. These 25 acres of open land and five or ten acres which we cleared were planted to prunes, pears, apples, apricots, peaches, and grapes. It was a mountain farm on the top of the Skyland Ridge and a lovely place to live. It was a wonderful community with fine neighbors. Many of the people up there had come from the city after retirement from their activities there. There could never be a finer community to live in and for children to grow up in than that Skyland area.

Baum: What town were you near?

Adams: No town. Our nearest railroad station was Wrights. It was on the railroad that formerly ran through the mountains to Santa Cruz. There was a general store and a post office there. It was about four miles from the farm. The farm was on the crest of the Santa Cruz mountains, about ten miles back from

Adams: the coast, where we could look out over Santa Cruz, Capitola, across the bay to Monterey, and back through the gap above Los Gatos to Mt. Tamalpais. So it is beautiful country.

Baum: When you were away from the farm I suppose you had somebody to take care of the trees.

Adams: Of yes, a chum of my older brother back in Maine, who had come out to join us, took charge while we were in San Francisco attending Cogswell School. My brother Ned and this chum of his, Will Chamberlain, had been in school together there.

Organizing Cooperative Fruit Exchanges

Adams: It was not long after we returned to the farm in 1892 that Father became interested in a movement among farmers to establish their own marketing agency to dispose of their dried fruit. He attended a meeting in San Jose and was the only man who went prepared with a plan of organization. He was elected to the board of directors and made manager and was given the task of going about among the growers in Santa Clara Valley and raising funds to establish what was known as the Santa Clara County Fruit Exchange. The canvass for subscriptions to the stock of the exchange was successful, a building was erected,

Adams: and the exchange began operations, I believe, the following year. There were a number of local exchanges around the valley and others were organized. The Santa Clara County Fruit Exchange was to be the central agency for marketing the product from the local exchanges. Colonel Philo Hersey, a very prominent fruit grower in Santa Clara Valley, was president of the exchange.

After the work of organization was completed, Father turned to the organization of what was known as the California Fruit Exchange. This was a state exchange and was primarily intended to gather information as to markets and prices so that the local exchanges would have some information as to what their fruit was worth and not be at the mercy of the dealers. That venture did not last very long because of the hard times. It was very difficult. Father had both the task of raising money to keep it going and of gathering the data and issuing bulletins about markets and so forth all over the world. The president of the State Fruit Exchange was a very prominent grower at Yuba City, Mr. B. F. Walton.

Baum: The California Fruit Exchange didn't sell anything though?

Adams: No. It arranged for selling to some extent the first

Adams: year, but the local exchanges around the valley disposed of their products through the Santa Clara County Fruit Exchange.

I remember during the early days of the Santa Clara Fruit Exchange the packers were fighting the growers' movements very bitterly. One day, while Father and I were sacking the year's crop of prunes for shipment to the exchange, a gentleman drove up in a very smart rig with a view to getting Father to abandon the exchange and buy fruit for packers. That was the kind of competition the farmers had. I remember how proud I was of Father when he flatly refused, although he very much needed the money that he would have received because he had no income except from the farm, and farm prices were very low at that time.

Baum: He got no income as manager of the exchange?

Adams: Oh, some nominal figure. I think it was $5 a day when he was occupied. He was manager of the entire County Fruit Exchange only during the organization period.

Summer School of Economics and Husbandry

Adams: Back in the early days in Ohio while my Father was working on the farm of a cousin and while he was

Adams: studying law, he was very active in all community affairs. That was characteristic throughout his life. The same thing happened in our mountain farm country. We organized first a Farmers Alliance during the Populist movement, then a grange. Father was anxious that our grange should really do something. He therefore proposed, and the grange sponsored, and he organized, the first summer school of agriculture in California. It was known as the Summer School of Economics and Husbandry. It was sponsored originally by the State Grange, although we received no help from that organization. It was handled entirely by our Highland Grange, of which I happened to be secretary, thus I kept familiar with what was going on.

The summer school was held on our farm there in the mountains in the grove near a sulphur springs. That was in 1895. It continued through '96 and '97, although the last two years it operated on a reduced scale. We had lectures on agriculture in the morning and on economics in the afternoon. The lectures on agriculture were given by the members of the staff of the College of Agriculture of the University of California. All the members of the College of Agriculture staff, Dr. Hilgard, Professors

Adams: Wickson, Jaffa, Loughridge, Woodworth, and assistants Hayne and Bioletti, participated. In the afternoon the lectures on economics were given by Professor E. A. Ross of Stanford.

Baum: How were these men all paid?

Adams: They were not paid. We supplied their accommodations while they were in the mountains and they all came, volunteered. That was a normal thing for the College of Agriculture because the College of Agriculture staff always gave such service without pay except from the University. They were very glad to come. For Dr. and Mrs. Ross this was a vacation. I had the opportunity to get acquainted with all members of the staff of the College of Agriculture. Of course I got acquainted with Dr. Ross. He and Mrs. Ross stayed with us on the farm each year the school was held.

Baum: How much did the people who attended these lectures pay?

Adams: There was a slight charge of $2 per family for the entire course. Whatever expenses arose were borne by Highland Grange or local contributors, but they were nominal. We all pitched in and did the work. Our Highland Grange became known all over the state. The whole plan of that school was to have authoritative

Adams: instruction and discussion of issues relating to agriculture, cultivation questions, and economic questions affecting agriculture. The whole purpose was to find out the facts regarding these matters and to discuss them in an open-minded and fair way, without any idea of influencing anybody except as the facts would influence them.

We didn't have a large attendance at any of the schools. I suppose the maximum must have been forty or fifty, made up largely of the neighbors, but we had a number of very prominent men from the outside, including Mr. John Swett and his son Frank, who were very well known. John Swett was a great educator who, I think, had been largely responsible in the early days for establishing the public school system in California. At one time he was superintendent of schools in San Francisco and another time was State Superintendent of Public Instruction. The Swetts lived on a berry vineyard in Alhambra Valley back of Martinez, where Frank Swett still lives.

I remember we had one or two men interested in social welfare generally. We had probably the best-known shipper of fruits to Europe, Mr. A. Block. There were some prominent people in our neighborhood who came. It was very successful.

Baum: How long did the sessions last?

Adams: The first year it was two weeks. I believe it was three weeks one year, but I'm not sure about that. Immaterial.

Author of the Modern Farmer

Adams: Let me show you this book my father wrote.

Baum: (reading from book). Edward F. Adams, The Modern Farmer in his Business Relations, published in 1899 by N. J. Stone Company of San Francisco.

Adams: The initial inspiration for this book, I think, came from the first session of our Summer School of Economics and Husbandry. He was a student of economics and he read extensively on all phases of public life, government, and the economic situation of the country. At the conclusion of the first session of the summer school he wrote the opening chapters of this book. They were a summary, really, of Dr. Ross's first lecture, because Father had passed through the period in agriculture in Ohio that Professor Ross had described. Then he proceeded to write this book, mostly while he was traveling. He could sit in the smoking car of the train, smoke his cigar, and write. Nothing bothered him at all. So he wrote it practically out of his head without

Adams: reference to anything.

It proved to be a book of very great value. His idea all through was an objective statement regarding the economic issues of the day as they affected the farmer. Let me just indicate here some of the chapter headings: The Old Farmer, The New Farmer, The Evolution of the Farmer, The Hope of the Farmer, The Scientific Farmer, The Agricultural College, The Experiment Station, Special Schools of Farming, Agriculture in Common Schools, The Study of the Farm, The Further Study of the Farm. Those were all introductory chapters.

Then he took up the farmer's relationships with his family, his fellows, his competitors, his creditors, politicians, and finally the current discontent of the farmer. Then he discussed the farmer as a businessman dealing with the banker, with the commission merchant, with the railroads, with the speculator, with the tradesman, and with the tax-gatherer. Then the farmer as a cooperator, and he described the various phases of farmer cooperation with which he had been identified so closely in the Santa Clara and State Fruit Exchanges. Then the farmer and questions of the day.

I don't know where you can find as objective a

Adams: statement of the arguments on those questions as you can find here. He didn't express his own opinions in any case. His mind was objective in dealing with those things because he thought the great need of the time was for farmers to understand the facts regarding public questions rather than to be swayed by sentiment and emotion. He very clearly outlined the issues of the day, the tariff, the export bounties, the single tax, currency, labor questions, trusts, referendum, and socialism. His final chapter dealt entirely with California fruit marketing associations.

Baum: How did this book sell at that time?

Adams: That's a very interesting question. It didn't sell. I think only a few hundred copies were disposed of. It was published as a subscription book and it had hardly come from the press when the publisher went broke. The plans that the publisher had for canvassing it were very much curtailed. Father once said that he knew of no book that had ever received such high praise and so few subscribers.

It was very generously received all over the country. Presidents of universities, the Assistant Secretary of Agriculture, deans of colleges of agriculture, all wrote very high praises. I remember

Adams: the statement of Dean Henry of Wisconsin. He said, "The book has too much good sense to be salable." It was very well received, a very thoughtful book.

In later years when Dr. Mead came to the University, back in 1915 or 1916, he wanted Father to revise it, bring it up to date. Father did it for the fun of it, not expecting that anyone would publish it, and no one did. I have his revised manuscript.

Baum: You have written this typescript biography of your father. What are you planning to do with it?

Adams: I am going to try and finish it. I did it primarily for the family. I want to get enough copies made to distribute around to members of the family and put one in Bancroft Library.

Baum: You wrote the Early History of the Irrigation Division, College of Agriculture, University of California, (With some Side-Lights). Where will that typescript history be available?

Adams: There's a copy at Davis, a copy at Los Angeles, and I have a copy and you have a copy. Archives in the Library can have your copy when you are finished with it.

Baum: All right. I'll deposit it there.

Editorial Writer for the Chronicle

Baum: How did your father come to be a newspaper man and a writer for the Chronicle?

Adams: Father had become quite well known through his connection with the organization of fruit exchanges and the summer school held on our farm. Shortly after the conclusion of the summer school, Father was asked by the San Francisco Call, which was then a morning paper, to write a series of articles entitled "Plain Talks With Farmers." He prepared those articles during a period of six or eight months. I think it was while the articles in the Call were still running that he was asked unexpectedly by the Chronicle to become its agricultural editor and to prepare the agricultural portion of the weekly Chronicle. All the San Francisco papers published weekly editions in those days, largely for sale out in the rural areas. Father continued as agricultural editor of the weekly Chronicle as long as the weekly was published, which was, I think, for four or five years.

In 1898 the principal editorial writer of the Chronicle left to become war correspondent in the Spanish-American War and Father became principal

Adams: editorial writer on the Chronicle, and continued in that capacity until a few years before his death, nearly 30 years later. Also he was a frequent contributor of special signed articles in the fields of public affairs, finance, economics, and agriculture.

Baum: During the time he was agricultural editor on the Chronicle, was he able to stay on the farm in the Santa Cruz mountains?

Adams: Initially he remained on the farm and did most of his work there, but spent two days of every week in San Francisco with his material. When he became principal editorial writer he had to be there continuously so he and Mother moved back to San Francisco. Our permanent home in San Francisco wasn't established until about 1903.

Baum: I would like to ask you about your father's political opinions.

Adams: Father was a Republican. He grew up in the days of Lincoln and lived through the Civil War period. He was always a Republican, but not an extreme one. He often referred to himself as a stand-patter, which he really wasn't. I know of no one who could better indicate his point of view than Herbert Hoover. Father was a strong supporter of Mr. Hoover and men of that type.

Baum: Was he a Theodore Roosevelt supporter?

Adams: Oh yes.

Baum: In 1912, did he vote for Roosevelt or Taft?

Adams: Taft, by all means. Taft had been nominated and Roosevelt came in with a third party. I'm very sure he supported Taft.

Baum: He stuck with the party?

Adams: Yes.

Baum: What did he think of LaFollette? LaFollette split from the party in 1924.

Adams: Well, everyone had a high regard for LaFollette, and I know Father did, but I'm sure that Father did not vote for him.

Baum: Then he always stuck with the party.

Adams: I am not warranted in saying that he voted the straight Republican ticket. I do not remember that he ever told us how he voted. I doubt if he ever voted for a Democratic president. He probably always voted for a Republican governor, although in one case I know he didn't. He voted for Franklin K. Lane, who was defeated and later became Secretary of Interior. Lane was one of his close friends. When it came to the lesser offices I'm sure he voted for the man he thought was the better man for the job.

In the late '70's and early '80's he was very

Adams: active in the Republican Party. I know he attended at least one Republican State convention and also participated in the convention that drafted the new constitution of 1879 and had some part in drafting platforms. In the late '80's he ran for assemblyman from Santa Cruz County, but was defeated by a few votes. Above all he was opposed to graft and buncombe in whatever party it appeared. He had one rather peculiar idea as to politics. That was, as he expressed it to me, that everyone should vote according to his own interests and thereby the interests of the majority would prevail.

MOTHER--DELIA COOPER ADAMS

Baum: You haven't yet told us about your mother.

Adams: Mother was born in Warrensville Ohio, a small rural community outside Cleveland. Unfortunately, we have very little information about her early life. She taught school in Warrensville. I know this, because on visiting Warrensville in 1915 I met a lady who had gone to school and who spoke very affectionately of Mother as a teacher. Mother also taught in Newburg, south of Cleveland, where Father was superintendent of schools. She and father met in a boarding house there. Her last teaching was in

Adams: Hillsdale, Michigan, which was then the home of her parents.

The burden of rearing five children fell largely on Mother, owing to Father's frequent absence from home both before and after the family moved to California. When Father moved from Kibesillah to San Francisco in the early summer of '79, beginning his work as Pacific Coast agent for the Barnes' School Books, he left the responsibility on Mother for directing the harvest and marketing the crops on the portion of Grandfather's land which Father had planted. During the early years in San Francisco when my father was away in Portland and other places traveling on his school book business Mother took on the responsibility of making frequent visits to his office and taking care of his correspondence.

After moving to the farm in 1882 the responsibility of directing the farm work fell largely on Mother. Each morning our faithful Chinese farm worker would come to the kitchen door and ask for directions for the day. When the orchard and vineyard began to bear she joined the others in packing or processing fruit for market. She carried her full share in neighborhood activities. Feeding and clothing the children, keeping them well and happy, guiding them

Adams: and keeping them properly disciplined was not her only responsibility. I have often felt it was Mother's watchful care of Father which enabled him to accomplish so much. After a long illness, she left us in 1918. No mother ever gave herself more devotedly to her family, or was more loved by her family and friends.

BROTHERS AND SISTERS

Baum: Did all of your sisters and brothers go to college?

Adams: You will recall that my sisters and brother Will went to Cogswell School in San Francisco in the late '80's and early '90's. My two older sisters, Evangeline and Katharine, finished there in '91. My sister Marion left Cogswell School about the middle of her last year to become supervisor of drawing in the public schools in Stockton, succeeding my older brother Ned, who had been there in that position and who had entered Stanford when Stanford opened in '91. She had been a very fine student at Cogswell and I am sure later received her diploma of graduation there.

Ned came out to California when he was about 21 years old and was with us on the farm for several years. He then went off on his own on various

Adams: enterprises, finally ending up about 1890 as supervisor of drawing in the public schools at Stockton. When Stanford opened he had made up his mind he wanted to go to college and study mechanical engineering. He had been married and had one child and had to have a position if he went to college. So he want to Stanford on the third of October, 1891, two days after it opened. I went down with him as a kid in high school in San Francisco. He called on Dr. Jordan. Before he left that day he was offered three positions and chose one with Professor Charles D. Marx, head of civil engineering. So he became a member of the first faculty there as an instructor in drawing. There he stayed until the celebrated suit against the Stanford estate made it necessary for all in the faculty below the rank of full professor to leave. He had senior standing when the time came for him to leave. He rustled around for three months and got backing and went to Cornell, where he finished his engineering course. He was for a short time an instructor there and then went into engineering and had a very wide and successful experience as an engineer.

While still in Cogswell, my sister Evangeline studied singing and after the family returned to the

Adams: farm in early 1892, she spent a few months continuing her work in singing at Mills College. In 1896, the year I entered Stanford, she came down to College Terrace, where we lived, and kept a cooperative house for my other two sisters and myself and several friends. She was invited to go to Sao Paulo, Brazil, to teach music to children in an American school and spent about two years there. Later she graduated from San Francisco Normal School and taught for several years in the San Francisco schools. She had attended some classes at Stanford while keeping house for us, but did not register. Later she got her degree at the University of California and then taught in the San Francisco State Teachers College, being in charge of teacher training. She stayed there until her age of retirement.

Evangeline was married to Dr. Arturo Spozio, editor of an Italian daily paper in San Francisco. Dr. Spozio was a reserve officer in the Italian army and was called at the beginning of World War I and was killed in one of the early battles.

My sister Katharine, after graduating from Cogswell, attended and graduated from San Jose State Normal School and for several years taught in various places, beginning in our Skyline district

Adams: school. She was with us in our cooperative home in College Terrace from 1896 to 1897, but was teaching in the Mayfield High School. Later she graduated from Stanford and became a teacher in the state normal school at Tempe, Arizona. After several years there she was married to John Hicks, a cattleman of New Mexico, and lived there a number of years until her death.

My sister Marion graduated from Stanford in 1898 and for a number of years was a history teacher. She went first to Santa Barbara as supervisor of history in the schools at Santa Barbara and then to the Lick School in San Francisco, which was headed by one of her old instructors at Cogswell School. After 12 years at Lick School she became head worker of the People's Place, a community settlement in the North Beach area of San Francisco. When World War I broke out, she and my sister Evangeline went to Italy as Red Cross workers. On returning from Italy, Marion took charge of the Americanization work administered by the public schools at San Jose and carried through to their examination for citizenship a large number of foreign-born residents of the San Jose area.

My brother Will didn't finish Cogswell. He got

Adams: a job in business and was in business of one form or another until he went back to the farm, oh, along about 1921 or 1922, and stayed there until his death several years ago.

That's a rather disjointed account of the family history. There's much more to be told, but too much detail has been told already.

FRANK ADAMS--EARLY EDUCATION AND VOCATIONAL INTEREST

Baum: Did you attend Cogswell High School also?

Adams: When the family moved from San Francisco back to the ranch in 1892 I was in the middle of my first year in Cogswell. I was able, with the help of my sister Marion--family finances were very low after Father left his work--to finish that first year in Cogswell. Then I went back to the farm where I pitched in and did farm work. I had learned earlier to work on the farm and was very fond of the farm. I remained there for about a year and a half, when Father obtained a scholarship for me at Belmont Preparatory School, a boys' school of which Mr. William T. Reid, a former president of the University of California, was headmaster. I was able to attend Belmont for a spring term, either in '93 or '94, and then had to return to the farm where I took over and

Adams: looked after things until I entered college in the fall of '96.

When I entered college I had had only a disconnected year and a half in high school. Under the regulations at Stanford then, I could enter as a special student because I was almost 21, with the provision that I make up my deficiencies, either by examination or by extra work in college.

In the early days of Father's work in marketing and in connection with the Summer School of Economics and Husbandry, I had become acquainted with Mr. Alfred Holman, who was then editor of the Pacific Rural Press. I was looking forward to working with him because I was very much attached to him. He visited the farm on several occasions. During the summer school of agriculture I also had become tremendously interested in Dr. Ross and the field of economics. I had previously found among Father's books the first Outlines of Economics by Dr. Richard T. Ely, who was the pioneer teacher in that field in this country. So when I entered college I was not quite sure what I was going to do, whether I was going into the field of agricultural economics or into newspaper work with the Rural Press. I had had a little experience in newspaper work reporting for the San Francisco Call

Adams: the meetings of the summer school of agriculture back in 1895. Also some previous experience as our community correspondent for one of our Santa Cruz papers.

Alfred Holman and the Rural Press

Baum: Could you give me more details on Mr. Holman's career?

Adams: I didn't know too much about Mr. Holman in the early days. He came up to our farm one weekend in the first session of the School of Economics and Husbandry. I was very much taken by his personality and he was extremely friendly toward me. Later, after a heavy storm all over the state, he wired me up on the farm requesting that I let him know how all the fruit in our community had gone through the storm. That was a very important fruit-producing section at the time. I was very flattered by the telegram. I was about 19 years old then.

We took the Rural Press, of course, and I read it very religiously because I was interested in all phases of farming, especially fruit growing. It seemed to me that it would be fine to work with Mr. Holman on the Rural Press. Mr. Holman and a Mr. A. H. Halloran had acquired the Rural Press and the Mining and Scientific Press, I think sometime in

Adams: the early '90's. Mr. Halloran edited the Mining and Scientific Press.

Baum: Was Mr. Holman connected with any other papers?

Adams: At that time he was not. I will tell you about his other papers later. For many years he had been associated with the Portland Oregonian, edited and, I think, at least later owned by Mr. Harvey W. Scott. Mr. Scott was recognized as one of the very strong editors in this country and the Oregonian was generally looked upon as one of the strongest papers in the West, if not the strongest. Mr. Holman's grandparents moved to the Oregon country in the '40's and '50's and Mr. Holman had grown up there and entered the newspaper business with Mr. Scott, first as a cub reporter and finally as managing editor. He was a very great admirer of Mr. Scott, very closely associated with him. He once described Mr. Scott as "the parent of his mind." Mr. Scott once publicly referred to Mr. Holman as "the beloved son of his professional life." That shows their very close relationship. I found these things out later, of course. I didn't know them at the time. All I knew about him was from my brief contact with him.

Baum: What was his subsequent career?

Adams: Sometime in the middle '90's he had sold his interest in the Rural Press and returned to the Portland Oregonian. As I understood it at the time, he was taking charge of Mr. Scott's interest there. Perhaps Mr. Scott was traveling, as he frequently did. When Mr. Holman returned to the Oregonian I gave up my interest in going with the Rural Press because my interest in the Rural Press was largely my interest in Mr. Holman.

STANFORD UNIVERSITY

Financing A College Education

Baum: Then you decided to go to Stanford?

Adams: Yes. When I told Father I wanted to major in economics at Stanford with Dr. Ross, he asked me how I was going to sell my education. That was a good practical question. I frankly didn't know, but I thought I would find a way and I went ahead.

Father, being on the Chronicle, had suggested my name as a possible correspondent for the Chronicle at Stanford. I was given the position and for four years I had that position at Stanford and was able in that way to earn my way as I went.

Baum: Did you earn your full way by that one job?

Adams: I was a couple of hundred dollars in debt when I got out, which I paid with my first earnings after that.

Adams: I had worked one summer vacation as a canvasser for the Rural Press and for the Chronicle in Humboldt, Mendocino, and Sonoma counties. I earned enough to get started that fall. Otherwise I worked on the farm during the summers because there was plenty of work to do there.

Courses and Professors

Adams: I entered Stanford in the fall of 1896, five years after the university opened. It was still a very young institution. I remember that you couldn't fail to sense the atmosphere of freedom there. A German line was often quoted, "Die Luft der Freiheit webt", "The winds of freedom roll." I remember in Dr. Jordan's talks, it was one of the things he said.

Stanford in those days was substantially elective. Certain courses were required in engineering, but in other fields you merely had to satisfy your major professor that you had a well-rounded selection. I began pouring through the catalogue and picking out courses centering on economics. I took it to Dr. Ross, who was to be my major professor. He said, "I think you ought to have some science." I said, "I've had a little science in high school. I

Adams: had some physics and botany and I don't think I need that. I think I should go ahead in economics." "No," he said. "You go down and see the zoology department and talk it over." Well, as a result I took in my freshman year a basic course in zoology. It was one of the most beneficial courses I took.

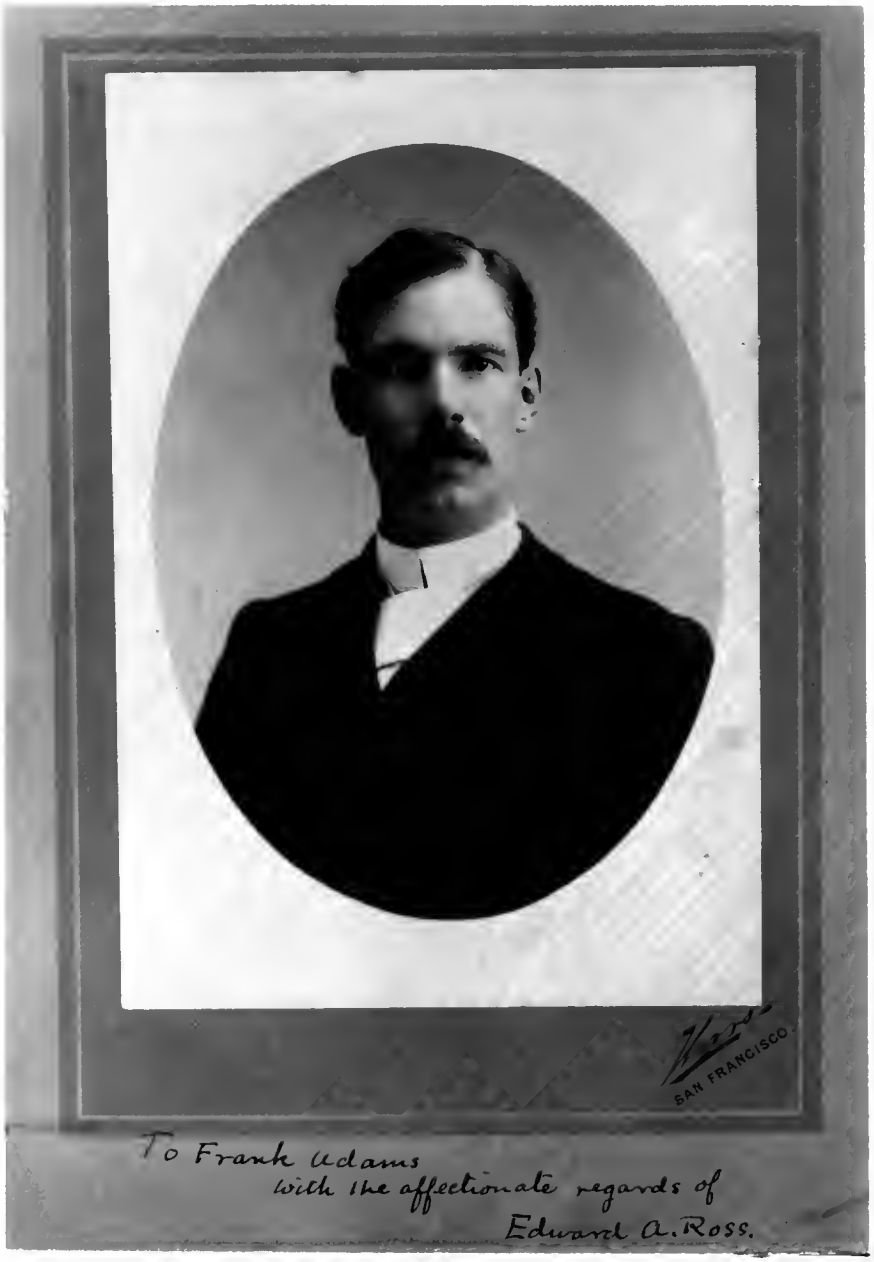
I also took a course in physics with Professor Rogers, one in algebra with Dr. R. L. Green, a year of entomology with Dr. Vernon L. Kellogg, and courses in botany with Professors William R. Dudley and Douglas H. Campbell. They tied in with agriculture and with the things I had become interested in while on the farm.

Dr. Ross also wanted me to take some foreign languages, so over the period of my work there I got in both German and French. The first year of German was very hard for me because, owing to the interruptions in my earlier schooling, I had forgotten what I had learned about grammar. My instructor was Miss Margaret Wickham. I took other courses in German. In fact, I took a course from each of the other members of the German faculty including Dr. Goebel, Dr. Griffin, Dr. Rendtorff and Mr. Schmidt. The courses covered German literature, both prose and poetry, and scientific German. These

Adams: courses were very enjoyable.

I also took a course in French with Professor Frien.

Of course, being a major in economics and sociology I took many courses in that field, in fact, more than were required. My recollection is that the head of the department when I started was Dr. Amos G. Warner, a very well-known man in the field of charities. He was not well and died shortly after I went there and Dr. Ross became head of the department. Dr. Ross was a great teacher and undoubtedly the, or one of the, outstanding men in sociology at that time. He was a stimulating lecturer and a great favorite of his students. His presentations were always thorough and if controversial questions came up he was always free from bias, although whenever right and wrong was at issue, he was always sure to be on the side of what he thought right. An example was his attitude during the 1896 political campaign on the money question. He espoused the Free Silver cause, because he believed the demonetization of silver had worked a great injustice. That was not a popular side to take on the Stanford campus at that time, but that made no difference to Dr. Ross. It was



Dr. Edward A. Ross

Adams: typical of his independence of thought.

I took a number of courses from Dr. Ross and at least one course from each of the other members of the economics and sociology Departments. One of these was Professor Harry H. Powers, a brilliant lecturer. He left some time in my second year and was succeeded by Dr. Frank A. Fetter, a wonderful teacher and man who later became head of economics at Princeton. Dr. E. Dana Durand came while I was there. He was subsequently in a responsible position with the United States Industrial Commission, and also director of the United States Census in 1910. Dr. Morton A. Aldrich came while I was there. He subsequently was dean of the School of Business at Tulane University. Lincoln Hutchinson was an instructor, and there was Mrs. Mary Roberts Smith, wife of the head of the department of mechanical engineering. Later, as Mrs. Dane Coolidge, she was professor of economics or sociology, or both, in Mills College. She and Professor Smith were divorced and she had married Dane Coolidge, who was a student in the college while I was there, much younger than she was. Finally, there was Dr. Burt Estes Howard, a very brilliant man who had made a great reputation as a speaker on social problems and as a minister.

Adams: He was there during my last year in college.

I took other courses outside of economics and sociology aside from those previously mentioned. One was in psychology with Dr. Frank Angell. There were two courses in English compostion with Professor H. B. Lathrop; a course in English literature with Dr. A. G. Newcomer and finally a general introductory course in law given jointly by the head of the department--Dr. Nathan Abbott, and the remaining members of his faculty, Professor Hall, Professor Clark B. Whittier, Professor Lewers, and Professor Jackson Reynolds.

I took a course in American history that was taught by George Elliott Howard, who was looked on by Dr. Jordan as one of the greatteachers of the country. Dr. Howard left in about my third year and his course was completed by Dr. Clyde A. Duniwauy, who subsequently became president of several western universities.

I finished Stanford with the Class of 1901, having been out one-half year on the Cache Creek investigations which will be mentioned later.

Baum: Did you take any engineering courses?

Adams: No. There were many very able and distinguished men at Stanford. They were especially outstanding

Adams: because the university was young and was charting a new course in education out here. Dr. Jordan had a wide acquaintance with educators in the East. He selected the faculty very largely from Cornell and middle western institutions. They stood out as very distinguished men, very impressive to the young student.

I could go on for a long time talking about those professors. I knew them to speak to, all of them. I got to know some of them quite well.

Baum: Was this in part because of your contact through the newspaper?

Adams: Partly, yes. Very largely. I found it desirable to know people, both faculty and students.

Baum: Were faculty salaries particularly high that they could attract such fine scholars?

Adams: No salaries were particularly high in those days, compared with salaries today. Dr. Jordan stated in his little book, Days of a Man, that the early salaries were from $2,000 to $3,600, but for a few of the higher places as much as $7,000.

Student Life

Baum: When you were in college, how many of the freshmen had already chosen their life careers?

Adams: Many of the students at Stanford when I was there were more mature than students now.

Baum: Were they older?

Adams: I was twenty-one. That was not any older than lots of others. There were others older than I. We had some just out of high school, of course, but you remember that the '90's were a period of depression. They hadn't recovered from the extreme panic of '93. A larger proportion than normal, I think, earned their living while they were in college. I remember making that the subject of one of my newspaper stories. It was a noticeable feature of the life there. They waited on table, some were agents for the laundries, there were some who did personal service here and there, several of us earned our living on newspapers. One student had a shoe repair shop; another a bicycle shop in a little annex to the Men's Gymnasium. Ernest Wilson opened a candy store in one of the buildings back of the main quadrangle and from that went on to establish a candy manufacturing business which opened stores in several cities and still manufactures the "candy with a college education." It was evident that a large number were making their own way.

Adams: There was very close association between the faculty and the students. Dr. Jordan always addressed the freshman class. I remember one of the things he used to say was, "You will have made a mistake if, when you leave here, you don't know many members of the faculty well and your major professors intimately."

There were the faculty at-homes. The Daily Palo Alto, the college paper, carried a column of these at-homes. Any student was welcome. I think students would go more to the homes of their major professors than to others, but I remember going to at-homes of a number with whom I had no other contact. I remember especially Dr. Melville Best Anderson's home at Menlo Park. He was the head of English, a great Shakespearean scholar. The Anderson at-homes were always in the afternoon on Sunday.

Dr. Jordan had at-homes frequently. He would sit in a big chair and the students would gather around him and he would tell stories of his experiences. I frequently went there.

Baum: Did many of the students take advantage of these at-homes?

Adams: Many did. There was always a nice group present. I went most frequently, of course, to Dr. Ross's home. Faculty wives entered into those at-homes

Adams: very heartily.

At Dr. Ross's he would talk to us or some of the students would be good storytellers. Dr. Ross was a good storyteller. I remember one of the Stanford women who frequently entertained us, an economics major, her name was Agnes Morley. She had grown up on a cattle ranch in New Mexico and had remarkable experiences as a young girl. A few years ago she wrote a book, which became a best seller, on her early life there, No Life for a Lady. She was then Mrs. Newton Cleaveland. Newton Cleaveland was a close friend of mine in college. Mrs. Cleaveland died only recently.

Dr. Ross used to be a great storyteller in his classes. He had this theory, that there always was a certain number who were inclined to go to sleep. When the rest of the class would laugh heartily, the sleepers would wake up and wish they had listened more carefully.

The student body was not large then, probably 1,000 or 1,200. I remember it reached 1,500 while I was there. The university opened in '91 with something between 400 and 500, which was a great surprise to Dr. Jordan. He had not expected so many. The University of California, believe it or not,

Adams: then had a student body of only about 400. In his Days of a Man Dr. Jordan spoke of a reception given for the Stanford faculty by the University of California faculty just after the opening of Stanford. A speaker from the University of California deplored the opening of Stanford. He felt that the University of California had only about 400 students and that Stanford was going to divide the available students between the two universities. That was Dr. Bernard Moses, a very noted member of the faculty at the University of California.

There was a good deal of activity among the students in organizations. Being a small institution, the students became more easily acquainted than in a larger institution. There were a great many student organizations for a university less than ten years old. These covered almost every phase of university activity--literary, athletic, music, as well as various departments such as zoology, botany, economics and engineering. Of course, there were the usual parties among the students.

I lived in Encina Hall a couple of years, the only dormitory for men. The women's dormitory was Roble Hall. Other students lived in Palo Alto, Mayfield, Menlo. Some commuted from San Jose or up the Peninsula toward San Mateo.

Adams: One thing about the student body, they came from a wide area. Some from many different countries. That was really an unusual feature at that time. The university started in that way because many students followed their professors from eastern colleges to Stanford. The beginning of a new university out in the west was something that attracted the entire country. With an endowment of $20,000,000, it was then the richest university in this country. I remember students from the Middle West, Montana, Oregon, Washington, Nevada, Colorado. So it was a cross section of a wide part of the country rather than mainly students that were attracted to the state University of California.

I was looking through one of my old Stanford picture albums and it brought to mind our life in Encina Hall. We paid only $5 a month for our rooms. I suppose blankets were supplied to us and we had a table and a couple of chairs and two iron beds and mattresses. Everything else we supplied ourselves, our table covers, our bookcases, any extra equipment we wanted.

(Look at pictures in album). Here is a picture of my room in Encina Hall, and Herman Grunsky, brother of C. E. Grunsky. He was then my roommate.

Adams: Here are some of my classmates. We always wore white shirts with the high stiff collars, my Father used to call them "dude collars". There were some less conventional attires but ordinarily we dressed this way. We had class hats. A junior hat was a gray plug. Senior hats were stetsons. Here's my old junior plug--still have it after fifty-odd years. All battered up.

I spoke of the atmosphere of freedom down there. No rules and regulations regarding students whatever. No prohibitions. The University was interested only in good work and good order. If from time to time someone overstepped the bounds, why, he went away. The saying in those days was that he was taken to the edge of the campus and dropped off.

I remember one notable instance of that. One of the most popular students in the University, who was a leader in all the deviltry and escapades, finally was dismissed. Word got around that he was to leave on the train. I went down there to cover the story. I think 90% of the student body was there. On my way back to the campus on my bicycle I fell in with Dr. Jordan. He was also on his big, high bicycle. Most of the faculty in those days had bicycles to get around on. Dr. Jordan said to me he felt very, very

Adams: sorry they had to dismiss Will Irwin. He was a very able and very fine man, but they just couldn't stand him any more. Too much deviltry. Later that man was forgiven, he came back and got his degree. He became a very distinguished man in journalism and was one of the very best of war correspondents during World War I. That was Will Irwin. Will began his journalism in San Francisco, then went to New York. His brother, Wallace Irwin, became very well-known as a writer, primarily as a satirist. He wrote poetry mainly at Stanford.

I feel sure Will Irwin and Chris Bradley and Billy Erb were largely responsible for first bringing out the old Stanford Axe originating the "Give them the Axe" yell. The axe was brought out first at a rally the evening preceding one of the games in San Francisco with California. I was there. It was at that game that it was stolen. After that, and in this I'm sure Will Irwin had a part, as a matter of reprisal, a group sneaked up to the Berkeley campus at night and stole the Senior Fence and put it on their wagon and started home. Early in the morning of the following day word came around that they were being pursued by a group of Berkeley students and wanted help. So we got together, oh, perhaps forty

Adams: or fifty of us, got in buses and went down through Mayfield and finally met them near Mountain View. We accompanied them triumphantly back to the campus and went on to the Inner Quad and everybody turned out. Instead of this being a reprisal, it was really a dud because the California students said they didn't care anything about the Senior Fence and they got away with that.

Participation in Student Activities

Baum: Did you take part in student activities?

Adams: Being interested in newspaper work I naturally worked on the college daily, the Daily Palo Alto, first as assistant editor and finally for a short period during my fourth year as managing editor. I resigned the managing editorship to give more time to my other work. I was on the board of editors of the 1901 Stanford Quad.

About 1900 the first Stanford alumni magazine, the Stanford Alumnus, was started, I think entirely as a private venture, by Charles E. Schwartz and Helen Swett, both of whom had graduated. I think they published it for three or four years and it was then taken over by the alumni association and has gone through several names. It is now the Stanford Review.

Adams: Debating was an important student activity. There were three or four student debating societies. I belonged to one of them, Euphornia. I was never a good debater but for some reason I was made chairman of the intercollegiate debating committee. This was the committee that arranged the intercollegiate debates in conference with a similar committee from California. The principal job of this committee was to select the judges for the intercollegiate debates, working with Joe O'Connor, who represented California. We took the matter of selecting of judges very seriously, and I had to inquire into the backgrounds and general aptitudes of those proposed by Joe O'Connor or whom I myself suggested. I did this work for about two years. Another job I had while I was chairman was to help work out an agreement with the California committee as to rules governing the judging. In alternate years a member of the Stanford and a member of the California faculty presided at the intercollegiate debates. Our debaters were not satisfied with the instructions given to the judges by the facutly member from California when he presided. So we negotiated an agreement that the presiding officer should give no instructions whatever to the judges. There were numerous other minor activities in which

Adams: I took part.

I remember one that seemed to me to be important at the time. It was a bit of proselyting among the high schools of the state. The president of the associated students appointed me chairman of the publication committee, and we arranged to have the college daily, The Daily Palo Alto, sent to high schools in the state. I presume this activity didn't last very long.

Tax Exemption on University Property

Adams: I'd like to go into another historical matter. Stanford was paying taxes on all its property. A movement was started to have the university exempted from taxes on all property involved in the educational work. Largely through the activity of George E. Crothers, who was a '95 graduate and who was then practicing law with his brother, Thomas G. Crothers, what was called an Anti-Tax Committee was appointed. That was soon changed to Tax Exemption Committee. An executive committee was named to direct the campaign. George Crothers was chairman. He asked the three correspondents of the San Francisco papers to be on that committee and I was one of them.

I left in 1900--I was out the fall term of

Adams: 1900--before the work was completed, so I resigned from the committee. We had undertaken to raise money to pay the costs of the campaign. When I resigned I felt obligated to send in a small contribution, which to me in those days was quite a contribution. I think it amounted to $5. I sent that to George Crothers. Many years afterwards I was riding with George between Baltimore and Harrisburg on the Pennsylvania Railroad and he told me that I was the only one who put in a nickel on that campaign except his brother and himself. They paid the entire cost of it. George drafted the constitutional amendment and it was subsequently adopted. Fortunately, George and Thomas Crothers were able to carry the financial load which must have been substantial. George was attorney for Mrs. Stanford and very close to her and her affairs throughout the remainder of her life. Senator Stanford had, of course, died by then and she was the sole trustee under the original grant. The board of trustees had been named, but, I believe, they didn't begin to function until after her death.

Dismissal of Dr. Ross

Adams: An unfortunate occurrence took place during my period there, what was known as the "Ross affair."

Adams: Dr. Ross was dismissed, reportedly at the insistence of Mrs. Stanford, for what she considered unwarranted attacks on the early railroad activities to which Leland Stanford was a party. There were, or course, in those early days great manipulations. Mrs. Stanford took offense. I won't go into the details of that. I cannot be sure of the facts after so many years. Dr. Ross's dismissal was looked into exhaustively by, I think, the American Economics Association, and the university was very severely condemned for what was considered a breach of academic freedom.

Baum: Because Dr. Jordan permitted Dr. Ross to be dismissed?

Adams: Yes. That was my understanding.

Another unfortunate aftermath was that through indignation at Dr. Ross's dismissal, Dr. George Elliott Howard, the great history teacher, spoke out bitterly against the dismissal and was also dismissed. That created further furor in educational circles.

Prior to events leading up the dismissal of Dr. Ross and Dr. Howard, Stanford had planned to create a historical research center to be housed in the old Hopkins home on California Street, the site of the present Mark Hopkins Hotel. Dr. Howard was to be head of this institute. Plans were rather elaborate. I remember this because I covered the plan for a

Adams: newspaper story. Whether it was due to Dr. Howard leaving I don't know, but the project was never carried out.

Baum: Did you come into contact with Dr. Jordan while you were at Stanford?

Adams: I had daily contact with Dr. Jordan's office as correspondent for the Chronicle. His office was always open to the boys who were doing the newspaper work. He was very cordial, generous, frankly told us about things not yet ready to be announced, knowing that we wouldn't abuse his confidence. So I knew him very well. It was a great burden for me, having such an affection for Dr. Ross and Dr. Howard, to reconcile Dr. Jordan's taking the part he did in the dismissal of Dr. Ross and Dr. Howard.

Time healed my feeling somewhat and I saw Dr. Jordan throughout most of the rest of his life. Dr. Jordan once told me he wanted me to raise a million dollars for Stanford to go into work in agriculture, which previously had been planned but discontinued because of lack of funds. He said, "When you get that money I want you to come here and help us spend it."

Baum: Did you raise that money for Stanford?

Adams: No. I was puzzled. I was then in the College of

Adams: Agriculture. I went to Dean Hunt and told him of Dr. Jordan's idea. Dean Hunt had no objections to my considering the matter at all. I wrote Dr. Jordan outlining what I assumed he had in mind for Stanford to do in agriculture, which was not to go into agriculture in all its branches as the University of California College of Agriculture, but to specialize in certain fields like entomology, plant physiology, soil chemistry, with a view to training teachers in the field. He wrote back that that was exactly what he had in mind. But I was not in a position to raise the money and never did. It did not seem to me proper that I should undertake this project for Stanford while on the faculty of the University of California. It was just an incident in my experience.

Baum: When was that?

Adams: Oh, I suppose about 1915 or 1916. Perhaps earlier.

Master's Degree at the University of Nebraska

Baum: When did you finish your M. A. thesis?

Adams: Dr. Ross had gone to the University of Nebraska. I was working out of Cheyenne, Wyoming at the time. It was possible in those days to register and study *in absentia* for a master's degree. So I arranged that with Dr. Ross. In 1906 I finished my thesis, which

Adams: was my work in Utah on the Virgin and Sevier Rivers, supplemented by some discussion I gave on the economics of irrigation. I don't have a copy of my thesis. I had it bound up and sent to Nebraska and it was accepted.

In the spring of 1906 I went to the University of Nebraska and spent six weeks there. They wanted me to get acquainted with their economics faculty and they with me. I did my principal work there in economic history with Mrs. Langworthy Taylor, wife of the head of the economics department. Then I went before the entire staff for a two-hour oral examination.

EARLY WORK WITH DR. ELWOOD MEAD

First Meeting with Dr. Mead

Adams: Having given up my ideas of working for the Rural Press when I was still in college, I had definitely made up my mind I wanted to work in one of the agricultural colleges. So when in 1899 the American Association of Agricultural Colleges and Experiment Stations met in San Francisco, I attended and went to all the sessions and met quite a lot of the people. I was at that time correspondent at Stanford for the Chronicle and I got them to send me on a week's excursion, which was arranged for the delegates of this convention, over the central and northern portions of the state. A committee composed of Professor Jaffa of the University of California College of Agriculture, Professor Emery Smith, then assistant professor of horticulture at Stanford, and my father raised something over $3000 to pay the expenses of this excursion. Mr. James Horsburgh, general passenger agent of the Southern Pacific Railroad, furnished the Pullman train with a diner at a nominal charge and an entire week was spent on this excursion. About 125 of the delegates to the convention went on the trip.

Adams: We went first up Russian River Valley as far as Ukiah to show them the northern coastal areas. We returned to San Rafael for a banquet that night at the Hotel Rafael, then a big hotel. Next day was a river steamer trip over the Delta, visiting a number of the large farms there. During the night we were carried down to Fresno and spent the next day going over the vineyards and out to the Kearney farm. Then we returned to San Francisco. The following day we went down to Stanford, then to the Santa Clara Valley where we had lunch at one of the large olive farms. We went on to the Hotel Del Monte for the night, where they had their final banquet. The next day the delegates took the 17-Mile-Drive. Leaving Monterey, we stopped at Salinas where the Spreckles sugar plant had just been opened. It was the largest beet sugar factory in the country. Then we stopped near Morgan Hill at the Morse Seed gardens. We were entertained there by the Chinese help at the seed gardens, who put on a marvelous display. Then we returned to San Francisco. That was the end of the excursion.

As correspondent for the Chronicle I had to file a story every night so I circulated very freely among the delegates. I talked with all of them, briefly

Adams: or at length, and came to know some of them very well during that brief period. That experience furthered my interest in agricultural college work.

One of the men I met on that trip was Dr. Mead. He was then known as Professor Mead because when he went to the Department of Agriculture a few years previously, the director of the Office of Experiment Stations, Dr. True, thought he should have a title to help him in his work in conjunction with the agricultural experiment stations. (The honorary degree of doctor of engineering was not received from Purdue until 1904.) He had, before being state engineer of Wyoming, been a professor or assistant professor of irrigation at Colorado Agricultural College at Fort Collins.

Dr. Mead was just completing arrangements then for an irrigation investigation in California covering nine areas or streams, Honey Lake Valley up in Lassen County, San Joaquin River, Kings River, Yuba River, Salinas River, Los Angeles River, with a special report on the storage rivers and torrential streams in Southern California, typified by the San Jacinto and the Sweetwater. The investigation was to be made the following year. Dr. Mead told me the reports of the investigations would be coming in and he

Adams: wondered if I would care to come with him and help put those reports into shape for publication. Well, that was an attractive offer for a kid in college and I showed a great deal of interest in it. He may have been inclined somewhat toward me at that time because Father had helped him very materially in arranging for this investigation and for part of the financing by California interests. So he knew who I was when I interviewed him and I can't explain otherwise why he offered me that position.

Baum: You were to be an editorial worker, not an investigator of water?

Adams: Yes, that was the idea. He suggested that in preparation for that work I make my last thesis at Stanford a study of riparian rights in California and I agreed to do that and did. In connection with that thesis on riparian rights I had occasion to see Mr. C. E. Grunsky in San Francisco, then city engineer. I wanted to find out from him about a report that the first state engineer, William Ham Hall, had written, which I could not find. Mr. Grunsky told me that Mr. Hall had submitted this report to Governor Waterman and that the governor had thrown it into the wastebasket. There had been a controversy between Mr. Hall and Governor Waterman regarding

Adams: hydraulic mining on the streams above the Sacramento. As a result of this controversy the office of state engineer was abolished and not reestablished until 1907.

Baum: Did you know William Ham Hall?

Adams: I met him once or twice and had some correspondence with him. I had read his reports and had seen him in the Commonwealth Club. He had figured very prominently in the engineering reports on early irrigation districts organized under the Wright Act.

I went back to college in the fall of '99 with this work with Dr. Mead in mind. I still, however, had my eyes on agricultural college work because the early interest had persisted, I was still in touch with the farm, and during the summer school of agriculture I had become well acquainted with and very much attracted to the entire faculty of the University of California College of Agriculture. So I had this in mind, economics and agriculture in some form, but rather hazy.

Another Opportunity to Go Into Newspaper Work with Alfred Holman

Adams: While all that was going through my mind, Mr. Holman came back into the picture. From then on I was in a

Adams: quandary, should I go with Mr. Holman or should I continue my plans with Dr. Mead?

Baum: What did Mr. Holman have to offer?

Adams: He then owned a controlling interest and was editor of the San Jose Mercury. He offered to take me on immediately, even before I was finished with college, at $100 a month. I had gone down to seehim because he had asked my father to suggest that I go down to see him. This was along in November of 1899, in my fourth year in college. So the remainder of that year I had these things in mind: should I look toward journalism with Mr. Holman or go with Dr. Mead? I might say here that this was not my last opportunity to go with Mr. Holman. After I had decided to go with Dr. Mead and been in the work for a year or two I met Mr. Holman on the train going from San Francisco to Sacramento. He had disposed of his interest in The San Jose Mercury and acquired an interest in and was editing the Sacramento Union. He invited me to stop off and spend the day with him in Sacramento which I did. I met and visited with his two editorial writers--Franklin Hichborn and Wells Drury. Franklin Hichborn of course became very prominent in the Progressive movement that culminated in the Hiram Johnson administration. Wells Drury gave California two very fine

Adams: citizens and conservationists in Aubrey Drury and Newton B. Drury, the former as secretary of the Save the Railroads League, and the latter currently director of the State Park Service in California after having served for a period as director of the National Park Service.

When late in the evening I left to resume my return to Cheyenne Mr. Holman said to me, "Whenever you bring your grip and say you're ready to go to work with me I still have a place for you." Of course, I was then established in the irrigation work with Dr. Mead and had no thought of changing at that time. Subsequently, Mr. Holman became editor of the Argonaut, and so far as I know his last newspaper activity was as editor for a brief period of the Oakland Tribune. It is my recollection that on the death of a member of the family that controlled the Tribune Mr. Holman thought he could obtain a controlling interest in it and edited it for perhaps only a few months when Joseph R. Knowland got control. My timing may be in error. It may be that he was editor of the Argonaut after his brief time with the Tribune.

Cache Creek Investigation

Adams: As previously explained I entered Stanford in '96, but with partial standing. I was to make up entrance deficiencies by examination and by taking extra units of college work. On account of this and my newspaper work, I couldn't take a full college load, so at the end of my fourth year in June, 1900, I still had a semester to go; however, the irrigations investigation in California was about to begin. I reported to Dr. Mead as ready for duty, because I had definitely decided to go with him rather than into newspaper work with Mr. Holman. Dr. Mead had concluded that I would first work as an assistant to Mr. J. M. Wilson in the study of irrigation on Cache Creek up near Woodland. He thought it desirable that I should have some field experience because I knew nothing of irrigation. I had seen my first irrigation on the excursion with the agricultural college people in the summer of '99. Mr. Wilson had not yet arrived for the work on Cache Creek so Dr. Mead directed me to report to the California Water and Forest Association in San Francisco. That had been organized a year or two previously and had raised money to help finance the investigation under Dr. Mead.

Baum: This was a private organization?

Adams: Yes. They raised a fairly large sum, perhaps $20,000 or $30,000, by private subscription and arranged with the Office of Experiment Stations of the Department of Agriculture and the Geological Survey and the Division of Forestry of the Department of Agriculture to undertake a study of water and forest matters in California.

Baum: Who were members of this association?

Adams: The president was Mr. William Thomas, who was a very prominent lawyer in San Francisco. I don't recall all the members, but they were such men as Fred W. Dohrmann, Arthur H. Briggs, who was important in State Board of Agriculture work, and T. Cary Friedlander who was secretary of the San Francisco Chamber of Commerce, I believe, and very much interested in forestry. Trying to find something to do pending beginning the work on Cache Creek about the first of July, I called on Mr. William Thomas, president of that association. He suggested that while I was waiting I look into the irrigation districts situation, seeing that organization of irrigation districts had been nearly a complete failure in California under the old Wright Act. He said that Judge James A. McGuire, former congressman from California, had

Adams: reorganized Turlock Irrigation District and put it on its feet, also that the Modesto Irrigation District was about ready to go ahead again. He thought it would be a fine thing to look into the history of the whole irrigation district movement. That's where I got my first interest in irrigation districts. This idea interested me very much, so I began assembling information about the old districts, first reading the Wright Act of '87. There was no complete list of the old districts available, so I addressed a letter to each county clerk in the state requesting information as to the names of districts organized in his county. At odd times during the summer I continued assembling information by mail and at the end of the summer had made a fair start. However, Mr. Wilson arrived about July 1 and most of my time thereafter was devoted to work with him.

I spent the entire summer with Mr. Wilson on Cache Creek. There had been a great deal of litigation over water rights involving Cache Creek and Clear Lake, out of which Cache Creek flows. Our job was to look into the history of that litigation there and how the doctrine of appropriation had worked on Cache Creek, how the conflicts came about, what the water supply was there, what the irrigation practice was--a

Adams: complete description of the irrigation situation on Cache Creek.

At the end of the season the engineers who had participated in the investigation over the state were brought together in a conference at the University of California campus with President Wheeler as host. Dr. Mead had brought the two universities into the investigation. The investigation on San Joaquin River was made by Professor Frank Soulé, head of civil engineering at the University of California. The investigation on Salinas River was made by Professor Charles D. Marx, head of civil engineering at Stanford. He also brought into the investigation Mr. C. E. Grunsky, who had been associated in the earlier work of the state engineer, William Ham Hall, and who was then city engineer of San Francisco. Mr. Marsden Manson, who made the investigation on the Yuba River, was another engineer who had been largely identified with irrigation in California. For the study of storage and irrigation on the San Jacinto River and Sweetwater River Mr. James D. Schuyler was in charge. He was a very well-known engineer and highly thought of, and he was recognized as an authority on storage. Mr. E. M. Boggs wrote the report on the Los Angeles River. The investigation on the Susan

Adams: River in Honey Lake Valley was made by Mr. William E. Smythe. I can best describe him as a publicist. He was quite a writer, an enthusiast in reclamation matters, not an engineer. I think that he had some early association with efforts to reclaim Honey Lake Valley. Mr. Wilson acted as an engineer-consultant for Mr. Smythe on the Susan River to keep him straight in that field. At the end of that conference the engineers drew up a statement of principles of legislation which they considered were needed in California to straighten out the water right situation. I attended that and listened in on it.

President Wheeler showed great interest in the investigations and in what was proposed in the way of legislation. At the end of the conference he invited Dr. Mead to come to California and organize a department of irrigation at the University. Dr. Mead did not desire to give up his position as expert in charge of Irrigation Investigations in the Department of Agriculture, but he consented to organize the department and to give about a six-week course of lectures each year, as well as to assign one of his assistants to act in his absence to give regular instructions in irrigation and to take charge of

Adams: irrigation investigations in California in cooperation with the University. That arrangement was carried out and Dr. Mead gave his first course in the spring of 1901.

On the completion of the work on Cache Creek, I accompanied Mr. Wilson first to Reno and then to Cheyenne to assist in preparing a report. I returned to Stanford in January of 1901. I was therefore in my last semester at Stanford when Dr. Mead gave his first course of lectures at the University of California. Dr. Mead had been out of college work for a good many years. He felt a little nervous about the University contacts and he thought I could help him in his work. He asked me if I wouldn't come down. I obtained a leave of absence of six weeks and worked with Dr. Mead in getting material together for his lectures. This made it tough for me to finish my work at Stanford, but I made it and got through in June, 1901.

It was a fine experience. Dr. Mead's lectures, with some revision, were published about the following year as his little book on irrigation institutions.

Baum: Can you remember your early impressions of Dr. Mead?

Adams: I was very strongly attached to him. My relationships with him were very intimate. During those six weeks of the lectures we had rooms at Professor Soulé's

Adams: home on Hillegass Avenue and I was with Dr. Mead constantly during the days and evenings on the work.

Baum: What did he look like in his younger days?

Adams: He had a rather youthful appearance. He was in his early forties.

Work in the Washington Office of the Office of Experiment Stations, 1901-1902

Adams: On completing my work at Stanford I reported to Dr. Mead. He directed me to proceed to Cheyenne, which was the field headquarters. I got there, not knowing what he was going to have me do. Within a few days after arrival, word came that he had been in a streetcar accident in Washington and his right arm had been amputated. That, of course, was a great shock to us there in Cheyenne. About a week later a wire came from Dr. True, director of the Office of Experiment Stations within which the irrigation work was conducted, directing me to proceed to Washington to be with Dr. Mead. Dr. Mead had recently established the main headquarters of the Irrigation Investigations in Washington.

I went there and was with him every day in the hospital while he was there and accompanied him to Atlantic City where I was with him while he recuperated.

Adams: I remained in Washington until February of 1902. My work was principally editorial. Various reports would come in from the irrigation men in the field, and I did editorial work on these reports and some of the final work on the report of the California investigations which was about to be published as Bulletin Number 100, Office of Experiment Stations, Department of Agriculture. Dr. Mead had me prepare a rather extensive review of this report which was transmitted to the Chronicle and published under my by-line. The purpose, of course, was to publicize this report in California, especially the recommendations regarding water rights legislation. The other reports on which I worked which I can definitely recall were a report on irrigation in Wisconsin by Professor F. H. King of the University of Wisconsin, and one on the irrigation of rice down in the southern states by Frank Bond.

Of course I became very intimately associated with the others in the Office of Experiment Stations. The Office of Experiment Stations was set up to deal with the experiment stations and agricultural colleges in connection with their use of federal funds under the Hatch and Morrill acts and subsequent acts.

Adams: It made annual inspections of their work and use of federal money. I was in a large room in which five or six, in fact, practically all the other members of the Office of Experiment Stations were working. There were Dr. E. V. Wilcox, Walter H. Evans, John I. Schulte, C. B. Smith (son of the director of the Michigan College of Agriculture, whom I'd met on that early excursion), Dr. C. F. Langworthy, D. J. Crosby and D. W. May (I think I have all of these initials correct.) Being right there in the same room with them every day I got to know them very well. That's where I met my wife, although we weren't married until five years later. She was a secretary, did my work. After I left Washington, she worked directly with Dr. Mead.

Years later, when I became connected with the College of Agriculture, several of these men came out on the annual inspection of the experiment station so I had a chance to renew the old association. They were long-lasting friendships I made there in that old office. The experience, of course, was a very valuable one to a young man just starting out.

Washington, D. C.

Baum: What was Washington like when you were there?

Adams: It was, of course, very interesting. Arriving there during mid-summer during an unusually hot spell, the city seemed a sleepy place to me. The population, as I recall it, was only about 150,000 although it has become way over a million now. It was not uncommon to see shacks scattered among the residences even in some of the better areas. The central shopping area was confined largely to F and G Streets and Pennsylvania Avenue from about 12th Street to the Treasury Building on 15th Street. The only new and modern government building was the Congressional Library. This was considered a marvel, and it really was.

Most everyone you met seemed to be "in office," meaning working in some way for the government. I guess that expression is still common there.

It was not long after I arrived that the tempo of the city was quickened by Theodore Roosevelt becoming President. I was in Washington when McKinley was assassinated and Roosevelt took over. His vibrant personality seemed to permeate the city, especially, of course, the political life. I lived in a boarding house on 15th Street just across the street from the little Swedenborgian church which Roosevelt attended. He always walked up from the White House trailed by

Adams: several of his sons and his younger daughter. They seemed to have difficulty in keeping up with him.

Another event that stirred the city in that summer was the court martial to determine whether Admiral Samson or Commodore Schley was entitled to credit for destroying the Spanish fleet which had been bottled up in the harbor of Santiago, Cuba during the Spanish American War. I spent an afternoon listening to the proceedings which were presided over by Admiral Dewey. I sat near enough to Admiral Dewey and the other men to get a clear impression of each of them. Admiral Dewey seemed to me to stand out head and shoulders above the others.

With the coming of fall, and especially with the opening of Congress early in December the social life of the city took on new emphasis. Of course I had no personal contact with this, but could not help but be aware of it. I did have opportunity to attend two of the President's receptions in the White House, where I had the privilege of shaking hands with him. Washington was then a great theater city, and it was not uncommon for plays to come down from New York for their premiere in Washington. It was fascinating to watch the celebrities, especially those of the diplomatic corps, as they arrived or

Adams: departed in their beautiful horse-drawn carriages. However, what was really most striking in Washington during that fall and winter was the dynamic personality of President Theodore Roosevelt.

One thing that surprised me was the absence of news from California and other western areas in the Washington city newspapers. I had to subscribe to the San Francisco Chronicle in order to keep posted on what was going on in California.

Lobbying Duties

Baum: While in Washington did you have to do any lobbying in support of your appropriation?

Adams: The only lobbying I did in Washington was very brief. In those days some of those associated with the movement for the Reclamation Act were opposed to Dr. Mead's ideas on federal reclamation and were constantly trying to cut off Dr. Mead's appropriations in the Department of Agriculture, so Dr. Mead had to be on the constant look out to keep his fences built in Congress. The appropriation for our work when I was in Washington was, I think, only about $50,000, but that was a great deal of money in those days. The House almost always cut that down to a very small figure. Dr. Mead had to call on Senator

[illegible]

[illegible]

[illegible]

built [illegible] house. The [illegible]

when I [illegible] Angeles was, I don't [illegible]

$500,000. [illegible] was a [illegible]

days. The house [illegible] almost always [illegible]

very small [illegible]. [illegible]

Adams: Francis E. Warren and Congressman Frank Mondell of Wyoming and others of his friends in Congress to get it restored.

One day Dr. Mead asked me to see Congressman Julius Kahn of California and Congressman Victor H. Metcalf of California to enlist their support in our appropriation in Congress. I called on Mr. Kahn. He was very gracious and promised to help out. I then called on Mr. Metcalf. He reminded me that just a few days previously President Roosevelt had issued an order positively forbidding any members of department staffs to lobby for support of their appropriations. I was through then. I had to leave. That was the extent of my lobbying in Washington.

I have a letter here I wrote to my father in 1901 regarding our efforts to get our appropriation.

Baum: (reads letter). This is very interesting. May I include it in the appendix of this interview?

Adams: Yes, if you think this desirable. (See Appendix for letter.)

Baum: Did your office always have to keep pressuring to keep your appropriation up?

Adams: That was true for many years. Those in the field in irrigation work had as one of their duties to

Adams: attend conventions and get legislatures and associations interested in irrigation and reclamation to pass resolutions favoring our appropriations. I had a little of this experience in lobbying years later when temporarily in California from Cheyenne during the illness of Mr. Wilson who was in charge there.

I remember leaving one night to go up to see Will S. Green, who was head of the Sacramento Valley Development Association and long known as the "father of irrigation in the Sacramento Valley." They were having a meeting of this association in Colusa and I took the train, got up there after dark, registered at a hotel, and asked where I could find Mr. Green. I was told the board of directors of the association were having a meeting upstairs right then. So I went up and sat down. I was recognized by the secretary of the board, Mr. Harry Stabler of Yuba City. He came down and asked if there was anything he could do for me. I explained what was wanted. I had in pocket a resolution already prepared, of course. I read it to him. He said, "That's all right." I sat down. In fifteen or twenty minutes it was passed and I left the meeting and returned to Berkeley.

Baum: Did you have many contacts with Will S. Green?

Adams: I met him first in 1900 at a meeting of the Sacramento

Adams: Valley Development Association at Colusa and saw him frequently in later years at meetings of the association. He was a very forceful man and very much devoted to the cause. He was largely responsible for organizing the old Central Irrigation District back in 1897. I read that he superintended the construction of the Central Canal which later became the nucleus of Glenn-Colusa and other irrigation districts of that area.

Another example, Henry T. Gage was governor of California in the early 1900's. I was temporarily in California from Cheyenne. Word came from Dr. Mead that I was to see Governor Gage and get him to support a resolution in the legislature. So I went up to Sacramento and found that he was in the Palace Hotel in San Francisco. I returned immediately to San Francisco to the Palace and found that he had returned to Sacramento. So I went back to Sacramento and was ushered into his office and very cordially received. He was rather a gruff and formal kind of man, but he indicated that he would help us and I assume he did, I don't remember, but we got our appropriation.

At that time the legislature was appropriating a small amount to our work, the Geological Survey work, the Forestry work, topographic surveys, and stream-gauging. It came in the form of a biennial appropriation.

Adams: About 1908 Mr. Clyde Seavey, secretary of the State Board of Examiners, got the legislature to pass a continuing appropriation so we no longer had to do that regular lobbying.

I had a long and very friendly association with Clyde Seavey through the years, a very fine man, one of the ablest and most devoted public servants I ever knew. The State Board of Examiners was changed to the State Board of Control and Mr. Seavey became a member. Later he became a member of the State Railroad Commission and from that he became a member of the Federal Power Commission. My last contact with him was while he was chairman of the Federal Power Commission in Washington, about 1934. He should have been governor of California. He would have made a very great governor. He was highly regarded everywhere.

Baum: I take it you disliked your public relations duties.

Adams: I hated to go after legislative support for money. My other public relations I liked. In fact, my whole work involved people. I never felt I learned very much in the office. I had to learn in the field. Whatever I was doing I thought out in the environment of my subject, in contact with the people involved. So that type of public service I enjoyed.

Baum: In other words, you like to give service and assistance.

Adams: Yes.

RECLAMATION ACT OF 1902 AND DR. ELWOOD MEAD

Pressures for a Reclamation Act

Baum: You were in Washington about the time the Reclamation Act was passed.

Adams: The movement for a reclamation act was just coming to a head at that time, 1901-1902. There were two national organizations concerned with irrigation and reclamation, the National Irrigation Congress and the National Irrigation Association. The National Irrigation Congress was widely representative of the irrigation interests in the West. It met annually in different cities in the West, had a large attendance and was primarily concerned with administrative, engineering, agricultural and other local problems. It was, of course, much interested in obtaining federal aid, but that was by no means its main function. The National Irrigation Association, on the other hand, was a purely promotional organization devoted to campaigning for federal aid. It presumably had prominent westerners as officers, but the real directing power was George H. Maxwell, a San Francisco attorney who had been employed earlier by large land owners in the San Joaquin and Sacramento valleys to fight operations under the Wright Irrigation District Act.

Adams: He was the one who carried the Wright Act to the United States Supreme Court which finally resulted in the act being declared constitutional in the famous Fallbrook Case.

Well, Mr. Maxwell got his largest financial support, I'm quite sure, from the western railroads which supplied him with $30,000 a year for his propaganda. The interest of the railroads was, of course, to build up the country through which their lines passed. The states and local communities also pressed for federal aid. In Washington the governmental agency that was most directly concerned was the Geological Survey. Following the investigations of Major Powell, the Geological Survey had been studying the lands and forests and measuring the streams. It was the Geological Survey which was to be the agency through which the proposed Reclamation Act would be administered. It had probably already been determined that F. H. Newell, head of the hydrographic branch of Geological Survey, would be in charge. At any rate, he was very active in the promotion. Allied with him were the heads of several bureaus in the Department of Agriculture, notably Gifford Pinchot who was head of the then Division of Forestry and Milton Whitney, chief of the Bureau

Adams: of Soils.

Baum: What were Dr. Mead's ideas about federal aid? Did he favor passage of the Reclamation Act?

Adams: Dr. Mead was strongly in favor of federal aid, but he did not believe the urgent need at that time was reclamation of additional public lands. Most of the land in the irrigated areas of the West was already under private ownership. In some sections what was needed was storage of spring floods to supply late summer irrigation needs. The storage he had particularly in mind was that in the channels of streams. He believed this should be under public control in order to avoid water rights controversies in the use of the water stored. In some other sections the areas under canals already constructed greatly exceeded the areas irrigated. Dr. Mead believed the aid needed in those sections was such as would ease the burden of settlers and hasten the settlement of the area.

He probably had more knowledge as to the water needs of the western states than anyone else and his primary interest was in federal aid that would help solve existing problems. Anyone interested in really understanding the irrigation situation in the West at that time should read the last chapter of Dr. Mead's book, Irrigation Institutions, published by MacMillan

Adams: in 1903. I think Mr. Maxwell and those associated with him in the Geological Survey, on the other hand, were strongly in favor of the government itself going into the irrigation business on a large scale.

Baum: I should think Mr. Maxwell would not have wanted that government participation in as much as it also meant regulations, such as the 160-acre limitation.

Adams: That 160-acre limitation was introduced into the bill in Congress. Matters of that kind, however, didn't come up much in the campaign for the act.

The propaganda for federal aid largely centered in the Geological Survey and in Mr. Maxwell and those associated with him. The knowledge of the West possessed by the Geological Survey must have been considerable. For many years the Geological Survey had been measuring extremes in the West and studying the public lands. They framed their ideas as to the type of reclamation there should be in the West on that experience. Dr. Mead, on the other hand, had the point of view of the irrigators primarily. He wasn't so much concerned then with the public lands.

When President Roosevelt came to write his first message to Congress he asked Senator Warren of Wyoming to confer with him about how he should treat federal aid for reclamation. Senator Warren recommended

Adams: that he call in Dr. Mead.

I might go back a little here and say that it was Senator Warren who had been instrumental in getting Mr. Mead to leave Colorado Agricultural College and go to Wyoming as territorial engineer and to prepare with Senator Warren the first irrigation act for this territory. Senator Warren undoubtedly also had been instrumental in getting Dr. Mead into the Department of Agriculture to head the Irrigation Investigations there. Well, President Roosevelt did ask Dr. Mead to confer with him and was very much interested in what Dr. Mead suggested. He said very emphatically, "That's what I want. Write it out. Send it to me."

Dr. Mead went back to the office and asked me to sit in with him while he was preparing this letter. When the letter was finished Dr. Mead had me take it over to the White House.

When the message came out it had a good deal of Dr. Mead's letter, almost verbatim or substantially verbatim, and expressed very clearly Dr. Mead's ideas. To reinforce myself on that I went over to the library the other day and had this photostatic copy made of that part of the message that referred to reclamation legislation.

[illegible]

[illegible]

[illegible]

Dr. Mead's Background in Western Irrigation

Irrigation Laws of Colorado

Baum: What was Dr. Mead's background in irrigation in the western states?

Adams: Dr. Mead came out to Colorado in the early '80's. For about three years, but not continuously, he was a professor of irrigation at the Colorado Agricultural College at Fort Collins. There he was able to become thoroughly acquainted with the Colorado system of administering water rights.

Except for Utah, which had administered water rights largely under regulations set up by the Mormon Church, Colorado was the only state in the West that had adopted a comprehensive water code. All the other states had followed a simple procedure which had developed in California during the early mining days. By that procedure anyone desiring to appropriate water would post a notice of appropriation on the bank of the stream from which water was to be taken and file a copy of this notice in the office of the county clerk. There was no check by any authorities as to whether the appropriation was perfected by diversion and use of the water; there was no check as to the quantities to

Dr. Mead's experiment in West Indian Christianity

[illegible]

Adams: be appropriated. The county clerks' offices were filled with these notices of appropriation, some of which were indefinite as to amount or not clear in other respects. Some would call for the appropriation of all the water in the stream. It was impossible to tell from the county records whether appropriations had been perfected by diversion and use. When controversies arose they were carried to the court and any decision by the courts would relate only to the relative rights of the parties to the suit. There was no way in which all the claimants to water on a stream could be brought into the suit, or at least there was no procedure of that kind. The litigation might settle the rights as between the parties to the suit, but not as against all other appropriators on the stream.

The Colorado code made very distinct advances. It set up the office of state engineer and provided that all appropriations for water in the state should be filed in his office. The state also established water divisions and water districts for administering the distribution of water. Furthermore, which was very important, the law authorized any appropriator to bring into a suit all claimants to water on the stream.

Adams: In addition to being at the state agricultural college, Dr. Mead was, for a brief time I believe, associated with the state engineer as assistant state engineer. At any rate, he was able to become fully familiar with the Colorado law and to notice its shortcomings. One was that there was no provision for the state engineer to check on the appropriations that were filed in his office, nor as to whether appropriations were actually completed by diversion and use of water, nor as to the capacities of the ditches and canals, nor as to the amounts of water actually put to use. Furthermore, in the absence of any expert testimony regarding these matters from the state engineer in the litigation, the courts awarded many excess decrees. That is, they adjudicated the rights largely as to the capacities of the ditches rather than as to the amount of water used. When working in Colorado in 1903 I tabulated the total adjudications and the total diversions on one stream and found a wide discrepancy.

Irrigation Laws of Wyoming

Adams: In 1888 Mr. Mead went to Wyoming as territorial engineer. Between then and 1890 when Wyoming became a state a constitution was drafted and adopted. It

Adams: included a provision that all the water in the state belonged to the state. This was the first instance of such constitutional provision.

When Wyoming became a state Mr. Mead became state engineer. The first thing necessary was to draft a law which would provide means by which water, now the property of the state, would be administered. Mr. Mead is generally understood to have drafted that law, and I am sure he did. Francis E. Warren, later Senator Warren, had a good deal to do with it also. Legislation is frequently the result of the ideas of a number of people, but I am sure the basic provisions of the Wyoming law were adapted by Mr. Mead in the light of the knowledge he had gained while at Fort Collins. Mr. Mead's ideas and general philosophy regarding the administration of water in the West had been influenced by the work of Major John Wesley Powell of the Geological Survey. Major Powell made a long study of the lands, waters, and forests of the West and had written his classic report, Lands of the Arid Region. Mr. Mead knew Major Powell and was thoroughly familiar with his work.

Baum: What were the major provisions of the Wyoming law?

Adams: The office of state engineer was created and the state engineer was given general administrative

included a provision that all [illegible] state belonged to the state. This was the first instance of such constitutional provision.

When Wyoming became a state Mr. Mead became state engineer. The first [illegible] draft a law [illegible] not the property of the [illegible]. Mr. [illegible] generally considered [illegible] law, and I am sure he [illegible]. Senator Warren, had a [illegible] [illegible] frequently [illegible] [illegible] of Mead, but I [illegible] of the Wyoming [illegible] were adopted. [illegible] knowledge, [illegible] [illegible]. [illegible] ideas [illegible] [illegible] [illegible] by the [illegible] of [illegible] Survey. [illegible] a long [illegible] lands, [illegible] the West [illegible] written his classic [illegible] the Arid [illegible]. Mr. Mead [illegible] thoroughly familiar with his work.

What were the major provisions of [illegible]

The office of state engineer was created and the state engineer was given general administrative

Adams: authority over the waters of the state. Anyone desiring to appropriate water was required to file an application with the state engineer with adequate maps and other descriptions to indicate the place and nature of the appropriation. The application would then be examined by the state engineer and if he found that water was available and that the application was in order he would issue a permit to appropriate. The law specified that the appropriation must be completed within a certain period. At the end of that period the state engineer would examine the works built by the appropriator and the land irrigated and would issue a license to appropriate the amount of water specified in the license. This became a permanent right.

Of course, before the Wyoming law had been adopted many water appropriations had been made in the state and it was now necessary to adjudicate these in order to clear up the records. Instead of having the courts adjudicate these rights, the Wyoming law provided that they should be administratively adjudicated. A state board of control was set up composed of the state engineer and the superintendents of the two or three hydrographic divisions into which the state was divided. The adjudication began by having the

[illegible]

Adams: superintendent of the division in which the rights were to be adjudicated make the necessary surveys to determine the location of ditches and of the irrigated land. He would take testimony of users up and down the stream as to dates of priority, as to water used and would then post this information so that all interested could have access to it. There would then be a final hearing and, on the basis of all the information gathered by the superintendent of the division, the State Board of Control would adjudicate the priorities. There was, of course, appeal to the court on any of the decisions. As a matter of fact, there were practically no such appeals.

As in Colorado, the main hydrographic divisions were divided into watermaster districts, or at least provision was made for doing this, and watermasters were to be appointed to supervise the distribution of water within the districts in accordance with the priorities as established. The watermasters in each case worked under the general supervision of the division water superintendents.

A feature the Wyoming law sought to eliminate was the ownership of water by speculators. Such speculation had been pointed out by Major Powell in his Lands of the Arid Region. He believed that only those who used the

Adams: water should have the right to it. Adopting this principle the Wyoming law provided that there should be no direct ownership of water, but only the right to use water and that such right should be attached to the land irrigated. In other words, in principle the water would belong to the land rather than to an individual.

Roosevelt's Message to Congress, 1901

Adams: Now coming to the President's ideas and to what extent they were influenced by Dr. Mead and to what extent they differed from Dr. Mead's, I can do best by going through this excerpt from his message. It is from Volume 35 of the Congressional Record beginning on page 86, dated December 3, 1901.

President Roosevelt was familiar with the West, but I think his knowledge was more or less limited to his experience in the early '80's up in the Badlands of the Dakotas, where he had invested in a cattle ranch. That was cattle country. I've never known of any knowledge he might have had of the irrigated sections of the West. He had a wide knowledge of forests and quite a lot of his message is devoted to forestry and the effect of forests on the water supply.

When it came to reclamation, he said,

[illegible]

[illegible]

[illegible]

Dr. Elwood Mead

Adams: The forests alone cannot, however, fully regulate and conserve the waters of the arid region. Great storage works are necessary to equalize the flow of the streams and to save the flood waters. Their construction has been conclusively shown to be an undertaking too vast for private effort. Nor can it be best accomplished by the individual States acting alone. Far-reaching interstate problems are involved; and the resources of single States would often be inadequate.

Then he made his argument for federal aid. What he said in that connection was generally accepted as sound and fully concurred in by Dr. Mead. Dr. Mead even went so far as to believe that these federal works in aid of irrigation should be paid for by the government beyond the amount the farmers themselves could afford to pay.

Baum: You mean that it shouldn't be paid for by the benefited lands only?

Adams: I wouldn't put it quite that way. Everyone believed the proceeds of the public lands should be devoted to that purpose. The President, in his message, stated that the works should be repaid for as far as possible by those who used the water. I think Dr. Mead would have gone a little farther than anyone else at that time as to the extent the federal government should assume part of the cost, but I'm not sure about that. I know he believed water from the government projects should be given free during the early

[illegible]

Adams: years while settlers were being established, leaving repayment to the future.

To quote further from the President's message:

> The Government should construct and maintain these reservoirs as it does other public works.

Now comes a very important statement, which I am sure was a contribution by Dr. Mead because it represents a very important point in his philosophy.

> Where their purpose is to regulate the flow of streams, the water should be turned freely into the channels in the dry season to take the same course under the same laws as the natural flow.

Although Dr. Mead stressed the need for water storage in order to eliminate water shortages in periods of low stream flow and although he felt there was no need at that time for reclaiming further areas of public land, I'm sure he agreed in general with the President's statement regarding reclamation of the public lands. Let me quote further from the President:

> The reclamation of the unsettled arid public lands presents a different problem. Here it is not enough to regulate the flow of streams. The object of the Government is to dispose of the land to settlers who will build homes upon it. To accomplish this object water must be brought within their reach.

I believe Dr. Mead would also have approved this statement from the message:

> The pioneer settlers on the arid public domain chose their homes along streams from which they could themselves divert the water to reclaim

Adams: their holdings. Such opportunities are practically gone. There remain, however, vast areas of public land which can be made available for homestead settlement, but only by reservoirs and main-line canals impracticable for private enterprise. These irrigation works should be built by the National Government. The lands reclaimed by them should be reserved by the Government for actual settlers, and the cost of construction should be as far as possible repaid by the land reclaimed.

Now I will read some sections of the President's message which most fully express Dr. Mead's ideas as to federal reclamation. I'm sure that in substance, and in part verbatim, they were taken from Dr. Mead's letter:

> The policy of the National Government should be to aid irrigation in the several States and Territories in such manner as will enable the people in the local communities to help themselves, and as will stimulate needed reforms in the State laws and regulations governing irrigation.
>
> The necessary foundation has already been laid for the inauguration of the policy just described. It would be unwise to begin by doing too much, for a great deal will doubtless be learned, both as to what can and what can not be safely attempted, by the early efforts, which must of necessity be partly experimental in character....
>
> Whatever the Nation does for the extension of irrigation should harmonize with, and tend to improve, the condition of those now living on irrigated land. We are not at the starting point of this development....A high degree of enterprise and ability has been shown in the work itself; but as much cannot be said in reference to the laws relating thereto. The security and value of the homes created depend largely on the stability of titles to water; but the majority of these rest on the uncertain foundation of court decisions rendered in ordinary suits at law.

Adams: With a few creditable exceptions, the arid States have failed to provide for the certain and just division of streams in times of scarcity. Lax and uncertain laws have made it possible to establish rights to water in excess of actual uses or necessities, and many streams have already passed into private ownership, or a control equivalent to ownership.

I am sure inclusion in the President's message of these views relating to desirable federal policy were a great disappointment to Mr. Maxwell, Mr. Newell, and the others associated with promoting federal aid. It was just such views as these expressed in the President's message that had caused the rift between them and Mr. Mead. They were not interested in strengthening state administration of water and fitting the federal policy into local needs. They were embarked on a program of vast federal reclamation works and wanted no interference.

Another matter on which Dr. Mead felt very strongly was expressed in the President's message. It was that relating to private ownership of water apart from the land. This was a fundamental to Dr. Mead, and I believe the language of the President's message is almost exactly that contained in Dr. Mead's letter. I quote further:

> Whoever controls a stream practically controls the land it renders productive, and the doctrine of private ownership of water apart from land cannot prevail without causing enduring wrong.

Adams: The recognition of such ownership, which has been permitted to grow up in the arid regions, should give way to a more enlightened and larger recognition of the rights of the public in the control and disposal of the public water supplies. Laws founded upon conditions obtaining in humid regions.....have no proper application in a dry country.

In the arid States the only right to water which should be recognized is that of use. In irrigation this right should attach to the land reclaimed and be inseparable therefrom. Granting perpetual water rights to others than users, without compensation to the public, is open to all the objections which apply to giving away perpetual franchises to the public utilities of cities. A few of the Western States have already recognized this, and have incorporated in their constitutions the doctrine of perpetual State ownership of water.

My final quote which brings out Dr. Mead's thought:

Our aim should be not simply to reclaim the largest area of land and provide homes for the largest number of people, but to create for this new industry the best possible social and industrial conditions; and this requires that we not only understand the existing situation, but avail ourselves of the best experience of the time in the solution of its problems. A careful study should be made, both by the Nation and the States, of the irrigation laws and conditions here and abroad. Ultimately it will probably be necessary for the Nation to cooperate with the several arid States in proportion as these States by their legislation and administration show themselves fit to receive it.

I think that is sufficient to bring out the ideas Mr. Mead had with regard to public aid to irrigation. He was interested in the first instance in regulating the flow of streams in the existing

Adams: irrigated areas so that they would have a full season's supply rather than an ample supply in the spring, and little or no water in the fall.

There is one point I want to go back and emphasize. That is that water from federal works should be distributed according to state laws. Here is what the President said in his message:

> The distribution of the water, the division of the streams among irrigators, should be left to the settlers themselves in conformity with State laws and without interference with those laws or with vested rights.

I am sure those directly concerned with water in the West were fully in accord with the above statement from the President's message. I feel just as sure that the Geological Survey and Mr. Newell were not. Western influence was able to get into the law a provision that the federal government should apply to the states for water rights for their projects just as anyone else might do. I have no right to say just what was in Mr. Newell's mind, but it must have been a thorn in his side to go into Mr. Mead's state of Wyoming and apply for rights to appropriate water for the North Platte project.

Controversy Between Mr. Newell and Dr. Mead

Baum: Can you tell me more about the controversy between Mr. Mead, Mr. Maxwell, and Mr. Newell?

Adams: The controversy was very bitter. It came to be, really, a personal matter between them.

It first came to a head in 1900 in connection with a meeting of the National Irrigation Congress in Chicago. I was in Cheyenne working with Mr. Wilson on the California report. I asked permission to attend that Chicago meeting. Mr. Mead was president of the Irrigation Congress that year. Mr. Maxwell, who was directing the propaganda of the National Irrigation Association, was also chairman of the executive committee of the Irrigation Congress.

Dr. Mead had invited Mr. J. S. Dennis, who was head of irrigation in Canada where legislation largely copied after the Wyoming law had been enacted, to present a paper describing that. When the matter got to Mr. Maxwell he stopped it and was in a position to force Dr. Mead to cancel that invitation to Mr. Dennis. That caused a very bitter feeling in itself and was the beginning of that feeling, as far as I know.

Here, I'd like to have you read this letter from Dr. Mead to Mr. Dennis withdrawing the invitation. This was written in October, 1900. (They read copy

Controversy Between Mr. Howell and Dr. Head

[illegible]: Can you tell us more about the controversy between Mr. Head, Mr. Howell, and [illegible] Howell?

[illegible]: [illegible] controversy very bitter. [illegible] to [illegible] really, a personal [illegible].

It [illegible] to a [illegible] in connection with a resolution of the National Geographic Society. [illegible] Gilbert [illegible] the report. [illegible] attend [illegible] meeting. [illegible] of the Irrigation Congress [illegible]. [illegible] who was [illegible] the proceedings [illegible] Irrigation Association, [illegible] relative merits of the Irrigation [illegible].

Mr. [illegible] had invited [illegible] Head, [illegible] term of irrigation in [illegible] connected with the Wyo[illegible] present [illegible] deserving [illegible] to Mr. Howell to change it [illegible] to force [illegible] Head to cancel that invitation [illegible] Mr. Tennis. [illegible] caused a very bitter feeling in the [illegible] and was [illegible] hunting of that feeling, [illegible] know.

[illegible], I'd like to give you read [illegible] Mr. Head to Mr. [illegible] withdrawing the invitation [illegible] in October, 1906. [illegible]

Adams: of letter).

Baum: But that was Mr. Maxwell. Why did this bitterness carry over so strongly to Mr. Newell?

Adams: Mr. Maxwell was the principal promoter for federal reclamation. He was working with Mr. Newell and others for carrying out the type of legislation they wanted. They considered Dr. Mead's interest in state laws and state authority as standing in their way. Mr. Maxwell and Mr. Newell were very closely associated.

Well, that controversy between Mr. Newell and Mr. Mead smouldered on for years. It was very, very bitter.

Mr. Mead left the department of Agriculture in 1907. He had been invited to go to Victoria, Australia and take charge of the government irrigation works there, to be chairman of the state's River and Water Supply Commission. Victoria had expended a large amount of money on extensive irrigation works and very little of the water was being used. They had no settlers. The problem of settlement was the problem Dr. Mead had to meet. They had to get that water into use so the government would get its investment back and get the land under irrigation. Dr. Mead was in charge of that for the next seven or eight years. It was there that he got his ideas on

Adams: land settlement which he later brought to California.

During that period, before Dr. Mead's return to California in 1915 or 1916, Mr. Newell had gotten into pretty deep trouble on the reclamation projects. A lot of opposition had grown up from the water users on the projects. I don't recall now the details of it, but the projects weren't paying out and the government was unable to get them to and the settlers on the projects became very critical of Mr. Newell. I believe there was also opposition by some of the state governments regarding the activities of the Reclamation Service but do not recall just what it was.

Baum: Didn't the settlers feel that they had to pay too heavy payments when they were just getting started?

Adams: That undoubtedly had to do with it, yes. I remember the Engineering News Record carried a long series of articles after thorough investigations on the projects. Mr. Newell had been succeeded for about two years, as I remember, by a Mr. Davis from Utah. Then Arthur P. Davis, chief engineer of the Reclamation Service, took over. A commission was set up, which Dr. Mead headed, to inquire into the reclamation work and find out what should be done. That was set up by the Secretary of the Interior.

Baum: So Dr. Mead was going to investigate Mr. Newell's work?

land settlement which be later brought to California.

During that period, before Mr. Meade came to California in 1915 or 1916, Mr. Wendell [illegible] lady [illegible] in trouble on the reclamation [illegible] a lot of [illegible] from the [illegible] on the project. I don't [illegible] it, but the point is [illegible] more [illegible] get them to and [illegible] settlers on the project. [illegible] very [illegible] Mr. Mew. I believe there was also [illegible] covering the revenue the [illegible] Service [illegible] do not recall just [illegible].

Finally, the settlers felt [illegible] heavy [illegible] when they were [illegible] [illegible] only had to [illegible] the Bureau's laws beyond [illegible] unfolding [illegible] through investigations [illegible].

Mr. Lewell has been [illegible] for [illegible] I remember [illegible] Mr. Davis from [illegible]. [illegible] Davis, [illegible] engineer of the Department [illegible] price, [illegible] irrigation was set up, which [illegible] Meade, [illegible] into the reclamation [illegible] what [illegible] be done. Then was set up the Secretary of the Interior.

[illegible] need [illegible] to be investigated [illegible] Merritt [illegible]

Adams: By this time Mr. Newell had been forced out.

While Mr. Mead was still in Australia, a lot of that controversy between Mr. Newell and the settlers was going on. Secretary of Interior Lane wanted Dr. Mead to return to California and succeed Mr. Newell. Dr. Mead said he wasn't going to bring up that old bitterness again, so he declined. When later Dr. Mead became chairman of the commission to investigate the reclamation projects he was still professor of rural institutions at the University of California. It was at the conclusion of the commission's work that he was made Commissioner of Reclamation.

Baum: What effect did this conflict between Dr. Mead and Mr. Newell have on the work of Dr. Mead in the Department of Agriculture?

Adams: It had no effect, except as it led to the constant efforts to block our appropriations in Congress.

While Dr. Mead was still head of the Irrigation Investigations in the Department of Agriculture, the men in the field had little contact with the federal reclamation projects. In later years our relations with Mr. Newell's people in the field were very pleasant. As an example of this, Mr. Newell held a conference in Salt Lake City of his project engineers to determine methods of water delivery and management. I had

Adams: previously prepared a bulletin on water delivery and Mr. Newell invited me to be present and participate in that conference, which I did. Later, when the Reclamation Service decided to change their local associations from water users' organizations to irrigation districts, one of their attorneys undertook to get the irrigation district legislation in the various states of the West so amended as to enable the Reclamation Service to work through them. That attorney and I became very close friends and worked together very closely.

I feel that the controversy between Dr. Mead and the others is of historical interest not because of the personal bitterness that arose, but rather because it resulted from a fundamental difference as to federal reclamation policy. I, of course, have described this controversy as I saw it. I wish that some researcher would try to look into Mr. Newell's and Mr. Maxwell's points of view.

I missed a good bet I think. I tried once to get in touch with Mr. Maxwell in his later years. He was living in Phoenix. I wrote to him, but got no reply. I should have gotten on the train and gone to see him. After his death I read in the newspaper that he turned all his papers over to Tulane University.

[illegible] water delivery [illegible]. Newell invited [illegible] to be present and [illegible] in that conference, which I did. Later, when [illegible] Indian Bureau Service decided to engage in [illegible] negotiations [illegible] water [illegible] irrigation districts, one [illegible] in attorneys [illegible] to act as a [illegible] between [illegible] various states. [illegible] be most [illegible] reclamation [illegible] Reclamation Service [illegible]. Most attorney [illegible] became [illegible] Nelson [illegible] connected [illegible] years of [illegible].

[illegible], the [illegible] covered [illegible] and the [illegible] of [illegible] [illegible] of the [illegible] bitterness [illegible] [illegible] [illegible] [illegible] as to federal reclamation policy. [illegible] have [illegible] this controversy as [illegible] that some [illegible] to be [illegible] Mr. Newell and Mr. Lawson's points of view.

I missed a good bet I think. [illegible] not in to see Mr. Newell [illegible]. He was living in Phoenix. I wrote to him, [illegible] no reply. I should have written on the [illegible] to see him. After his death I read in the [illegible] that he turned all his papers over to Indiana University.

Adams: Why to Tulane, I don't know. We ought to have had those here.

Comments on the Reclamation Act

Baum: It would sound like Dr. Mead would oppose the 160-acre limitation.

Adams: I think not. This was a basic provision in the Homestead Act and was, I think, accepted by everybody as to land acquired from public domain. I'm not sure as to what his views would have been as to water for land already in private ownership and developed. However, I believe that it was while Dr. Mead was Commissioner of Reclamation that the Secretary of the Interior waived this provision of the Act for the Imperial project and a project in some other state. I doubt very much whether Mr. Mead would have advocated applying the 160-acre limitation to water for lands already developed, but of course I can not express his own views. I do know that as Commissioner of Reclamation he was constantly confronted with speculation in private lands held under federal projects and was constantly endeavoring to circumvent it. What I have in mind was speculation in unirrigated private land. That is as far as I care to go in expressing Dr. Mead's views on the 160-acre limitation.

Adams: Why do Indians, a small group, be sought to have above [illegible].

[illegible] of the [illegible]

[illegible]: It would seem like a land would [illegible] Limited'.

[illegible]: I really [illegible]. [illegible] Kaskasen [illegible] and was, I [illegible], [illegible] as so land [illegible] [illegible]. [illegible] as to what [illegible] [illegible] land [illegible] [illegible] [illegible]. However, I believe that [illegible] [illegible] of Reservation [illegible] the [illegible] [illegible] the Imperial [illegible] [illegible]. I [illegible] [illegible] analyzing [illegible] Limited [illegible] [illegible] already developed, but [illegible] [illegible] [illegible] view. I do know that [illegible] [illegible] Hamilton. [illegible] was constantly confronted with [illegible] table in [illegible] land held under [illegible] and was constantly endeavoring to [illegible]. What I have in mind was [illegible] to [illegible] private land. [illegible] as far as I [illegible] [illegible] regarding [illegible] views on the 160-acre limit [illegible].

Baum: On this point where Roosevelt said vested rights should not be disturbed, I was wondering what Dr. Mead's idea was on the right to the use of water in excess of what the crops required. Would he have recommended reduction of the person's use of water?

Adams: There isn't any doubt that he would. In fact, a great deal of our emphasis in our work in the old irrigation investigations was to encourage more economical use of water.

Baum: Yes, I know it was. Would Dr. Mead have recommended taking away certain vested rights and forcing the water user to change his methods?

Adams: Dr. Mead recognized that you couldn't disturb vested rights. He would not have advocated any procedure that would have taken away rights that were really vested by the existing laws.

Baum: Even if these rights were to the wasteful use of water?

Adams: I think so. The main point is that he recognized that vested rights must be protected. All of the state laws and the Federal Reclamation Act state that the right to use of water depends upon its beneficial use. The question frequently arises as to whether what might be called "uneconomical" use of water is benficial use. The difference between

[illegible]

Adams: what is wasteful use and what is economical use of water is not easy to define. I think that I am right in saying that the tendency in the court decisions and in administrative control is to more nearly approach what might be called more economical use. A striking example is the 1928 constitutional amendment in California providing that the right to water does not extend to waste of water or unreasonable use or unreasonable methods of diversion.

Baum: Under the Reclamation Act, the money spent by the government was to come from the sale of public lands and was to be repaid by the settlers within a certain period of time.

Adams: The first period was twenty years.

Baum: Did Dr. Mead agree with that, or did he think more money should be appropriated than would result from the sale of public lands?

Adams: That question didn't arise at that time. The increased use of money for reclamation projects and the gradual decrease of the total amount coming in from the sale of public lands brought about an amendment which made the royalties from oil lands available for that purpose. Around the late 1920's or a few years after Dr. Mead became Commissioner of Reclamation he called to the attention of the leaders in the West the fact that

What is waste in use and what is economical use of water is not easy to define. I think that I am right in saying that the tendency in the [illegible] decisions and in administrative control [illegible] to more closely approach what might be called the economical use. A [illegible] is the 19[illegible] constitutional amendment in California providing that the right to water does not extend to waste [illegible] unreasonable use or unreasonable method of [illegible].

[illegible] the Reclamation Act, [illegible] the movement [illegible] to come from [illegible] public lands and was to [illegible] by the [illegible] period [illegible].

The first period was twenty years.

Did [illegible] agree with them [illegible] money [illegible] appropriated [illegible] from the sale of public lands?

The reclamation [illegible]. The [illegible] of [illegible] the trade [illegible] of the total amount coming to from the sale of public lands brought about on [illegible] the royalties from oil leases [illegible]. Around [illegible] the 1920's [illegible] became [illegible] of Reclamation [illegible] attention of [illegible] leaders in the west [illegible].

Adams: the proceeds from public lands sales and oil royalties were fast drying up and that if reclamation was to continue in the West under federal aid, additional funds must be appropriated for that purpose.

That was the reason for organizing the present National Reclamation Association. The old National Irrigation Congress had lapsed. I think its last meeting was in California in 1915. Dr. Mead got Governor George H. Dern of Utah to call a convention in Salt Lake City. There was a large convention--I was there--and the National Reclamation Association was formed. It has been a very active organization for the promotion of reclamation since then.

Baum: For the purpose of lobbying for appropriations from the general fund.

Adams: Yes. Of course the association has taken up many other matters, but particularly I think matters of national reclamation policy.

Baum: Did Dr. Mead believe that the whole cost of reclamation projects should be repaid by the benefited lands?

Adams: The only expression of his that I recall is that the farmers should be required to pay only what they can afford. That, of course, was a very indefinite sum. The theory is that they can afford to pay the amount added to the value of the land by the use of water.

Adams: Some farmers can afford to pay more than others. Higher productive land can stand a higher charge than lower productive land. Land producing higher value crops can, in fact, really pay what it has to pay, I think; however, land producing low value crops must work on a much smaller margin.

Baum: I believe sometimes now an uneconomic unit will be partially supported by a more economic unit elsewhere.

Adams: This of course has been a live issue in discussion of the state water plan, particularly in connection with protecting areas in which water originates against diversions to Southern California. In such a large undertaking as a state water plan there are bound to be areas needing and demanding water that could not stand the entire cost of providing it. Whether it would be good business to make economic units carry part of the cost of uneconomic interest or by special appropriations of the state government is not likely to be the basis on which the issue will be decided. Rather, it will be decided on a political basis. It will be a question of who has the votes in state legislature.

Baum: Another idea is that part of the share of the cost of the project should be repaid by power users, who may or may not be the same people as are using the water.

Adams: The first federal project on which power was a matter of importance was the Salt River Project in Arizona. The income from power on that project was applied to paying off the cost of the project. The charge to irrigators was reduced materially by the income from power. Subsequently other federal projects developed power and the income was allocated to paying part of the cost of the project, thereby reducing the cost to the irrigators.

Around the '30's Dr. Mead got a new idea. He felt the income from power should not go to the project to reduce the cost to the irrigators, but should go into the reclamation fund for further projects. He so recommended in one of his annual reports to the Secretary of the Interior.

Baum: That would be very unpopular with irrigators, wouldn't it?

Adams: Undoubtedly so. To what extent that principle was applied in projects developed later when Dr. Mead was commissioner of reclamation I can't say.

Baum: Would Dr. Mead have approved the present power policy of the Bureau of Reclamations?

Adams: I don't think I have a right to say. I'm very sure that he was not an advocate of public power in the same sense as those whose main idea was public ownership.

[illegible]

Adams: I think he would have wanted the income from power on the Central Valley Project to go toward reducing the cost to irrigators and making the project economically feasible. I think he was in favor of having public agencies have preference in acquiring that power, but I think he was not adverse to the sale of some of that power to the public utilities if that was the business thing to do. Mr. Mead had a very good business head. He was in no sense a doctrinaire. Many advocates of public power are doctrinaires. Dr. Mead was certainly not adverse to public ownership of power, but that was not his chief aim. I feel sure he would be in entire harmony with President Eisenhower's ideas as to cooperative relationships between private enterprise and the government wherever that is of most advantage to the government and to the project.

I am sure you already know that many of our irrigation districts in California have a large income from power developed on their projects and that some of them could not have financed their storage without this income. Districts that develop power on their projects are Imperial, Turlock, Modesto, Oakdale, South San Joaquin, and Nevada. Modesto and Turlock districts have had an income for a good many years,

[illegible]

Adams: and have put their finances in very fine shape by the income from power. You also know, I am sure, that the Central Valley Project is highly dependent on power and that the state water plan has counted on power income to make the project feasible.

Baum: When the cost of power is high and the cost of irrigation water is lower as a result, don't the same farmers, who are the power users, pay more for the power and less for the water, but the same for water and power together?

Adams: That is true, but the cost to a certain extent is shifted to those who don't irrigate.

Baum: To industrial and municipal users?

Adams: Yes. And there is a very good argument why they should pay a certain portion of the cost because they benefit from the development brought about by the project. The indirect benefits of the project go to them. That is really a principle in our irrigation district laws. Many of our irrigation districts include the cities. The land within the cities is taxed on the principle that they benefit from the development.

Baum: Did you come into contact with Carey Act developments?

Adams: Personally, not at all. A few years ago I prepared for the Food and Agricultural Organization a little report on the nature of cooperation among water users

Adams: in the United States and included the experiences of a number of Carey Act projects in Idaho.

Dr. Mead realized that under the Carey Act there was no adequate federal or state control of the relationship between the settlers and the private company and no satisfactory control over speculation. For that reason he advocated stronger public control over the Carey Act projects and all other projects when there was a private contractor relationship between the landowners and the private company.

IRRIGATION INVESTIGATIONS FOR THE OFFICE OF EXPERIMENT STATIONS, 1902-1906

UTAH INVESTIGATION

Adams: Here is a copy of the Report of Irrigation Investigations in Utah which came out in 1903. (Bulletin 124 of the Office of Experiment Stations.)

Baum: I see this was done under the direction of Elwood Mead, assisted by R. P. Teele, A. P. Stover, A. F. Doremus, J. D. Stannard, Frank Adams, and G. L. Swendsen.

Adams: Yes. Each one of us, except Mr. Doremus, prepared a report to cover a certain stream or group of streams. Mine were the Virgin River and its tributaries, Kanab Creek, and later the Sevier River, which is farther north.

Baum: Why did Dr. Mead decide to undertake this project?

Adams: Dr. Mead was devoting much of his interest at that time to promoting better state water laws. The first comprehensive study in that direction was the one in California, reported in Bulletin 100 of the Office of Experiment Stations. At the time the Utah study was begun, sentiment was growing in Utah for a new law following the principles developed in Wyoming.

Adams: It was thought that a study of conditions in Utah would show how they had progressed under existing laws and indicate the desirable features of the new law, should the state pass one.

Baum: So the federal government was assisting the state by gathering material on which the state could base a new state law.

Adams: Yes.

The Virgin River

Adams: The Virgin River was my main assignment. It was the first job on which I was on my own. Naturally I was very enthusiastic about it and worked very hard. The purpose was a history of development, how the water rights situation had worked out, how the farmers operated their systems, what controversies they had had, the size and capacity of the ditches, the stream supply, the approximate area of land available for irrigation, and in general the information needed to understand irrigation in the Virgin River area.

The Virgin River area had been settled soon after the Mormons moved into Utah. There had been some scouting in southern Utah in the early '50's and actual settlement began there in the late '50's and early '60's. One influence that brought about this

Adams: settlement was the shutting off of the cotton supply from the South when the Civil War opened. Some experiments had been made in cotton growing down there and Brigham Young thought they might be able to furnish cotton in the absence of cotton from the South. The main settlement was at St. George and that's where I made my headquarters.

My timing in going there was made to coincide with a meeting of a state irrigation congress in Salt Lake. My job at this meeting was not only to become acquainted with the people there, but to obtain passage of one of those resolutions calling on Congress to support our appropriations, which I did. I met at that convention the Mormon bishop of St. George, the district attorney of Washington County, and a Miss Work, who was superintendent of an Indian school on Santa Clara Creek, a small tributary of the Virgin. I had previously, in Cheyenne, conferred with an engineer who had recently completed a survey of the line between Arizona and Utah and got part of my bearings from him as to the country and where to go.

The travel from Salt Lake was by train to a station about fifty or sixty miles from St. George and by horse stage from there. It was a new country for me, new experiences. I hadn't seen much of the desert

Adams: country. I had spent a little time in Nevada around Reno when helping to prepare our reports on California work, but here we found an area of light rainfall, high temperatures.

I made my headquarters at the old Snow Hotel. Snow was quite a name in that country. A man by the name of Snow had been in charge of the settlement there. One of his sons was president of the St. George Stake and another kept the Snow Hotel, which was the only hotel in the whole basin at the time.

Back of St. George was a tall butte. My first morning I went up there and looked out over the village and the country and got my geography more or less straightened out. As I went back I noticed a horse-driven bus going through the street and some elderly people getting in. I found they were the temple workers. Every morning the older people who were more or less without means were gathered up and taken to the Mormon temple and there they worked during the day.

The first thing to do in going into that area was to become acquainted with the church officials because they were the guiding authorities in almost all affairs, temporal or religious.

Baum: This was a completely Mormon settlement?

Adams: Yes. I found only one non-Mormon family in the settlement and they were there for the health of the father.

Baum: Were they in any way hostile to you or the other non-Mormons?

Adams: I never received a more cordial reception anywhere than down in that area. The first Sunday after my arrival I went to the Mormon meeting. The bishop, with whom I had traveled from Salt Lake down to St. George, told them of my presence and why I was there and told the people to help me out in every way possible. So I had a good start. A very, very pleasant experience in my personal relations with the people. That was repeated everywhere I went.

Baum: Were you alone there?

Adams: I was entirely alone. I covered the Virgin and its tributaries from Rockville, a short distance below Zion Canyon, down through Utah, a small corner of Arizona, and to St. Thomas on the Muddy in Nevada which was the last settlement before the Virgin entered the Colorado. Some of the settlements had only two or three families. A few had perhaps fifteen or twenty families. St. George had maybe four or five hundred people. I'm guessing. The largest field was out from St. George. I measured the flow of water in the ditches and before the season was over obtained

Adams: representative crop returns. People didn't live on their farms. The Mormons had the European plan of living in the settlements and farming the land outside.

During my few days in Salt Lake I had met the president of the Mormon Church, who was then Joseph F. Smith. I believe he was a nephew of the original Joseph Smith who had organized the church. He told me the people along the Virgin were very poor, the water supply was very meager, and that the church was very much interested in doing anything it could to help them.

Baum: What did the people do with their crops?

Adams: They were mostly used locally. Alfalfa and grain were their main crops. The surrounding country was cattle country. I think most of the farmers had cattle. They sold very little, as far as I know. It was a self-contained area. They grew some fruit and would carry some of it and their other produce to the northern settlements and get a little money. I do not remember where they marketed their cattle. They didn't raise enough produce to sell much. The irrigated areas were so small and total production so meager compared to the area that most of the young men of the

Adams: settlement had to go elsewhere. They couldn't support an increase in population. Consequently there were many more young women than young men. In that entire basin there were only about 14,000 acres irrigated in scattered settlements all up and down the river.

There were very few records of stream flow so I made numerous measurements of diversion and of principal tributaries during the season. In some cases I put in gauges and had the ditch tender take daily readings. From the various measurements and some records obtained from the county engineer I could approximate the flow throughout the season.

Baum: Wasn't a lot of this work what would usually have been done by an engineer?

Adams: The engineering phases of the investigation were not difficult and were similar to those with which I had had experience in the Cache Creek investigations.

One very interesting thing to me was a canal that had been under construction for about ten years and they hoped to complete it the following year. The purpose was to lead water from the Virgin River out onto what was known as Hurricane Bench, a very fine body of land. The reason for undertaking that was to get more land to keep more sons in the area.

Adams: settlement [illegible]. They could [illegible]
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fine body of [illegible]. The reason [illegible]
[illegible] area.

Adams: Hurricane Bench was then a sagebrush desert. When Mrs. Adams and I passed through there in 1947 we found the thriving settlement of Hurricane. That canal had been built by the farmers taking out stock, which they paid for in labor. Every year when they had time they would work on the construction of the canal and they finally made it. They did receive toward the end about $5000 from the church to help complete it, but otherwise the entire expense was paid for in labor of the local people. They weren't afraid to work.

The custom down there was for travelers to stay at the home of the bishop or with some family who undertook to take care of travelers. In the little town of Rockville was the dearest, motherly old lady, Mrs. Hall, who had come out with the original migration across the plains. Her husband was ill and she herself brought him out in a pushcart. Terrible hardships. They had no sooner reached Salt Lake than they were sent on this mission down into the south. She told me this story. They had no resources. They had to work for others to get something to live on. It wasn't until the crops of the others had been planted that they were able to plant some themselves on the little land allotted to them. The only thing they

[illegible]

Adams: could raise at the end of the season was broomcorn. When the time came for them to take what little produce they had raised up into the southern settlements to sell to get a little money for their own necessities, all the settlements had been supplied. She said they carried the produce all back and practically lived on broomcorn the rest of that year. That shows what devotion to some idea will do for you.

One thing that helped me a great deal down there was that I frequently joined in with the people in their social gatherings. I also went to the Sunday meetings occasionally. When I was out in the field I visited with the people and got well acquainted with a lot of them. Those close contacts are really what help you in your work in a job such as I had.

My travel was of course entirely by team. I carried my personal effects and camping equipment and my equipment for measuring water. If when nightfall came I was not near a settlement where I could obtain accomodations, I'd unhitch the team, water and feed them, tie them up, prepare my meal, spread out my blankets, spend the night, get up in the morning and start out again. A very interesting experience. I haven't had one since that equaled it.

My territory included Kanab Creek, which isn't

adjust [illegible] could raise on the end of the season was [illegible].

When the time came for them to take that little produce they [illegible] raisers to take the [illegible] - works to sell to get a little money for their [illegible] necessities. If the [illegible] had been [illegible], the said they [illegible] lived on [illegible] the [illegible] that devoted [illegible] all [illegible].

Dr. [illegible] was [illegible] and [illegible] the [illegible] their [illegible] lived [illegible] their social gatherings. I also went [illegible] medicine personally. When [illegible] I visited with the people and [illegible] acquainted with a lot of [illegible]. Those [illegible] complaints are [illegible] with [illegible] work in [illegible].

[illegible] travel [illegible] some [illegible]. I completed my [illegible] and efforts and [illegible] equipment for measuring water. [illegible] fall came I was [illegible] more [illegible] obtain accomodations, did not [illegible] [illegible] food [illegible], [illegible] them up. [illegible] my blanket, [illegible] the night, [illegible] and start out again. A very [illegible] I heard had one since that [illegible].

My territory included Lamb [illegible], [illegible]

Adams: a tributary of the Virgin River. The main settlement was Kanab. My first contact was with the president of the stake, Mr. Wooley. I got my bearings through him. He knew everybody, knew the conditions of everybody.

Baum: So that in every case it was the religious leader who was the main authority.

Adams: Yes.

In the early days in Utah water was alloted by the church to various settlements. Later they operated under an old territorial law which set up county courts which had authority to allocate water in case of controversy. Normally it was a mutual agreement between the settlers as to water. If the settlers themselves couldn't agree the church would arrange a settlement. Sometimes the county court would make the allocation, but there was not very much trouble.

There was occasionally some difficulty between the users along the Virgin from Rockville to St. George and the users in Long Valley along the upper Virgin. They told me of several occasions when the people around St. George and Rockville and La Verkin felt the upper users were taking too much of the supply and they got together and started up to have a scrap with them. Before they got there they'd have

Adams: a torrential rain, the river would rise, and they would hurry back to their own ditches. So there were still some controversies.

Baum: When did you finish your investigation?

Adams: I got down there in February and was there until early fall.

The Sevier River

Adams: I had heard that there had been complete settlement of water rights on the Sevier River, some distance north of Kanab. I was very curious to find out if that was a correct description of conditions. So I asked authority from Washington to make a study of the Sevier situation on my way back to headquarters in Cheyenne. That permission was granted and after finishing at Kanab I drove up through Springville, Panguitch, Marysvale, and arrived at Richfield, which was the main settlement in the Sevier Valley at the time.

I find from my report that I reviewed some forty cases of litigation on that stream. I found there were a good many repetitions and inconsistencies. The river ran through the jurisdiction of three separate county courts. There would be an adjudication down here, for instance (look at map), by one judge. The rights to the water of the stream would be

[illegible]

Adams: adjudicated by another judge up here. Although the situation was in excellent shape, and there were no pending conflicts of great moment, some of the adjudications that had been made earlier were again being reviewed by another court. It was clear that under the operations of the old Utah law they didn't have any final and clear determination of water rights on the Sevier River. I find that in my report I was bold enough to suggest the type of law that was necessary to meet that siuation. I had to have confidence in myself on a job of that kind, and looking over those recommendations, they all seem to be sound now.

Baum: What did the people along the Virgin River think of the work you were doing?

Adams: They were all much interested. After this report was printed the following year I was surprised to learn from the state engineer of Utah that the district attorney of Washington County had recommended to him that my report be made the basis of the settlement of rights in the Virgin River basin. Obviously, I didn't have all the physical facts and other data necessary for an adjudication; that was not the intention, but I had an outline of them, the substance of the situation down there. The district attorney didn't realize the

Adams: nature of material necessary for an adjudication.

Baum: Did you go back to Washington when you were finished?

Adams: No. I returned in the late fall to Cheyenne and there I prepared these two reports.

Baum: The winters you spent writing up what you found out during the summers?

Adams: Yes. I must have finished it before the winter was over because in the early spring I was assigned to another job.

INVESTIGATION OF INTERSTATE WATER RIGHTS ON THE PLATTE RIVER - 1903

Baum: What was your next job?

Adams: The Utah work was carried on in 1902. The next job was connected with the study of interstate water rights on the Platte River and tributaries. There were great uncertainties as to the principles that should govern interstate water rights. Many of the important streams crossed state lines, sometimes several times. The Platte River, for instance, had two main forks, the South Platte, which headed in Colorado and flowed easterly and northerly through Denver and joined the North Platte in Nebraska. The North Platte headed mainly in Wyoming although a few tributaries reached over into Colorado. It flowed through Nebraska, joined the South Platte, and then

Adams: flowed into Missouri. It was one of the important problems of the day and Dr. Mead wanted to make a contribution to the public understanding of the subject. So he planned this study of interstate water rights on the Platte. (Reported in U.S. Department of Agriculture, Office of Experiment Stations, Bulletin No. 157. Water Rights on Interstate Streams, The Platte River and Tributaries. 1905.)

There had been controversies between users of water in one state or another. A very serious controversy had arisen between Kansas and Colorado over the Arkansas River. Kansas had brought suit to prevent the further use of water by Colorado from the Arkansas. While there had been some court decisions affecting water rights between states, and also I think there had been some between Canada and the United States, no principles had yet been developed which should govern the division of water between the states. Now here was this very important suit between Kansas and Colorado. That suit had been filed, I believe, in 1901.

So Dr. Mead picked out the Platte for a special study. He could have picked out the Snake River, which crossed several state boundaries, the Bear River, the Colorado River. There were many potential

[illegible]

Adams: conflicts between the states.

Baum: What were your duties in this investigation?

Adams: I was given the task of finding out during the season of 1903 what became of the water of the Platte River and its principal tributaries. It was a one-man job in the field, except as I could obtain the assistance of the watermasters on these various streams.

I might illustrate the situation by reference to the watermaster on the Cache la Poudre, the main tributary of the South Platte, which flowed by Fort Collins and Greeley. (Greeley, by the way, had been established through the influence of Horace Greeley. I have a history of the Greeley colony.)

The watermaster there was a fine gentleman by the name of Armstrong whose business it was to see that each ditch got what it was entitled to each day. He followed a routine procedure. He would get up about four o'clock in the morning and get a record of the flow of water in the river at the main measuring point. He had a man stationed there. With that information he would determine what each ditch along the river was entitled to take that day. He would then telephone to each ditch tender and tell him how much water to take. Then he would have his breakfast and get out his horse and buggy and patrol

Adams: the headgates of various ditches to see how things were going, to see that the orders that had been issued were being carried out, and if there were any difficulties. He would straighten out anything necessary. There were gauging facilities at the head of each of these ditches which enabled the ditch tenders to determine the amount of water they were turning into the ditches. In a few cases I had to install facilities for that work.

When I visited the Poudre about once a month I would make the rounds with Mr. Armstrong. I arranged with him to have each of his ditch tenders supply me with a record of the daily diversions into the ditches. During the season I accumulated material as to the areas that were irrigated.

Baum: What streams did you cover?

Adams: I did that on the Poudre, the Big Thompson, the St. Vrain, Clear Creek, and Bear Creek, all tributaries of South Platte River. And on South Platte from the mouth of the South Platte Canyon to Littleton, which was south and west of Denver, then to the junction of the South Platte with the North Platte. I followed the same procedure in Wyoming and Nebraska, except the facilities for gathering information through the watermasters were not as complete.

Adams: I covered only two tributaries of the North Platte in Wyoming, Horseshoe Creek and Deer Creek. Then the diversions from the North Platte from the Wyoming-Nebraska line down to Bridgeport and the diversions from the Platte between North Platte and Fremont. Only a few ditches obtained water from the main river, and I got what information I could. That was my job for the season.

Baum: Were all the watermasters as cooperative as Mr. Armstrong?

Adams: Very cooperative, yes. There was no difficulty.

That was a very interesting year. The type of agriculture was quite different from any I'd had any experience with in California. It was mainly alfalfa and wheat and sugar beets. I never shall forget the beautiful wheat fields around Fort Collins and Greeley and all that northern Colorado country. Under the climatic conditions there the wheat fields when the wheat was ripening looked really golden. In California the wheat fields look rather drab when they are ripe. The production over there was phenomenal. As I recall, some of those wheat fields used to produce sixty or more bushels per acre.

Of course I was not the only one working on this investigation. Professor O. V. P. Stout, head of

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investigated [illegible] [illegible]

Adams: civil engineering at the University of Nebraska, and C. E. Tait made the necessary measurements of streams and gathered further data regarding the water system. Walter B. Denton prepared a report on water rights. I believe that Mr. Tait and one other member of the Irrigation Investigation staff made some measurements of seepage losses in the main river. We each prepared our separate reports and these were sent to Washington where they were the basis of the published report which was prepared by R. P. Teele. I might add that during the season the field investigations were under the general direction of Clarence T. Johnston, who was in charge of the Cheyenne office. I should also add that Professor Stout worked with me in studying the use of water in the North Platte, between the Wyoming and Nebraska lines and Bridgeport. We made many trips there together.

I'm not quite sure what we accomplished by that study of interstate water rights on the Platte and its tributaries. I gave my copy of the printed report to Davis or UCLA. It was intended to be a presentation of the situation and the need for a settlement of difficulties. Whether any principles or solutions were suggested I don't remember. I think it was

[illegible] [illegible]: [illegible] informative.

Salaries and expenses

[illegible]: Could you give [illegible] some details on how much you were paid. [illegible] and expenses [illegible] you [illegible]?

[illegible]: Salaries [illegible] low in those days, [illegible]. [illegible] there in California at 100 a [illegible]. [illegible] I was getting $100 a year. [illegible] time I was getting [illegible] a year, my pilot, [illegible]. [illegible] responsibility [illegible] in his [illegible] and widely known, got a salary, as I remember, [illegible] a year. [illegible] the old days earned much more in private [illegible].

As to expenses, whatever [illegible] needed. [illegible] might be sent out on a [illegible] where [illegible] to cover the cost. [illegible] were paid [illegible] [illegible]. That was never a problem.

[illegible]: Did you also get [illegible] allowance.

[illegible]: That was really in the Utah [illegible], although there was a good [illegible] of that later in California. I was reimbursed for the expense of my car in commercial and [illegible].

[illegible]: They did pay for [illegible], hotel, and travel.

[illegible]: Oh yes.

[illegible]: When did you [illegible] this work on the [illegible] [illegible]

Adams: I commenced my work in the early spring and completed the field work in the late fall. From time to time I returned to Cheyenne to review my notes. I had clerical help in the office to keep my materials up to date. I completed my report in the following February and then was assigned to work with Dr. Fortier in California.

INVESTIGATION OF MODESTO AND TURLOCK IRRIGATION DISTRICTS, 1904

Adams: Dr. Fortier, who had taken over the work of the Irrigation Investigation under Dr. Mead in California, had asked Dr. Mead for my help in making an investigation in Modesto and Turlock irrigation districts. These districts had just overcome their legal and financial difficulties. Turlock had started to deliver water in a small way in 1901 and Modesto was ready to begin in 1904. The congressman from that congressional district, Mr. J. C. Needham, had gone to the Secretary of Agriculture and requested assistance from the Department of Agriculture. The request had gone to Dr. Mead in Washington and then to Dr. Fortier in California and Dr. Fortier had picked me to do the job.

[illegible]

Dr. Samuel Fortier

Early History of Modesto and Turlock Districts

Adams: Irrigation was, of course, well advanced in the Fresno, Visalia, and Bakersfield areas in San Joaquin Valley. The Miller and Lux canals on the west side of the San Joaquin Valley were operating. A number of canals were irrigating land along the San Joaquin River on the east side of the river. There were small private projects in the Madera area, the Madera Canal and Irrigation Company, and in the Merced area, the Crocker-Huffman Company. The Crocker-Huffman Company had colonized some of that land. Other than that, the land on the east side of the San Joaquin Valley from Fresno to the Stockton area was mainly in dry grain farming. There was some irrigation on the riparian lands along the stream beds. An effort had been made to develop a project from the Stanislaus near Oakdale under what became known as the Tulloch system, but little had been accomplished. The typical minimum holding was probably a quarter section, 160 acres. The maximum, up to 2000 acres or more. In the days of profitable grain farming they got along all right, but the soil ceased to produce as it used to, low prices came on, in the '90's was the depression, and many landowners, especially the owners

Adams: of small holdings, were in a bad way.

In 1887 Modesto and Turlock districts had been formed under the Wright law. (C. C. Wright, who drafted the Wright law, was a resident of Modesto.) They both employed engineers and after a year or two systems were worked out and accepted and bond issues voted and sold. Construction was carried to the point that La Grange Dam, a joint diversion dam on the Tuolumne River, was finished, and substantial portions of their two canals were constructed.

Large landowners were early objectors and the districts were in constant difficulty through litigation. The details of this litigation are given in my report of the investigation. (The investigation was reported in Office of Experiment Stations, Bulletin No. 158, Report of Irrigation and Drainage Investigations, 1904.)

These two districts comprised an area of about a quarter of a million acres. The Modesto people were entirely new to irrigation and what they wanted was some help in getting started in their plans of operation, delivery of water, management of their systems, and any help they could get in the use of water.

of small holdings, were in a bad way.

In 1917 Modesto and Turlock districts had been formed under the Wright Law. (C. C. Wright, who created the Wright Law, was a resident of Modesto.) They both employed engineers and after a year or two systems were worked out and accepted and bond issues voted and sold. Construction was carried to the point that in Turlock Dam, a joint irrigation dam on the Tuolumne River, was finished, and a small portion of their two canals were completed.

Large landowners were easily objectors and the districts were in no least difficulty through litigation. The details of this litigation are given in my report of the investigation. (The investigation was reported in Office of Irrigation Stations, Bulletin No. 159, Report of Irrigation and Drainage Investigations, 1920.)

These two districts so formed in area of about a quarter of a million acres. The Modesto people were actively for irrigation and what they wanted was some help in getting started in their plans of operation, delivery of water, management of their systems, and any help they could get in the use of water.

Keeping Records

Baum: What kind of aid were you able to give them?

Adams: One of my first jobs was to set up gauging stations on the main canals and on some of the main laterals with the idea of letting the districts know just how much water they were diverting from the river and how much water they were delivering to the irrigators. Daily readings of the diversions in each canal were made by the dith tender at the dam. To stimulate interest of the landowners in the operation of the district system, I arranged with the principal local newspaper in Modesto to obtain this record of diversions from the Tuolumne River every afternoon and publish it.

A plan was outlined for keeping records, both by the ditch tenders and by the superintendent of the district. As to the question of the Modesto district, I set up the necessary record books and forms and had them printed at their expense.

Baum: In other words, did you set up a bookkeeping system of use of water?

Adams: You might call it that.

Another matter we went into was the rise of ground water. Experience had shown that as you brought water onto the land in quantity, ultimately the ground

[illegible] Records

[illegible]: What kind of aid were you able to give them?

Adams: One of my first jobs was to get to remote stations on the main canals and on some of the main laterals with the idea of letting the farmers know just how much water they were receiving from the canal and how much water they were delivering to the irrigators. Really reading a lot of the minutes in the meetings made by the irrigation tenders on the dam. To stimulate interest in the farmers in the operation of the district system. I approached it with the principal idea I was engaged in to do what I could in regard to diversions from the Sacramento River very cautiously and politely.

A lot was accomplished from a geology standpoint, both by the district tender and by the superintendent of the district. As to the support in the Sacramento district, I got in the necessary proof by maps and forms and had them printed at their expense.

Gaus: In other words, did you set up a bookkeeping system of water deliveries?

Adams: You might call it that.

Another as the work into was the use of ground water. Experience had shown that as you transmit water onto the land in quantity, gradually the ground

Adams: water would rise. We thought it desirable that they should begin to think of those things at once.

Three lines of wells were set up for keeping ground water levels. We made monthly records throughout the season of the ground water level. No wells were put in for that purpose; I simply used the farm wells in the area. In the upper portion of the district the water was about seventy-five feet from the surface, whereas in some of the areas down toward the San Joaquin River the water was something like ten or twelve feet.

Another matter we thought should be watched was the seepage from the canals.

Applying Water to the Land

Adams: I spent a good deal of time with the ditch tenders on the various canals as they delivered water to the irrigators. I remember one landowner, a brother of Congressman Needham, was scared to death as to how he should use water when the day of delivery came. So at his request I went down and spent several days with him, took my rubber boots, went out in the field, with him, and helped him distribute water over the land, giving him some ideas as to procedure. I was not brought up on an irrigated farm, but my three years'intimate contact with irrigators on Cache Creek in California, on the Virgin River in Utah and on the

Adams: Platte River in Colorado, Wyoming, and Nebraska had made me familiar with the practice and I was able to be of some help of that kind.

Then there was the matter of preparation of land for irrigation. Land was being prepared mainly in contour checks and it was obvious they were moving too much dirt. Arthur Stover of our Berkeley office came down and made some surveys to see just what they were doing and these were included in the report.

The methods of applying water to the land in California were quite different from those followed in the Rocky Mountain states. Out here the normal method was by the basin or check method. In the Rocky Mountain states contour ditches were run in the field and the water carried in those small ditches and spread over the land with the help of the irrigators out there with their shovels. Some of the land in Modesto and Turlock districts had a slope in which it seemed the check method was not the most economical method, so we leased about 25 or 30 acres in the Modesto District and set up a little demonstration project where we irrigated very flat land and sloping land. We irrigated land by strip checks, by rectangular checks, by contour checks, and by the mountain method. We ran that for a couple of years. Incidentally, I

Adams: might mention that I sent a young graduate civil engineer down there to look after this experiment. His name was August Griffin who later became chief engineer of the South San Joaquin irrigation district and then went with the Canadian Pacific Railroad to Canada and became their chief engineer in charge of all irrigation matters.

Baum: Were the irrigators eager to learn new methods and did they come to your demonstration farm?

Adams: Our studies of the check method and their high levees, I think, did have an effect. Instead of having high levees over which farm machinery couldn't travel and having a difference of maybe a foot or more between one contour check and the next, smaller checks were built with broader levees so the crop could be grown on the levees and the farm machinery could pass over the levees.

District Operation

Baum: In those years were the irrigators enthusiastic about the district?

Adams: Oh yes. Shortly after I arrived in Modesto, early in March of 1904, they had their formal opening, a great jubilee. People came from all parts of the state for that opening. Quite a boom started in the development

Adams: of the district. I don't remember how large Modesto was at that time, I don't think over 2000 people. It was the county seat. Turlock was a village of probably not more than 100 people.

Land could be bought in the two districts as low as $30 or $40 an acre. The highest priced land was held at $75 an acre, which was then considered a prohibitive price. That was for raw land. In the next few years, and very evident during the years I was there, there was a lot of activity in the purchase of land.

Baum: How did the irrigation district organization work in Modesto in those years? Was it an effective institution, or do you think some other form of organization might have been better?

Adams: I was convinced before that study was over in 1904 that the principal irrigation development in the state would be under that form of organization. Samuel C. Wiel, author of a standard work on water rights, brought over to Berkeley the proof of his first edition of his book. I remember in conversation with him that he was surprised that we were interested in irrigation districts. He had in mind the experiances under the old Wright Act and he thought they would

Adams: never be attempted again. I told him then I thought our future in irrigation development lay in that direction.

That work in 1904 brought up some questions of management which were of interest. In Modesto District everything was running smoothly. No controversies within the board of directors and no controversies among the people. In Turlock, however, just the opposite was true. The superintendent or engineer that first year was soon superseded by another. Some of the farmers in certain areas were still very much dissatisfied, I don't remember now just why. While I was just completing the manuscript of my report, the leader of that opposition, who was down in the Hilmar Colony, came up to see me. I don't know why. He proceeded to tell me their troubles. I had known of those troubles and I referred to them in my reports and had pointed them out as difficulties that needed to be overcome. I handed a copy of my manuscript to this man. He read it, looked very sober, and went away. I think I had effectively answered him in that report.

Baum: Did they get their troubles ironed out?

Adams: Oh yes, within a few years the situation in those two districts was reversed. All was calm in Turlock

Adams: District, all was confusion in Modesto District. But those districts have been models of success.

Baum: Why did this turmoil come about?

Adams: I don't recall the details. It had nothing to do with the form of organization. It probably had more to do with the assessments and distribution of water. There are bound to be difficulties where people are dealing with water, especially during the early years of a project. It took Modesto District a little longer to eliminate its difficulties and get into smooth operation than Turlock District. They changed engineers from time to time, I do not recall why or what bearing that had on the operations of the system.

I think the smooth operation in Turlock District really began about 1913 or '14 when R. V. Meikle was made engineer of the district. He was working for me and had just completed his assignment when the engineer of Turlock District came to me to get help in presentation of their problems to the Secretary of the Interior. San Francisco was seeking a water supply from the Tuolumne River and the two districts were opposing it. The city attorney of San Francisco asked me to work on their case but I was unwilling to work on either side. I told them they could have Mr. Miekle and Mr. Miekle went there then to work on

[illegible]

Adams: that problem and shortly thereafter was made district engineer. Turlock hasn't changed their engineer since then. That's unheard of in irrigation district operation. Only Imperial District has approached this in its continuity of engineering direction.

Baum: From what you say, I gather you consider the engineer a very important factor in the operation of the district.

Adams: Oh yes. Mr. Meikle kept scrupulously out of district politics. He had nothing to say in that field. He is very able, very wise. That's the key to his success.

OTHER WORK - 1904 - 1905 - 1906

Adams: I spent two years in California with Dr. Fortier, the first year mainly on the study of Modesto and Turlock districts, but there were other activities. We had going on at that time a number of what we called "tank experiments." Crops were grown in tanks and different quantities of water applied. The tanks were weighed at intervals to determine the loss of water, the use of water by the plants, and also bare tanks were used to determine the evaporation from the surface of the soil. We had tanks of that type out from Tulare. We had some tanks back of what is now Agricultural Hall. We had tanks on the plant introduction garden of the Department of Agriculture up

An Article and Photographs

By Frank Adams

Appearing in Sunset, June - July 1906

UP WHITNEY BY LONE PINE TRAIL

By Frank Adams

Photographs by the Author

FEW people realize that the summit of Mount Whitney, the highest mountain in the United States, is but a dozen miles removed from a comfortable wagon road, yet such is the fact. Neither do many realize that at certain seasons of the year the whole of the dozen miles between the summit and the wagon road can be covered on animals.

A year ago the enterprising citizens of Lone Pine, Independence, Keeler, and other nearby towns completed a new trail to the top of Mount Whitney.

Part of this trail had been built years ago by Uncle Sam's soldiers, encamped along Lone Pine creek, while making temporary use of Mount Whitney Military Reservation. A part, also, had been built by citizens who wished access to the rugged eastern slopes of the surrounding mountains. That the upper and more difficult portions were built to make this famous old mountain more easily accessible shows that the enterprising citizens who undertook the feat knew the value of short cuts in mountain climbing.

IN CLEAR VIEW OF MANY OF THE WONDERS OF THE UPPER KERN

Mount Whitney has been climbed many times and by many people, yet those who have approached from the west, and this includes the great majority, have missed a charm that only the east-side trail can give. The scenic wealth of the west is in the deserts and the mountains, and rare the region that combines them more completely to one's satisfaction. "Tender vistas ever new" could be no more truly written than of what this winding, rocky trail affords as it leaves the desert at the edge of Lone Pine creek and makes its way through the timbered gulches and over the jagged cliffs toward the summit. Yet, different as is each backward vista, all carry that enchanting inspiration so peculiar to the desert. Ever unfolding at the foot of the canyon lies Owens valley, bordered beyond by the Inyo range, its surface as rich in mineral coloring as are its mines in mineral wealth. Ever changing their form at the head of the canyon are Whitney and his companions, their faces high in the sun above the timber line, and promising pleasures innumerable to those who will overcome the obstacles at their feet.

—the dainty polemonium, each head a bunch of sweet violets

Lone Pine, the outfitting point for a trip up the east side, lies in the evening shadow of Mount Whitney, a few miles west of Mount Whitney station on the Carson and Colorado railroad. To the summit is scarcely twenty miles. The vertical distance covered in this short stretch, however, is nearly eleven thousand feet! But these figures should not frighten anyone seriously contemplating the ascent — they certainly would not frighten one at all accustomed to

THE SCENIC WEALTH OF THE WEST IS IN THE MOUNTAINS AND DESERTS

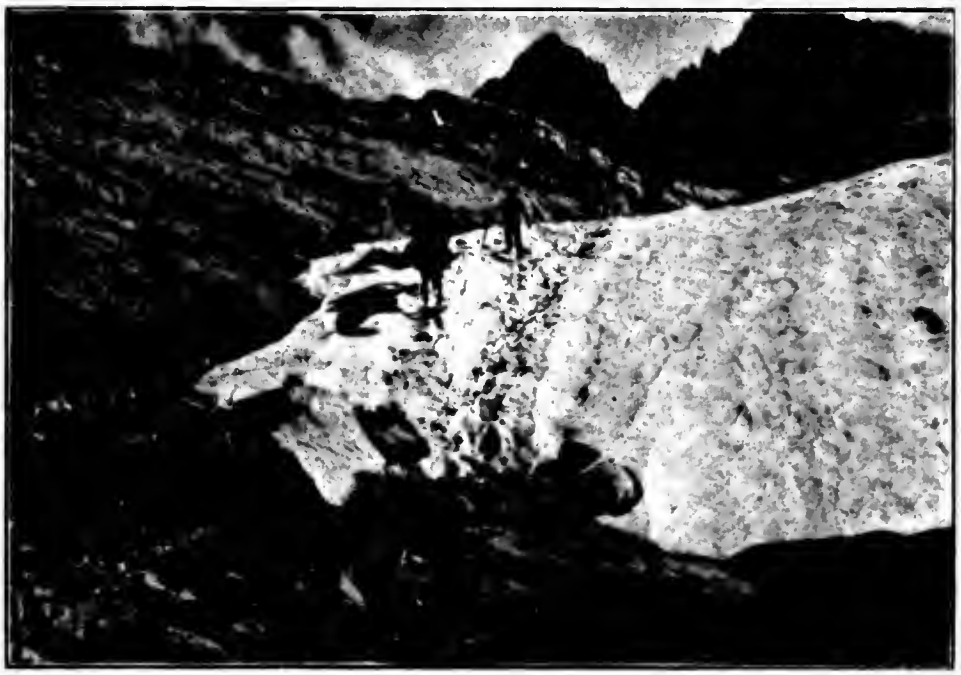
mountaineering. The comfortable stops between Lone Pine and the summit are frequent. Four miles out, at an elevation of 4500 feet, is Soldiers' Camp, on Lone Pine creek, but still on the desert. Seven miles further, at an elevation of 8300, is Hunters' Camp, well up in the canyon among the timber, and well within the sound of Hunters' Falls, where the waters of Lone Pine creek come tumbling from the rocks above. At 10,00 feet, nestled snugly under a vertical granite cliff near two thousand feet high, and partially surrounded by a small park of firs and pines, is Lone Pine lake, well stocked with wary trout from the lower creeks. A mile above is the camp of all the camps on the trail—the upper meadow, with its stream, its clumps of trees, and its abundant feed for

LONE PINE FALLS, ON THE WHITNEY TRAIL

animals. At 12,000 feet is Mexican camp, the coldest camp on the journey, yet a convenient starting point for the trudge up the mountain. Directly above this camp is the hardest climb on the trail, perhaps excepting the last supreme effort that accomplished lands one on the summit. At its end is Lone Pine pass, elevation 13,337 feet, from which one first catches a glimpse of the west-side panorama stretching from the Bakersfield hills far north beyond Mount Brewer and Mount Williamson. Between Lone Pine pass and the summit, in clear view of many of the wonders of the upper Kern and the upper Kaweah—Mount Kaweah and the pinnacle, for instance—is Lake View camp, still two or three hours from the top. This can be called a camp by virtue of the fact that it was

THE EASTERN FACE OF MOUNT WHITNEY FROM THE LONE PINE TRAIL. FROM THE SUMMIT, THE CLIFF MAKES A SHEER FALL OF 1800 FEET. ON AUGUST 10, 1905, A PARTY OF UNITED STATES SURVEYORS COMPLETED A LEVEL LINE TO THE SUMMIT, FINDING IT TO HAVE AN ELEVATION OF 14,502 FEET, WHICH PROVED IT TO BE THE HIGHEST MOUNTAIN IN THE UNITED STATES

SHEEP MOUNTAIN, OR "OLD MT. WHITNEY," FROM THE SUMMIT OF WHITNEY. THE SHARP POINTED MOUNTAIN ON THE RIGHT IS MT. McADIE



the whole of the dozen miles can be covered by mules

used as one by the hardy trail builder when finishing his task. Neither wood nor water are there unless they happen to have been left by a former traveler, although snow can usually be found in close proximity.

After crossing Lone Pine pass the trail is wholly on the west side of the summit of the range of which Whitney is a part. Beyond Lake View camp, from which there are perhaps no more lakes in view than from numerous other points on the trail, the journey is again lightened by the ever-changing outlook. As you cross a ledge at 13,775 feet elevation Whitney comes into view after having been hidden for an hour behind the rocks and peaks through which the trail winds. You say an hour will land you there, yet experienced and hardy you are indeed if you say the truth. The last pull is a pull in earnest, one not to be forgotten either for its efforts or its thrill.

While the mountains and the desert are ever calling as one toils up the trail to Whitney, you can not escape the lesser things on the way. Of wild animals there are very few, yet if you camp at the upper meadow and stay there long enough to get acquainted, you will find a host of little friends. Chipmunks will waken you with the first sun of the morning and only leave when the last kernel of grain or the last crumb of bread is gone. Birds, you will be tempted to call sparrows, will flit about cautiously until they learn that you will not harm them. Below 6,000 or 7,000 feet of elevation Lone Pine creek will supply as many ample meals of trout as you take time to go for. A few flocks of grouse will cross your path, but not if you carry a gun! But if animals are few, not so with trees and flowers. At the base of the mountains are the "pinon" pines, small and scattering. A little higher up, beginning near 7,000 feet, are the beautiful Jeffrey pines, with red and white firs mixed plentifully in between. Above 9,000 feet the Jeffrey

pines retreat, leaving only the fox-tail and timber-line pines to brave the rigors of the upper altitudes. But near 11,000 feet the climatic strain becomes too severe for even the most hardy of the timber, and a few feet below that elevation the last tree on the trail—a dwarfed fox-tail pine—lies prostrate on the rocks as if overcome with grief at not being able to accomplish for its race another full thousand feet of achievement. After the timber is left behind one begins fully to appreciate the beauty of the little annual and perennial flowers. You are ever finding a new one as you follow the trail in its windings across creeks and past lakes, guided only bp the frequent little stone-on-stone monuments that originally told the trail builders where to go, as they now tell you where to go. You find flowers not only in profusion of number, but also in profusion of color. Yet withal they must be looked for to be found, for they have chosen to grow where, in the nature of things, they must grow—deep in the crevices between the rocks. If you follow the trail the last of July or the first of August you will find, from 13,000 to 14,000 feet, perhaps the most perfect of them all—the dainty *polemonium,* each head a bunch of sweet violets, each flower as fragrant as an heliotrope. Nestled close to it you may also find a brilliant member of the dandelion family—*Hulse algida*—full of the pure, golden sun of the high altitudes.

But the story of the Lone Pine trail to Mount Whitney must be learned at first hand from each of the characters in it. A three-days' round trip from Lone Pine will indicate its secret. A week's trip should tell it.

Adams: at Chico.

Baum: Was all this work under the Office of Experiment Stations?

Adams: Yes.

Baum: You were not connected with the University at that time.

Adams: No, although the work was in a way in cooperation with the University.

Evaporation from water surface was one of the matters we were looking into. Dr. Fortier had me set up a series of tanks on the east slope of Mt. Whitney, ascending from a little above Lone Pine to the summit, to measure the effect of elevation on the evaporation from the surface of the water. The amount of loss from the surface of reservoirs was important. There had been previous work by investigators going back to the William Ham Hall days, but our purpose was to add to that information. It was then that I had my first opportunity to get into the high Sierra.

Baum: It sounds like, although you were not trained as an engineer, you were doing more and more engineering-type work.

Adams: I had very good tutoring on certain engineering phases of the work when I worked on Cache Creek with Mr. Wilson, a trained engineer who had been state

Adams: engineer af Nebraska. I had also obtained a lot of fine advice and instruction from Professor O.V. P. Stout, head of the department of civil engineering at the University of Nebraska, when I was working on the Platte River back in 1903.

Professor (Major) O. V. P. Stout

Adams: Although a little out of order, I might add here that Professor Stout continued at the University of Nebraska and became dean of engineering, went into the first World War, became a major, returned to his work as dean of engineering, left that to head up the engineering work of a private irrigation development company out in Colorado and Idaha. The company went broke just about the time of the depression of the thirties. Dr. Fortier was just planning to set up some studies of seepage from canals in California. I suggested that he bring Major Stout out, which he did. Major Stout and Carl Rohwer, who came out from Colorado, carried on that work for a number of years. Then Major Stout became a part of the cooperative work in California and took charge of investigations in the Delta. A little later Dr. Mead persuaded him to make some studies of the Tri-Counties Project in Nebraska. While he was on that project he had an emergency

[illegible]

Adams: operation from which he didn't recover. I always owed a lot to Professor Stout, both in inspiration and in the knowledge I was able to pick up from him.

Major O. V. P. Stout

FAMILY

IN THE LIGHTING FIXTURE BUSINESS, 1906-1910

Adams: At the end of those two years with Dr. Fortier I considered a venture into farming up in Oregon with my colleague in the Irrigation Investigations, Arthur P. Stover, but didn't.

My brother and another man, who was a mechanic, both of them connected with a lighting fixture concern in San Francisco, decided after the fire to go into business independently. They persuaded me to join with them. Another stockholder was Mr. John P. Young, who was managing editor of the Chronicle. Our firm was Adams & Hollopeter, Lighting Fixtures. I remained with the business four years. We had a fine factory and manufactured our own lighting fixtures.

It was very enjoyable and gave me an opportunity to learn to sell. I found I could. It also brought me into contact with a lot of fine people. In addition to selling, one of my jobs was to look after the finances of the firm, see to it that there was money on hand to pay the help and the bills. That made it necessary to see that funds came in from our contracts on completion, and if the money hadn't come

[illegible]

[illegible] It has not at [illegible] considered a venture into [illegible] an [illegible] offensive [illegible] [illegible] Thus, but [illegible].

My brother [illegible] both of them [illegible] in [illegible] [illegible] with them. [illegible] [illegible] for [illegible] [illegible] [illegible] history and [illegible]

[illegible] very [illegible] [illegible] [illegible] [illegible] [illegible] addition to [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] made it necessary to see that [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Adams: in, to see that I got it from the bank, the Anglo, London & Paris National Bank. The head of it was Mr. Phil Lilienthal, a wonderful man. He was killed in a traffic accident down the Peninsula and Mr. Ignatz Steinhart, donor of the Steinhart Aquarium, took over and after that Mr. Herbert Fleishhacker. I had an opportunity to get acquainted with all these men. It seemed remarkable that someone from a small firm as we had should go to the top men in the bank, but that was the practice in those days.

Several years later there was a merger of our business with another business and after two or three years the enterprise went out of existence.

Baum: Had you lost all contact with your irrigation work while you were in business?

Adams: No. I had started during those two years I was with Dr. Fortier, 1904 to 1906, a study of delivery of water to irrigators. I laid that aside when I left the work in the summer of 1906. While still in business, I took up as a side issue the completion of that report at Dr. Fortier's request, making the necessary field trips in Colorado, Utah, Nevada, Oregon, and Washington to get additional data. That was published along about 1910.

Baum: This was for the Department of Agriculture?

Adams: Yes. That was, I guess, the first publication in that field. (USDA, Office of Experiment Stations, Bulletin No. 229. Delivery of Water to Irrigators. 1910.)

WIFE AND CHILDREN

Baum: You mentioned that your wife was a secretary in your office when you were in Washington. What was her maiden name?

Adams: Amy Belle Hill. She had finished at a local normal school in Muncy, Pennsylvania, passed examination for teacher's certificate, and at the age of seventeen had taught one year in a district school at the fabulous salary of $22 a month. Desiring more remunerative work she took a business course and passed the United States civil service examination and stood No. 2 on the eligible list for the entire State of Pennsylvania and was appointed to our office in Washington in 1901.

Baum: When were you married?

Adams: We were married June 20, 1906.

Baum: I'd like to include some mention of your children.

Adams: Well, we have four. The oldest is Helen, who is Mrs. Percy M. Barr. Mr. Barr is a professor of

[illegible]

Adams: forestry over at the University. They live next door and have four fine children. The next is Francis Edward, a graduate of the University of California, a consulting mechanical engineer in Los Gatos. He married Jane Bolton. They have one boy. Then comes David Hill, a graduate of California and of Boalt Hall, and he is a lawyer in San Jose. He married Margaret Davis, and they have three children and live in Los Gatos. The fourth is Thomas Cooper who graduated from the University in forestry and in economics and later received his Ph.D. in forestry and conservation from the University of Michigan.

All three of the boys took the Naval R.O.T.C. at the University of California so when war seemed certain they were called and went in. Both Francis and Tom came out with tuberculosis and had to spend long periods in the naval hospitals, but both made full recoveries. Tom is now a forest economist in the United States Forest and Range Experiment Station in Portland. He married Laurie Browning and they have two girls.

[illegible]

ADMINISTRATION OF CALIFORNIA IRRIGATION INVESTIGATIONS AND THE DIVISION OF IRRIGATION, UNIVERSITY OF CALIFORNIA

Early Years of the Department of Irrigation, University of California

Baum: Then you returned to irrigation work after the business went out of existence?

Adams: I left the business in 1910, but it continued successfully for some time during the first World War. Early in 1907 Dr. Fortier had succeeded Dr. Mead in charge of Irrigation Investigations in the Department of Agriculture. Dr. Mead had gone to Australia. Dr. Fortier asked me to come back to the irrigation work and take over in California.

Baum: I believe your work with the Irrigation Investigations was also in cooperation with the University. How did that relationship first come about?

Adams: Well, as I told you earlier, back in 1900 President Wheeler invited Dr. Mead to organize a department of irrigation in the University.

Baum: You mentioned how you helped him.

Adams: Yes.

Baum: Why did President Wheeler want to set up a department at that time?

Adams: The title of the association's monthly publication was Water and Forests.

Baum: Was this all paid for by private subscriptions?

Adams: Entirely.

Baum: What sort of arrangement did President Wheeler make with Dr. Mead for payment for his services?

Adams: My recollection is that he was to receive $1000 for giving this six-weeks course of lectures and giving general supervision to the work of the department. There was no other compensation to those in the department.

Baum: Wasn't there a resident assistant?

Adams: Yes. Dr. Mead assigned Mr. J. M. Wilson, under whom I worked on Cache Creek, to be in charge of the department and also to undertake and direct Irrigation Investigations in California as a part of Dr. Mead's organization.

Baum: Was Mr. Wilson paid by the University?

Adams: No. He had a title of assistant professor of irrigation.

Baum: Did he have duties at the University?

Adams: Yes, he gave instruction. He broke down in that. He was a little too old to readjust himself to the instruction. He had some kind of a stroke in the classroom, and lingered for several months and died. Dr. Fortier

Adams: was sent later to succeed him. Dr. Fortier brought with him Arthur P. Stover who had worked under him in Utah.

Baum: Was Dr. Fortier paid?

Adams: Not by the University, no. He was paid entirely by the Department of Agriculture.

Baum: Then this was a service of the Department of Agriculture to the University?

Adams: Yes. All the University gave us was headquarters in the old Budd Hall.

Dr. Fortier didn't take much part in the irrigation instruction in the University. That work was carried on by Arthur Stover. I remember he was given a University appointment and may have received some University salary. After a year or two, he was assigned to take charge of Irrigation Investigations in Oregon. At that time Dr. Mead selected Bernard Etcheverry, who was then at the University of Nevada, to come down and give the instruction. He was independent of Dr. Fortier and the Department of Agriculture from the start, entirely paid by the University, and he reported to President Wheeler directly. Dr. Fortier had some relations still with President Wheeler, I don't remember just what they were.

I might say that when Dr. Mead set up the

Ad [illegible]: [illegible] a great lift to succeed him. Dr. [illegible] [illegible] Bin Ashkar [illegible] who [illegible] in [illegible].

[illegible]: [illegible] Dr. [illegible] paid?

[illegible]: [illegible] by the University, [illegible] by the Department [illegible].

[illegible]: [illegible] been to the University?

[illegible]: Yes. All the University [illegible] the old [illegible].

Dr. [illegible] [illegible] [illegible] was [illegible] by [illegible]. [illegible] given a [illegible] [illegible] [illegible] University [illegible]. [illegible] was [illegible] [illegible] in [illegible]. [illegible] [illegible] [illegible] to come [illegible] [illegible]. [illegible] [illegible] dent of Dr. [illegible] [illegible] from the start, [illegible] [illegible] [illegible] to [illegible] [illegible]. [illegible] had some relations still [illegible] [illegible] [illegible] don't remember just what they [illegible].

I [illegible] [illegible] when [illegible] [illegible] the

Adams: Department of Irrigation back in 1901, both Civil Engineering and Agriculture wanted it affiliated with its department. In order to overcome the dilemma, President Wheeler set up a separate department. It was to cooperate largely with the College of Agriculture because the Irrigation Investigations under Dr. Mead were set up to cooperate with the agricultural experiment stations in the western states.

Baum: After Mr. Etcheverry began to work for the University independently, how much cooperation was there between the Irrigation Investigations and the Department of Irrigation?

Adams: Very little.

Baum: Couldn't there have been joint investigations?

Adams: The Department of Irrigation was primarily devoted to instruction. Both Professors Etcheverry and Harding did consulting work and both, I think, were active on research committees of the American Society of Civil Engineers. Their fields of research were mostly different from ours.

Cooperative Relationship Between Irrigation Investigations, the State, and the University

Baum: When you took charge of Irrigation Investigations in California in 1910 you were with the Office of

Adams: Department of Irrigation back in 1946, the Civil Engineering and Agricultural Engineering worked it out jointly with its development. In order to overcome the difficulties, President Lee asked me to open the department. It was to encourage Larry Little, a Colleague of Agricultural Engineering, the Irrigation Investigations. We were a two-man cooperative with the Bureau of Reclamation stations in Davis and Berkeley.

Adams: After Mr. Stokey-Gray [illegible] the Department of Agricultural Engineering, [illegible] between the Irrigation Investigations and the Department of Reclamation?

[illegible]: Very little.

[illegible]: Sandwich [illegible]

[illegible]: The Department of Irrigation [illegible] Agricultural Engineering. [illegible] Bureau of Reclamation and [illegible] both. [illegible] on the same committee of the Agricultural [illegible] Civil Engineering. There is also a [illegible] difference [illegible].

Cooperative Relationship between Irrigation and Irrigation Engineering, the U.C. and the University

Adams: When you left charge of Irrigation [illegible] California in 1970 you were with the [illegible]

Baum: Experiment Stations. You had no connection with the University except the use of their offices.

Adams: We had an informal connection with the University because it had assigned some 25 acres on the University farm at Davis for experiments under Mr. Roeding and that work had been underway.

Baum: So there was some cooperation on investigation?

Adams: Yes. It was a very cordial relationship. The matter of funds did not in any way limit the spirit of cooperation. The University was offering us facilities and the Department of Agriculture, as it was intended to do, set out to assist them.

The other source of finances was the state. I told you the Water and Forest Association had supplied funds to the federal agencies back in 1900. In 1903 the state began to make a small appropriation and it did that through the State Board of Examiners. There was no State Department of Engineering at that time. At the instance of Clyde L. Seavy, who was then assistant secretary of the State Board of Examiners, the legislature authorized a continuing appropriation of $30,000 for cooperation with the various federal agencies. Of that, $7,000 was assigned to Irrigation Investigations. So we had state and federal funds to work with.

[illegible]: Equipment stations. [illegible] no connection with the University except [illegible] one of their offices.

[illegible]: We had an informal connection with the University because it had assigned some 25 acres of the University farm at Davis for experiments using Mr. [illegible] work and [illegible].

[illegible]: Do the [illegible] cooperation on investigations?

Adams: Yes. It was a very [illegible] relationship. The matter of funds [illegible] by [illegible] cooperation. The University was [illegible] and the [illegible] to [illegible] to [illegible].

[illegible] three [illegible] of [illegible] [illegible].

I told you the [illegible] and [illegible] supplied [illegible] to the [illegible]. In 1909 [illegible] to make a [illegible] and it did [illegible] the [illegible] at [illegible]. There was no State [illegible] at [illegible] time. At the instance of Hyde [illegible] Adam assistant secretary of the [illegible], the Legislature authorized a [illegible] of $30,000 for cooperation with [illegible] stations. At that, $17,000 was [illegible] Investigations. So we had [illegible] work with.

Baum: Did you have adequate funds?

Adams: I had adequate funds at the time, yes. The funds were not large. The regular annual appropriation from Washington was about $7,000 to match the amount from the state. Money was worth something then. From time to time Dr. Fortier assigned additional funds of several thousand dollars for our work in California.

That arrangement continued until 1913. Dr. Thomas F. Hunt had come to the University as Dean of the College of Agriculture late in 1912. He was very much interested in our work and he offered to supply what money we needed to supplement the work. So from that time on the University became a contributor to the finances of the cooperative work.

Leroy Anderson was then in charge of the Farm School at Davis. The University Farm was purchased in 1907 or 1908 and they set up a Farm School there. There had been quite a sentiment in the legislature for instruction in practical farm work not leading to a college degree. Superior Judge Peter J. Shields of Sacramento had been the most active one in promoting purchase of the farm and setting up this farm school. Professor Major was in charge of animal husbandry work and there was some conflict over

Dean Thomas F. Hunt

Adams: jurisdiction between Professor Major and Professor Anderson. After Dean Hunt came, Mr. Anderson left, and several years later purchased a farm in Santa Clara Valley. He became very much interested in water conservation in the Santa Clara Valley and was largely responsible for reviving the plans for formation of the Santa Clara Valley Water Conservation District.

Baum: When did they set up the Division of Experimental Irrigation?

Adams: When Dean Hunt set up a budget for irrigation, he had to have some unit to which it was assigned, so he called it the Division of Experimental Irrigation.

Baum: This was about 1913?

Adams: Yes. The name was changed from time to time and instead of appointing someone in the University at a University salary to take charge, he just left the whole thing to me as the one in charge of the cooperative work in California. That's why I was in effect a member of the College of Agriculture staff, but with no official connection with the University.

Baum: You were in charge of University work without being employed by the University.

Adams: Yes.

My first appointment to the University was in

Adams: 1916, but that didn't change my relationship. I reported to Dean Hunt, the state engineer, and Dr. Fortier before my appointment to the University just as I did afterward. I considered myself as responsible to all three.

Baum: I did want to ask about the efforts to combine the Division of Agricultural Engineering and the Irrigation Division in the 1920's.

Adams: I don't think that was of any importance. It was merely an incident that came up at one period. In the first place, the dean then was new to California and to the University. The assistant dean had some ideas about organization, and I sensed the feeling that they would be happy to see us combined with the Division of Agricultural Engineering. So we simply had to meet that situation. The details of how we did this are covered in my "Early History of the Irrigation Division, College of Agriculture."

Baum: I take it you think this would have been detrimental?

Adams: In our judgment in a state like California irrigation was so important that it needed the entire attention of a group of irrigation specialists. Our conception of our field was that it went far beyond the engineering phase of irrigation, and dealt much more with soils and crops and agricultural practices and irrigation

Adams: institutions than with agricultural machinery, which was then the main field of the division of Agricultural Engineering. When the Division of Agricultural Engineering was first organized under Professor Davidson, he and the dean and I had a complete understanding as to the relationship between the two. There never was any difficulty. The same was true when Professor Walker took over the Division of Agricultural Engineering. Our relationships were always most cordial and they were among our best friends.

Baum: Underwhose auspices did you carry on your irrigation investigations?

Adams: The three principal cooperating agencies, of course, were the University, the Federal Department of Agriculture and the State Department of Engineering. In special instances others were brought in, such as the Conservation Commission for some early studies, and the State Water Commission. It was of little importance where our funds came from. Money contributed by the Conservation Commission and by the State Water Commission was of course used for the purposes specified in the agreement for cooperation. There was never any conflict of interest between the various agencies.

[illegible]

[illegible]

[illegible]

Baum: There was never any conflict as to what type of investigation they wanted the money spent on?

Adams: No, no difficulty about that.

Our funds from the University gradually increased much above the amounts contributed by the other agencies and some of our men were working on subjects that were not related to the cooperative work at all, some technical problems like the studies by Dr. Edlefsen on the forces involved in the movement of soil moisture, and Professors Veihmeyer's and Hendrickson's work on the wilting of plants. Their work gradually became differentiated from the cooperative work. Our cooperative work was outlined in annual agreements between the three agencies.

When I took over in California in 1910, Dr. Fortier's headquarters were in Washington. About 1919 or 1920 his headquarters were moved to Berkeley and his Washington staff was brought out here. They became interested in special studies in California which were apart from the cooperative work. After Dr. Fortier retired about 1924 and Walter McLaughlin took over, he and I arranged that certain of the projects would be handled directly by him and certain of them directly by me.

When that change was made it involved no change

[illegible]

Adams: in our personal relationships. My full salary was taken over by the University in 1926. I was continued on the government roll as a collaborator and so continued for many years until the Soil Conservation Service was given control of the old Irrigation Investigations and they weren't in sympathy with my attitude toward some of their activities, especially with regard to the soil conservation districts, so by and by I had notice that my services were no longer needed as a collaborator. That made no difference whatever with our relationship with Mr. McLaughlin's group. Just one of those things that come when you don't agree entirely with policies that are being pursued.

Conducting the Irrigation Census

Baum: What was your first work when you took over as head of Irrigation Investigations in California?

Adams: My first job was to get my bearings on what was being done and then to go up to Davis and outline an experimental investigation program there. My predecessor Fred W. Roeding had started work there when the University Farm was established about 1908. Mr. S. H. Beckett, who had conducted the work there at Davis, under Mr. Roeding, had taken a position on the Kuhn project up at Willows. After getting my

[illegible]

Adams: bearings and getting the work organized at Davis, bringing back Mr. Beckett and putting him to work, I picked up the study of the old Wright irrigation districts in California begun when I was with Mr. Wilson on Cache Creek back in 1900. That work was about well organized when I was given the duty of directing the irrigation census in California in 1910. The irrigation census throughout the United States for 1910 was placed in charge of Mr. R. P. Teele of the Irrigation Investigation staff in Washington, the chief editorial assistant there. The responsibility for the work in each of the western states was placed with the one in charge of the Irrigation Investigations in the state.

That work necessitated gathering a staff of eight or ten men quickly. I was able to do that and got some very competent help. I had entire freedom in the selection and appointment of these men. They were paid by Census Bureau and their expenses also.

There were two interesting experiences I had in connection with the staff. The director of the census was Dr. E. Dana Durand, who had been one of my professors at Stanford. When I took up the census work in California, he wrote to me and said that he

[illegible]

Adams: didn't want to impose on me, but if it was convenient he would like to suggest two assistants. One was a man who had very successfully handled the general census in San Francisco. The other was a veteran of the Civil War, who was the father of Dr. Durand's wife's schoolmate in college. Well, of course, I took those two men on.

In taking that census we sought to cover every individual irrigation pumping plant, as well as the irrigation from ditches and canals. The former census taker was assigned to the Porterville area. His reports came in more complete and with more of them than from any other agent in the field. I wondered why, so I went down to see him. I got in the buggy with him and went around for his daily canvass. He was a pompous kind of a fellow. He had a sign painted on the back of his buggy, "Special Agent, United States Irrigation Census." He'd go up to a farmer--I just listened--and he'd say, "I'm an agent for the Irrigation Census. We want to get a record of your well. You have about a twelve-inch well?" "Yes." "About a four-inch pump?" "Yes." "You get about 450 gallons of water per minute?" "Yes." He was putting all the answers into the mouths of the farmers. Well, I stopped that very soon and his records were

Adams: more reliable after that.

The Civil War veteran's records were also coming in in a way that made me suspicious of them, so I went down to see him. He lived at Uplands and he was spending a great deal of time at the old soldiers' home at Sawtelle. One of our men felt that he was making up some of those records, so I called on him on Sunday morning at his home in Uplands. I went over some of his records with him and arranged for one of our other men working in Southern California to work with him in completing the small area assigned to him, but not yet completed.

Kuhn Project

Baum: You mentioned that Mr. Beckett worked for the Kuhn project for a few months. I've heard about that land settlement scheme. Before we pass the subject, did you come into contact with the Kuhn project?

Adams: I came into contact with that quite intimately. The man in charge of the Kuhn project was D. W. Ross, former state engineer of Idaho, whom I had known in Idaho. He had first set up the procedure by which the state engineer should investigate proposed irrigation districts and report on them before they were voted on by the landowners.

Adams: The nucleus of the Kuhn project was the land under the old Central Irrigation District canal, but it included other lands. It was entirely a private venture for the sale of water and land. It was in no sense a land settlement project as the term is usually understood. The activities of the Kuhn Project in the Sacramento Valley are outlined briefly in Bulletin No. 21 of the State Division of Engineering and Irrigation.

It was formed about 1906 and purchased the properties of a private canal company that had put into operation a portion of the old Central District Irrigation canal. The Kuhn Project also purchased the outstanding bonds of the old Central Irrigation District which were still a lien against the land, as well as additional areas outside of the old Central District. They organized the Sacramento Valley Irrigation Company and also the Sacramento Valley West Side Canal Company. They then proceeded to extend the old Central Canal and to sell land they had purchased.

The Sacramento Valley West Side Canal Company was organized as a mutual company and for each acre of land sold by the Sacramento Valley Irrigation Company a share in the mutual water company was given.

Adams: It was the intention of the Sacramento Valley Irrigation Company to furnish water only to lands it sold, but owners of outside lands who were refused delivery of water brought suit to compel delivery, partly on the grounds that the land in the old Central Irrigation District had the first right to receive water, and also that the Sacramento Valley West Side Canal Company was a public utility. The decision of the court went to the plaintiffs and subsequently the Railroad Commission declared the Sacramento Valley West Side Canal Company a public utility.

Later the Sacramento Valley Irrigation Company and the Sacramento Valley West Side Canal Company went into receivership and the companies were operated by a receiver for several years. These various troubles led to the organization of the Glenn-Colusa Irrigation District and about 1920 it took over the canal system of the Sacramento Valley West Side Canal Company.

A subsidiary of the Pittsburgh corporation that financed the Kuhn Project was the Mills Orchard Company. They acquired a large quantity of land in the neighborhood of Hamilton City and also some back of Maxwell. That was developed as a commercial enterprise, not for sale. It was managed by Mr. James Mills, later a regent of the University of California and for

Adams: a long time chairman of the agriculture committee of the regents. They had deciduous orchards and alfalfa as their main crops over in the Hamilton City area. The area west of Maxwell was entirely in citrus.

Mr. Mills had been manager of a large citrus development at Riverside. He was a very well-known man and very enthusiastic about citrus up in that area. Citrus had already been developed in northern and central California over in the Oroville area and in the Porterville area in the San Joaquin Valley. I don't know what has become of the Mills citrus orchards, but Mr. Mills was very much discouraged at one time because of the lack of cooperation of the local authorities in giving him the necessary pest control. He expressed that opinion to me at that time. He sort of threw up his hands. When Mr. Mills left active work up there and lived in Berkeley his son, James Mills, Jr. took over and as far as I know is still in charge of the Mills orchard properties.

Solano Irrigated Farms

Adams: If anyone is ever interested in tracing irrigation development in the Sacramento Valley or activities in that direction, I suggest they look up the Solano Irrigated Farms Project which was very much in the news

Adams: about the time of the activities of the Kuhn Project or perhaps later. This was an effort to develop an irrigation project in Solano County southeast of Suisun. It was a rather spectacular effort and ended in a complete failure. However, a canal was built and several small reservoirs constructed. It was sparked by a real estate firm in San Francisco and given very wide publicity in the San Francisco Chronicle. In fact, the Chronicle devoted so much space to the enterprise that I gained the impression that M. H. De Young, owner of the Chronicle, was personally interested, but I may be wrong in this. A real ballyhoo was carried on and excursions run from San Francisco with the idea of promoting the sale of land there. I suppose some land was sold, but it was a totally impractical enterprise as devised.

Late in the first World War Mr. L. A. Nairs, who had been a very prominent figure in the Kings River area as representative of the riparian lands down river, asked me to go over the Solano Project with him considering the possibility of reviving the project for rice growing. Mr. Nairs at that time was either with the State Council of Defense or with the Food Administration. I recommended

Adams: very strongly against such an undertaking. Owing to the low temperatures in that area at night, rice growing had already proven to be unprofitable there. The idea was soon abandoned. I don't know whether the State Real Estate Commission was active in those days, but if it was, any one interested could find records of these operations in their files. I could mention a number of private land development projects. It might be interesting if anyone is interested in doing research in that field. For instance, the Atascadero Project in San Luis Obispo. This was carried out with the skill of a master promoter named Lewis, I think the initials were E. G. His propaganda was most elaborate and included publication of the largest rotogravure publication. That was particularly alluring to those looking forward to retirement. Some features of his technique were so unrealistic as to be fantastic.

An extreme example was his promise to set up a university and offer any course that any land purchaser desired, even erecting a Napoleon Building for that purpose. Ultimately, of course, there was disillusionment. Previously he had gotten into trouble in a promotion, I think in St. Louis. He told me one day that in the Atascadero venture he had protected

Adams: himself so well that no one could trip him up. Ultimately, however, he moved down to the Palos Verdes Estate, out from Los Angeles, and there, I believe, he got into trouble once again.

Atascadero went on to become quite a settlement. I'm sure this has not been due to the glowing promises of the promoter.

An entirely different type of land development can be found at Corning up in the Sacramento Valley, carried through by a Mr. Woodson. He was an unusual man of the highest integrity. I have never heard any criticism of his operations. Through a combination of imagination and sincerity he succeeded in building a fine community. Anyone at Corning could give his name because he was the leader.

Idealism, rather than promoters' profit, has also figured in the history of getting people on the land in California. I have in mind the Little Landers' Colonies promoted by William E. Smythe. "A little land a living" was his slogan. I think his first venture was at San Ysidro down near the Mexican border below San Diego. Another was near Hayward. I never visited the Hayward enterprise but was very familiar with that at San Ysidro. An acre of land was about the normal holding. I

Adams: remember talking to one fine gentleman who had such an acre. He told me that it was impossible for him to work hard enough to earn a living on that land, which, of course, was true.

I, of course, have touched only on some highlights in this field.

Work of the Cooperative Investigations

Baum: Exactly what were your duties as head of Irrigation Investigations in California?

Adams: Our staff included several members of the irrigation staff of the Department of Agriculture assigned to California by Dr. Fortier. From time to time he loaned me other members of his staff for special work as needed. Otherwise, I had complete freedom in the selection of personnel for regular and temporary work. University employees that required regents' appointments and were intended to be permanent were appointed after my recommendation to the Dean of the College of Agriculture. There were no restrictions as to regular or temporary employees paid by the state or as to the temporary employees carried on the general assistance roll of the University.

Administrative work involved selection of personnel, matters of financing, our cooperative

Adams: relationships, selection of work to be undertaken, planning of that work in conjunction with the man or men assigned to it. The extent of my contact with men in the field, including those at Davis, depended on the training and experience of the men involved and the nature of the work. In some of the earlier work in which a number of the men would be in the field for the entire irrigation season or for some other extended period, all working on a single project, I was in the field a good deal of the time because I was necessarily the leader. Examples are, to do the water studies with alfalfa and rice, and our work with the State Conservation Commission. When leadership of the project was assigned to some member of the staff, I was in the field from time to time to keep in touch with it and to understand it.

There were also some projects of which I retained a measure of leadership but with some staff member or some temporary assistant for that purpose in charge of the work in the field. Examples were rice and cotton irrigation experiments, our experimental work at Delhi, and the two years' study we made in Hollister. My field contacts with such projects were frequent. You can't understand work if you know only

Adams: the beginning and the end, especially when you're dealing with growing plants.

Baum: Did you carry on some of these projects yourself?

Adams: I carried on certain work personally such as that related to irrigation districts, irrigation legislation, work with Professor Huberty on the cost of water, and other matters in the field of irrigation institutions and economics, but never allowed these activities to prevent my keeping in close touch with the other work going on.

Baum: Did you have to do much lobbying in the legislature or in the University to get more funds?

Adams: I had nothing to do with obtaining funds from the University. Back in the early days, as already explained, representatives of the Irrigations Investigations of various states had to promote the passage of resolutions by legislatures and other bodies in support of our appropriation in Congress, but there was no such activity in California after I took over in 1910.

I went into our work in greater detail in the manuscript I wrote, "The History of the Irrigation Division, College of Agriculture," a copy of which is in the University Archives.

Irrigation Practices

Baum: Can you explain the studies undertaken in a little more detail?

Adams: We sought to make studies of such matters as preparation of land for irrigation, methods of applying water, measurement of water, operation of irrigation pumping plants, amount of water necessary for different crops. Such work was largely concerned with alfalfa and grain at first. There was no intention to confine such investigational work to Davis, but that was the focus for certain phases of the work.

Duty of Water

Adams: In addition to gathering information to assist farmers in their practices on the farm, and that was very largely for men who were just starting in farming, and irrigation was new to many, we undertook work that would assist the state in its administration of the new water law enacted in 1913.

A matter of importance when irrigation was developing rapidly was more information on the duty of water. The duty of water is generally taken to mean how much is being used. The passage of legislation by which the state took over control of water rights made it desirable that it have as much information

Adams: as possible about the duty of water because it must pass on applications to appropriate water and information about the amounts that should be assigned was necessary.

Baum: Was that work in cooperation with the State Water Commission?

Adams: The only duty of water studies made in cooperation with the State Water Commission were those for rice. Prior to those studies we had made investigations of the duty of water for alfalfa throughout the Sacramento Valley, including work at Davis. In those studies we concentrated, not only on measuring the amount of water that was being used, but endeavored to determine the amount really required. There were great differences in the amounts of water applied and in some cases great waste and in some cases not sufficient water was applied. So we added extensive soil moisture studies to help determine the amounts of water utilized by the crop and how much was lost by surface evaporation and by deep percolation. We undertook to keep track of the use of moisture by the plant down to a depth of six feet, taking samples before and after each irrigation, watching the movement of the soil moisture, finding the reaction of the plant in plant growth or in the

Adams: yield.

About 1918 we added Professor Veihmeyer to our permanent University staff to undertake a study of the irrigation of deciduous orchards and vineyards. He began this work in the Santa Clara Valley cooperating with the Division of Pomology of the University through Professor A. H. Hendrickson. They extended this study with deciduous orchards and vineyards widely over the important deciduous fruit and vineyard areas and continued it for many years. Professors Veihmeyer and Hendrickson reached the conclusion that water is readily available to plants so long as it is above the "permanent wilting percentage." This wilting percentage varies widely with different soils. To gain further information about the wilting of plants they conducted greenhouse experiments with soils representing nearly all the important soil types in California. They then went on to explore the whole field of water, soil and plant relationships. I think that it was in the late 1920's that Professor Beckett was transferred to Southern California to carry on studies of the irrigation of citrus fruits, avocados and walnuts, working out of the Citrus Experiment Station at Riverside. In time his work was placed administratively under the Citrus Experiment

Adams: Station. After Professor Beckett's death the work was continued by Professor Huberty. There were other orchard irrigation centers, but those mentioned were the most extensive.

These more technical studies were not confined to those mentioned above. For instance, there was the very able work of Dr. Edlefsen on the forces involved in the movement of soil moisture; the work of Dr. Doneen on the irrigation of sugar beets; studies of artichoke and lettuce irrigation by Professors Veihmeyer and Hendrickson; irrigation by sprinkling by Mr. Christianson and many others. These studies were not part of the cooperative work, and therefore did not have to fit into a cooperative program. University workers of established competence must be free to think out and plan their own research, and if you don't have men capable of independent research you don't have much of an organization.

Burning of Brush in Ranges Areas

Adams: A very important research undertaken by the division which I failed to mention involved experiments in the burning of brush in range areas to make the land available for grazing. This work was begun after Professor Veihmeyer succeeded me as head of the division, I believe. At any rate, it was he who conceived, planned, and carried out the work. It was done under

Adams: the auspices of the range committee set up by the dean and headed by Dr. George H. Hart, head of animal husbandry. In addition to University personnel the committee included representatives of the cattlemen and the State Board of Forestry. It was a very interesting project. I visited Professor Veihmeyer's plots and small watersheds a number of times. Experiments were conducted in the Red Bluff and Redding areas and Lake County, Madera County, Monterey County, and even in San Diego County. It was clear that the burning of brush would open the land for range purposes, but whether burning would increase soil erosion and reduce rainfall penetration was highly controversial. Cattlemen, of course, favored burning while the foresters generally opposed it, or at least they questioned it and questioned Professor Veihmeyer's conclusions, just as Professor Veihmeyer questioned some of the conclusions of the foresters. I think it is correct to say that primarily as a result of Professor Veihmeyer's work in this field, controlled burning in range areas is now a widely accepted practice conducted in collaboration with the State Board of Forestry. Incidentally, this work has been continued since Professor Viehmeyer's retirement several years

Adams: ago.

Initiation of Studies

Baum: Who initiated your projects?

Adams: My job in the cooperative investigation was to make the best use of the available money in doing the things that would be of most value to the state. It was my job to determine what those things were. For each year a program was set up specifying the cooperative work to be undertaken during the year. After discussing this with the state engineer and with the dean of the College of Agriculture it was submitted to Dr. Fortier, and if approved, as it always was, it was embodied in a memorandum of agreement for the fiscal year, in which the obligations of each party to the cooperation were stated.

Baum: Did Dr. Fortier allow you a great deal of discretion as to what to do?

Adams: I don't remember, after I took over in California, that he ever gave me a single directive as to what we should do in our cooperative investigations. He was the type of man who would expect his men in the field to keep him informed as to what was being done. I had frequent conferences with him. He would usually come out to California once a year and he occasionally

Adams: would have conferences of the whole staff in Washington or in the West. But I don't recall that he initiated any of our studies. He must have influenced what we did, but it was my job to figure out what should be done and to get his approval.

Baum: Was Dr. Mead similar in this respect, or was he a more directing type?

Adams: While Dr. Mead was chief of the Irrigation Investigations (which was until 1907 when he went to Australia) there were no representatives of the office in each of the western states. Work in the Rocky Mountain states was administered in the Cheyenne office which Clarence T. Johnston, assistant chief, was in charge of until he became state engineer of Wyoming. On the Pacific Coast Dr. Fortier was in charge. I know that Dr. Mead always kept closely in touch with what was being done, but I cannot say to what extent he gave direction. When I undertook the Investigations in Utah in 1902 he gave me general directions, but I had no further instructions from him during the progress of the investigation. I knew he set up the program of the study of interstate water rights on the Platte River, but was away in Italy during the season that the work was carried out.

Baum: I believe that you stated somewhere that as funds

Baum: contributed by the University and the staff of the division increased you took on more and more work that had no relation to the cooperative work. Is that correct?

Adams: Yes. This was especially true beginning in the early 1920's. By 1930 we had a University staff, all appointed by the regents, of eight or nine and a budget sufficient to maintain this staff and meet the necessary expenses of clerical and other general assistance--probably $50,000 or $60,000. Salaries and expenses were much less then than now. The others were engaged in teaching at Davis or in University research. Research was conducted by University projects outlined and approved by the dean and reported on semi-annually or as most convenient. There was a leader for each project and sometimes a research committee. The various projects usually covered a field rather than any specific piece of work.

Once a field of research was set up, such as those assigned to Dr. Viehmeyer, Dr. Edison, Professor Huberty, Dr. Doneen, and Clarence Johnston, it was the leaders' responsibility to develop it.

Baum: Were there any complaints from farmers that you were spending too much effort on some crop in which they

Baum: themselves were not interested?

Adams: No, I wouldn't say that. Some farmers in Southern California once raised the point of whether we had been requested to do certain work. The background of that was that the Southern California growers were very insistent in their requests to the University for aid in their problems. It was natural for them to wonder if we had been asked to do this. Our job was to anticipate the needs and take up studies which we considered important.

Baum: There wasn't any feeling by some groups of growers that they were being neglected?

Adams: Oh no.

About 1936 at my request Dean Hutchison appointed Professor Viehmeyer to succeed me as head of the division. I felt that the nature of our work was then such that a man with the training of Professor Viehmeyer was better suited to lead it. Another reason was that I had gradually become so much involved in other activities that I could not give adequate attention to the division. By that time Professor Huberty was in charge in Southern California and not really a part of the division as previously administered.

Professor F. J. Veihmeyer

Cooperation with Other Specialists

Adams: Our policy was to bring into our work specialists in other fields. The most notable example was the long continued and close cooperation between Professor Viehmeyer and Professor A. H. Hendrickson of the Division of Pomology in studying the irrigation of orchards and vineyards and the wilting of plants and general matters relating to soil and water relations. L. D. Doneen, who was studying irrigation of sugar beets and truck crops, cooperated with the truck crop division at Davis. Professor Christianson cooperated with the sprinkler industry in his study of the hydraulics and economics of sprinkling. Professor Huberty cooperated with the Chemistry Division in his study of underground waters in the Putah Creek area. Professor Beckett cooperated with the Division of Agricultural Engineering in the study of wells and pumping in the Putah Creek area.

In our rice experiments, we cooperated very closely with the government rice experiment station in Biggs, doing some of our work there and bringing the one in charge, first Ernest L. Adams and then Jenkin W. Jones, into our field work, keeping them in touch and working with their advice. We organized

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Adams: a rice committee which the director of the experiment station appointed at our request and brought into that a specialist in the grasses and weeds that infested the rice fields, Professor Weir in drainage, Professor Shaw in soils, and others. This rice committee sat in on the planning of our rice irrigation studies and made frequent visits to the field. So we were in constant consultation with specialists in other related fields. We didn't undertake to go it alone.

In our cotton irrigation studies, our cooperation was with the government experiment station at Shafter, first under W. B. Camp, now a very large commercial cotton grower, and then with his successor, George Harrison. That illustrates the type of approach we used in all our studies.

Personnel

Baum: It sounds like one of the major problems in those days was to find qualified personnel.

Adams: I would not say that it was a problem, although it required care. Special care, of course, was needed for those recommended for permanent appointment by the regents, that is, our permanent professional staff.

Baum: What kind of people did you look for for your work? Weren't you competitive with the other farm agencies?

Adams: Not necessarily competitive. It depended upon what we were doing. For some of our work, men with engineering training were primarily desirable, with some training in agriculture. For instance, in our cooperation with the State Conservation Commission, most of the field men employed were engineers. The same for the Irrigation Census. Few of them had had any special experience in the type of work we were doing. The men trained in agriculture were equally effective in some of those field studies. Our studies of pumping or irrigation sprinkling, those were problems involving primarily engineering training. Our studies of use of water involved engineering to a degree, but also involved knowledge of crops and agricultural practices. Some were trained in agronomy, some in soils. In building up our University staff, we had to look for young men with a bachelor's or master's degree, because there were few men with advanced training and experience in our field. We wanted men with ability and good basic training in the field in which they would be used. Personality always had a great deal to do with the selection of the staff. It seemed to me very important that we have always a very congenial group, a group that was willing and able to cooperate freely with each other and with others. I've told you how

Adams: we cooperated with different agencies.

Another feeling I had was that we shouldn't be in-growing in the selection of our staff. We had several from the University of California. We could get competent men from the University, but I wanted some from other university and regional backgrounds. Professor Viehmeyer came from George Washington University and the Massachusetts Institute of Technology and had had a number of years experience in the Federal Department of Agriculture. In the early years we had O. W. Isrelsen from Utah Agricultural College who had specialized in engineering and soils and had his master's degree from California. Later we had J. E. Christianson and Dr. N. E. Edlefsen from the Utah Agricultural College and also from the University of California. Dr. Doneen came from the University of Washington, Vernon Givan and Arthur Pillsbury from Stanford--both graduates in civil engineering.. Clarence Johnston came from the University of Michigan.

Baum: Were these the men you had in charge of projects?

Adams: Well, in charge of investigations or making them themselves. Sometimes there would be a committee to advise but primarily the work was done by the leader.

Adams: By the middle 1920's it became evident that it would be desirable for those of our men who did not have advanced degrees to get them. I got Director Hutchison--later Dean Hutchison--of the University Farm or Branch of the College of Agriculture at Davis as it was then called, to talk to our group on the desirability of obtaining advanced degrees. This was before we had any men with their Ph. D. or its equivalent on the staff. Following this Professor Viehmeyer took leave and obtained his doctor's degree in plant physiology from Johns Hopkins University. Professor Huberty went to Stanford and got his advanced engineering degree there. Vernon Givan and Arthur Pillsbury had advanced engineering degrees when appointed. J. E. Christianson and Clarence Johnston also obtained advanced degrees. Dr. Edlefsen and Dr. Doneen already had their doctor's degrees when they came to us.

Each project every year was assigned a budget. Especially during the year 1924 when Iwas in residence at Davis, we had monthly meetings of the group to go over the work in the field, the finances needed, and we'd make adjustments, additions or reductions as seemed indicated by the work going on.

Baum: Who did you use for field work?

Adams: All of our projects involved a great deal of field work by the leaders.

Baum: It wasn't a desk job.

Adams: No, it wasn't a desk job at all for any of us. If the leader needed assistance, it was provided. Usually it involved labor or equipment more than anything else. Sometimes we were able to get younger men, recent university graduates, to go into the field and help.

Baum: Were you ever under any pressure to employ certain people?

Adams: No.

Comments on Agricultural Extension

Baum: You mentioned once that when Agricultural Extension was first established you were not too pleased with it.

Adams: When Professor Crocheron came out here and organized the Agricultural Extension Service, he had the task of finding men to go out as farm advisors. He was able to get some very experienced men. In other cases, the men he was able to obtain didn't have much experience. They couldn't go out and say, "We don't know anything." They had to assume background. Take in our own particular field, we had

Adams: had a good deal of contact with the farmers. Many requests came in to us to go out in the field and help individual farmers in their irrigation problems. We enjoyed these contacts and did not like to give them up to what we thought were inexperienced young men. I think we were rather narrow-minded. There might have been a little feeling of jealousy on our part. We're all subject to error in our judgment sometimes.

As we came to know them better and to come in touch with their work, we became very much attached to the Extension Service and I personally became very much attached to Professor Crocheron, the director. We had many activities together with the Extension Service; the farm advisors were constantly calling members of our staff to help them with this and that until a specialist in irrigation was appointed and he took that over.

Baum: What did you think of Extension's system of working through local farm bureaus?

Adams: In the early years the Extension Service worked through the local farm bureaus, but not exclusively so. In fact, the Extension Service organized the local farm bureaus, beginning with the farm centers, which then formed the county bureaus. The purpose

Adams: was to get a sufficient number of farmers in each community back of the Extension Service to insure its success. I remember that in some counties there were as many as a dozen farm centers.

It was the duty of the farm advisors in those days to meet with these farm centers at least once each month. The farm center meetings were usually held in the evenings so the farm advisors were pretty busy--working elsewhere in the daytime and then these meetings in the evenings. Each of the farm centers had a chairman and there were usually committees appointed to give special attention to particular interests. The farm advisor was really a leader in guiding the work of these committees of the local centers. The work was entirely educational.

Working with thefarm centers was not the only duty of the farm advisors. They had their farm calls to make in answer to inquiries and were more or less the leaders in promoting the welfare of the local community. I remember how emphatic Dean Hunt was that the farm advisors should not seek to dominate or dictate to the farmers. In fact, he had a very definite rule that no farm advisor should call on a farmer unless invited to do so. He wanted the University to keep entirely out of any regulatory

[illegible]

Adams: work. The University was at that time doing some regulatory work--for instance, in fertilizer control. The State Department of Agriculture was attempting to do some educational work. Dean Hunt entered into an agreement with the state director of agriculture and the educational work was left to the University.

In regard to the Extension Division working through the local farm bureaus, I think I should say that in due time the various county farm bureaus were organized into the State Farm Bureau Federation and this federation began to go into activities not related to the educational work that the Extension Service was doing. At the beginning of the 1930's the Extension Service pulled entirely away from the farm bureau--that is, it no longer worked through the local farm bureaus although it worked with them where the work was educational.

I understand that in a number of states the Extension Service worked much more closely through the farm bureaus than they did in California. In fact some of the financial support of the farm advisors, or county agents as they were called, came from the farm bureaus and the county agents were looked upon as representing the farm bureau. That plan, however, was never carried out in California.

Adams: The Agricultural Extension Service was conducted entirely by the director of the Agricultural Extension Service with support from the federal government, the University and the counties.

Baum: Were the services of Extension advisors available to non-Farm Bureau members?

Adams: Oh yes. They were available to members of the Grange, the Farmers Union, or unorganized farmers.

WORK WITH THE STATE CONSERVATION COMMISSION

Members of the Commission

Baum: You mentioned previously that one of your jobs was working with Dr. Pardee and the State Conservation Commission. How did that cooperation come about?

Adams: Hiram Johnson, who had been elected governor in the fall of 1910, appointed a committee to make studies and draft legislation with reference to water and forests, lands and minerals, and other natural resources. When that committee was announced, Mr. A. E. Chandler called me up and said to me, "Now, we're not going to hide our heads under a bushel."

Mr. Chandler had participated in the cooperation with the Water and Forest Association on Cache Creek, making a survey of the Little Indian Valley reservoir site under the Geological Survey. At that time he was an instructor in civil engineering at the University. He made the survey as a summer job. After that he made a report for Dr. Mead on irrigation from Tule River. Following that he was placed in charge of Irrigation Investigations under Dr. Mead in Nevada. One of the first things he undertook over there was

Adams: to draft an irrigation law for Nevada. After that law was passed, he was appointed the first state engineer of Nevada. After administering the Nevada irrigation law for several years, he became assistant chief counsel of the Reclamation Service and dealt with legal matters on projects in the western states.

Baum: Was he an attorney?

Adams: While he was in Nevada he passed the bar examination.

Mr. Chandler left the Reclamation Service and joined with Mr. C. E. Grunsky and several others in forming an engineering firm in San Francisco. He was also appointed assistant professor of irrigation institutions in the University to work with Professor Etcheverry, and gave courses on irrigation institutions and water rights. While there he wrote a very fine little book on the elements of western water law in which he reviewed the water right laws in other western states and gave his ideas as to the type of legislation needed in California.

We had always been very good friends since I first met him in 1899 when he was teaching in the Watsonville High School. So he called me up, as I said, when Governor Johnson appointed Dr. Pardee to draft legislation. I'm quite sure he shortly thereafter called on Dr. Pardee, who had been appointed chairman of the committee. I also went to see Dr.

Adams: Pardee. (Mrs. Pardee told me he preferred to be called Doctor rather than Governor. He was an eye and ear specialist.) I was told to come at ten o'clock in the morning. It seems that Dr. Pardee always had his breakfast in bed a little before ten. He never ate lunch. So I frequently went down there and found him still in bed, right after his breakfast.

I ought to go back a little and point out that efforts to pass irrigation legislation back in 1903 had failed, largely due to the opposition from Southern California, headed by Judge John G. North, who was president of the Riverside Water Company, and had become president of the California Water and Forest Association. In subsequent discussions before the Commonwealth Club in 1904 and 1905, the club made an extensive study of legislation and the whole problem of regulation of water rights, and Judge North made several appearances and expressed his very strong opposition. He claimed their water rights were all settled in the South and there was no need for legislation.

Attending an irrigation congress in Pueblo, Colorado, I think in 1910, I heard Judge George H. Hutton of the Los Angeles County Superior Court describe the California water laws as the best laws

Adams: in the country. Well, I knew to the contrary and I felt that one of the first things that would be desirable would be to find a way to overcome the opposition that had come forward previously.

So I suggested to Dr. Pardee that, with his approval, I'd like to go down and see Mr. Francis Cuttle, who had succeeded Judge North as president of Riverside Water Company, and Judge Hutton, and explain what was generally in mind in connection with irrigation legislation and enlist their interest in it.

I first called on Judge Hutton. I had a very pleasant talk with him and he conceded that what he had in mind was the underground water law. He could see there was some need for general legislation and was very sympathetic.

Then I went over to see Mr. Cuttle. Under the old code, which was still in effect, anyone desiring to appropriate water would post a notice on the bank of the stream and then file a copy of the notice in the county clerk's office. That was the end of the matter as far as any record was concerned. I had heard Mr. Cuttle state that all the water had been appropriated in the South, and had been for a long time. So I went to the courthouse in Riverside and I

Adams: think also in San Bernardino, and I listed recent appropriations. I had that list with me when I called on Mr. Cuttle. He was quite rigid, adamant, when I approached him first. He said, "That water is all appropriated. There's no need for anything of the kind any more." I showed him the list. He couldn't believe it when he saw all these recent filings. His attitude changed. I couldn't tell just how he felt, but he was apparently more friendly.

By the time I got back to Berkeley he had got himself appointed on Dr. Pardee's committee to frame legislation. So when I got back to call on Dr. Pardee, Mr. Cuttle was a member of his committee.

Baum: Did Mr. Cuttle get on the committee in order to encourage legislation, or to prevent it?

Adams: Well, he was going to look out for the interests of the South. I think he saw some reasonableness in what was being attempted.

Baum: He was president of the Riverside Water Company?

Adams: Yes. Under Judge North he was superintendent. I had done some work down there and became well acquainted with him, so I knew him well at the time.

Baum: I presume he had numerous appropriations he wanted to protect for his company.

Adams: I'm not sure what was in his mind. He was thinking, of course, of his company and of other companies in the South. He became gradually one of the strongest advocates of legislation. In his later years, at water meetings I've heard him frequently refer to the early efforts to gain legislation.

This committee recommended the appointment of a State Conservation Commission and that was authorized by the legislature in 1911. Dr. Pardee was chairman. Mr. Cuttle was a member. The other member was Mr. J. P. Baumgartner of Santa Ana.

Baum: How much actual work did the members of the commission do?

Adams: They, of course, didn't undertake to do field work. Their responsibility was to gather data and prepare legislation. They had to rely on others to collect the data.

Baum: What was the pressure for the Conservation Commission, anyway?

Adams: Of course there was a lot of talk about conservation during President Theodore Roosevelt's administration. Then there was the controversy over the disposal of the public lands under Secretary of Interior Ballinger. The whole philosophy of that movement was reviewed by President Roosevelt in an address before the Commonwealth

Adams: Club in 1911. So it was a very hot subject at that time.

Dr. Pardee had been in the forefront of the discussion out here. I know he had attended irrigation congresses, at least one, because I saw him at a congress in Ogden about 1902.

Baum: Louis Glavis was secretary of the commission.

Adams: Yes. Louis Glavis was a very controversial figure at that time. He had gained great notoriety in connection with the Ballinger controversy. Dr. Pardee thought it would be a smart thing to get Glavis out here, so he appointed him secretary of the commission.

Baum: He wasn't in California at the time?

Adams: No, he was brought out here for that purpose.

Baum: Did you meet Mr. Glavis?

Adams: Oh, I had a great deal to do with him. Well, I won't say that, because I didn't care to have too much to do with him. He didn't last too long. There were controversies regarding him within the commission...

Baum: I take it you didn't care for him too much personally.

Adams: He was a nice personality. I know, one thing came up one time. We were cooperating with the commission and Glavis asked me, almost told me, to do a certain thing. I objected to Dr. Pardee. He said, "You tell

Adams: Glavis to go to... You and I are doing this, not you and Glavis." By that time Dr. Pardee was more or less fed up on Glavis. I think Glavis just didn't fit into the California situation. He undoubtedly performed a fine service in disclosing some of the dishonesty and irregularity that was an issue in the Ballinger investigation.

Baum: Were there any differences between Glavis and the commission on policies?

Adams: I don't know that there were. There probably were. Glavis couldn't influence that commission. It is probable that because of his attempt to assert his own more radical views that he didn't last.

Baum: His more radical views?

Adams: I rather think so. I don't know.

Baum: It seemed to me the commission's views were quite radical for that day.

Adams: I don't think you could call them radical. The subjects were very hot. There certainly had been great laxity in disposal of the western resources, especially the forests and the lands at that time. There was a great need for reasserting stricter public control. I would say that the commission was exceedingly progressive, at least Dr. Pardee, rather than radical.

Baum: It seemed to me that the commission used stronger language in their report than one usually sees in that formal type of report.

Adams: Maybe I can partly explain that in this way. At one of the meetings of the Commonwealth Club, when we were discussing the water commission bill, Dr. Pardee said, "Some of us were forced to take at times rather extreme views on some of these questions in order to get anything at all." He didn't expect to get as much as he advocated.

Irrigation Resources Study and Map

Baum: What work did you do in cooperation with the commission?

Adams: As soon as the commission was appointed I saw Dr. Pardee. It seemed to me that what would be helpful for the commission to do in the field of irrigation was to make an investigation of irrigation resources, that is, the lands and the water supply. I don't remember just how I outlined it to Dr. Pardee. If we undertook the work, of course, it would have to be done at the expense of the commission. We didn't have sufficient funds, but the commission had, I think, $100,000. Dr. Pardee was immediately interested.

I took it up with Dr. Fortier and got his approval. We entered into a cooperative agreement by

Adams: which we should undertake it. This wasn't intended to be a technical engineering study, although engineers were primarily employed in conducting it. The idea was to bring together such information as was then available on water supplies, s torage possibilities, on irrigable and irrigated lands, and present a state-wide picture of the status of irrigation and such suggestions as we might make as to future possibilities. The idea was also to include an irrigation map of the state, which had never been prepared previously except for one of the Central Valley that William Ham Hall had prepared back in the eighties. I knew from experience you can teach more by a map or a picture than you can by a text. People don't ordinarily read reports. Lest I forget it, I might say here that in 1922 we entirely revised this map after another field canvass of irrigable and irrigated areas. Mr. Fred Scobey of Irrigations Investigations staff prepared an entirely new base, and the Geological Survey generously prepared the topography without cost to us, and also lithographed the maps at cost.

We went to the records of the Geological Survey and the William Ham Hall reports for data on surface and underground water supply, and where no data were available we had to estimate the run-off from rainfall.

Adams: On the matter of reservoir sites we had to rely very largely on the recent work of the Reclamation Service. On the matter of agricultural lands, we had William Ham Hall's maps of the Central Valley, but there were no maps of the outlying areas which indicated with any accuracy for our purposes the arable lands. So we had to send men into the field.

People in the state generally, and I was certainly among them, didn't realize the number of smaller valleys scattered over the state. I think we tabulated around a hundred different areas as topographically irrigable. Our report of irrigation resources was included in the report of the State Conservation Commission and published in 1912, pages 86 to 327.

After our irrigation resources study was completed, it seemed to me that it would be helpful in educating the public to the need for irrigation legislation to present data that would show in more detail the wide variation in practice and requirements throughout the state. So I again proposed cooperation with the Conservation Commission. The proposal was that we make a study of the use of water during 1912 in Shasta Valley at the northern end of the state, on Feather River, in Santa Clara Valley, on San Joaquin River and its tributaries, and on Santa Clara River in Ventura

Adams: County and Santa Ana River in San Bernardino, Riverside and Orange counties. That was approved all along the line. The report of this study together with a summary of our irrigation resources report was published in Bulletin 254 of the Office of Experiment Stations, U. S. Department of Agriculture.

All this leads up to the legislation that was passed in 1913.

Background of the 1913 Legislation

Adams: Well, the commission set about drafting a law. Our cooperation with the commission had nothing to do with the drafting of that law. Any contact I had was more or less by courtesy of Dr. Pardee. I was present at many of their meetings and had some rather different ideas on the subject and I know I expressed them and that Dr. Pardee was always very cordial about it.

Defeat of the 1903 Works Bill

Adams: To trace that work, I think I ought to go back a little and, possibly at the expense of some repetition, explain where the Commonwealth Club came into this matter. I already spoke of Dr. Mead's investigation of nine streams in the state in 1900 and the resulting

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Adams: recommendations for legislation. At the conclusion of those studies the Water and Forest Association appointed a commission to draft legislation. The engineers who prepared the various reports in Bulletin 100 didn't propose a law; they proposed principles that were needed. The commission appointed by the Water and Forest Association was headed by Chief Justice W. H. Beatty of the California Supreme Court, a very fine, able, high-principled man. President Wheeler of California and President Jordan of Stanford; the heads of the civil engineering departments, Professor Soulé of California and Professor Marx of Stanford; F. H. Newell, director of the Reclamation Service; Dr. Mead; Frank H. Short of Fresno. Also on that was Judge John D. Works, then, I believe, a judge in Los Angeles, later United States senator. Judge Beatty, by the way, didn't sign the report because there was some question of the constitutionality of some of the provisions and he didn't think it was proper for him, as chief justice, to sign the report. I was familiar with the work of this commission because I remember attending a number of meetings, especially the last one when the report was signed.

Judge Works prepared the bill and it became known as the Works Bill. That was introduced into

Adams: the legislature in 1903 and owing to the opposition of the South, headed by Judge North, president of the Riverside Water Company, it was defeated.

Commonwealth Club Study of Water Rights, 1904-1905

Adams: That brings us down to 1903. That was the year the Commonwealth Club was organized. In 1904-05, the club made an exhaustive study of the water rights situation in California. It was led off with a paper by Mr. William Thomas, who had been head of the Water and Forest Association. Then it was referred to two different sections and was discussed in the club by the most prominent lawyers and others interested in water legislation in the state. Included in the appendix of the report of the discussion, (Commonwealth Club Transactions, Vol. I, No. 6) were the recommendations of the engineers who prepared Bulletin 100, the full text of the report prepared by the Water and Forest Association commission, and the remarks in full of both those who had approved and criticized the bill, so it made a very complete history of the movement up to date, 1906.

Baum: Were you present?

Adams: I attended the meetings. The only direct contacts I had was when the chairman of one of the sections which

Adams: reported on the subject, Charles Wesley Reed, asked me to meet with him and I spent a long evening with him going over the earlier reports and recommendations and legislation in other states.

At the end of the discussion in the Commonwealth Club, 1905, a committee was appointed to draft a new law. Then came the fire and earthquake of 1906, destruction of all club records and interruption of its work for a number of months, and it was not until 1910 that the subject of water, other than San Francisco and Bay cities water supply, again came before the club.

Commonwealth Club Section on Conservation

Adams: In 1910 the Commonwealth Club took up the study of the conservation of our forests. This was followed by a study of the twilight zone of authority between the federal and state governments in matters of conservation. The highlight of this discussion was a debate between Judge Frank H. Short of Fresno and President Theodore Roosevelt on the control of our national resources. Following that, I was asked to form a section on conservation, and among other things, to take up again the question of water legislation.

Adams: I was busy at the time on the cooperation with the Conservation Commission in our study of irrigation resources, but I sat down with Earle Walcott, the executive secretary of the club, and worked out a plan of organization and various committees and personnel. We arranged for six committees within the section. A committee on agricultural lands headed by Professor Charles B. Lipman of the University of California; a committee on water supply and irrigation with Mr. C. E. Grunsky, chairman; a committee on forestry with Professor Walter Mulford as chairman; a committee on fuel, Mr. Mark L. Ricca, chairman, then I guess the most prominent California petroleum engineer and later, during World War I, Federal Administrator of Fuels; a committee on minerals other than soils, H. Foster Bain, later Chief of the U. S. Bureau of Mines, as chairman; a committee on water power with James H. Wise, a very brilliant young engineer of the P. G. & E., as chairman. We had some high-powered men on those committees.

That section, through its six committees reporting independently, came before the club in 1912 and 1913. Our report made the longest report the club had ever published, some 246 pages. It was quite a job, lots

Adams: of fun. I had a wonderful group. I always felt a little ashamed being general chairman of the group, being younger than most of the group. They were good sports and took it. I had no difficulty in obtaining the consent of these different men to act as chairmen and they all performed a very fine service.

Baum: You had been active as editor of the Commonwealth Club Transactions before that.

Adams: That was 1908 to 1909. That was while I was still in business in San Francisco. I did that while riding on the street car or home in the evenings. A lot of fun. I worked up a format, a style book for it. As soon as we had an executive secretary in the club, that became one of his jobs.

Baum: Perhaps they were more ready to accept a young man who had been editor already.

Adams: Being an editor previously probably had little to do with it, since few members knew of my doing that work. I wasn't a chicken, I was 35, but the others were older. It was a very distinguished group. Those were the days when the club had no difficulty getting the top leaders to work. It's much more difficult now.

At the time the Commonwealth Club took up the question of possibly drafting a new water law, the Conservation Commission was busy on that subject and

Adams: we thought it better to keep in touch with the commission and assist them in any way we could. A subcommittee was appointed to confer with the Conservation Commission, which they did. Dr. Pardee and one time Mr. Cuttle came over to the club when we were considering the water commission bill. Dr. Pardee expressed great satisfaction at the help the club was extending.

1913 Water Commission Act

Adams: The general thinking at that time of the members of the section on conservation was that the state should provide for a body within the State Department of Engineering to deal with the regulation of water rights. Since the Works Bill of 1903 was defeated, I believe all the western states but Montana had adopted water laws basically in line with the Colorado or Wyoming laws. Under the Wyoming law there was an administrative determination of existing rights by the State Board of Control. Oregon had a clear-cut difference. They followed the Wyoming law up to the point of final adjudication of rights. The fundamental need in the adjudication of water rights is to gather objectively and impartially the factual data regarding use of water and relative rights of the users

Adams: determined by dates of appropriation and quantity of water used. Under Oregon law, after the state engineer has determined the rights by administrative procedure, his findings are presented to the courts for adjudication.

Our general feeling in the section was that we should have the administrative determination in California rather than the Oregon system. We believed that ultimately the office of state engineer should be merged into a State Department of Public Works. On several occasions our section or other sections made that recommendation and that water rights be a part of it. Dr. Pardee was in favor of the Oregon system and that was adopted in the California law. In California the state was authorized to make the investigation and prepare a proposed adjudication only on reference by the court.

Another purpose of the state water laws was to provide for a method of appropriation by application to the state. Still another was to provide for state supervision of distribution of water under these rights as established.

But Dr. Pardee said "No, that's the business of the courts. They should direct if necessary the supervision of distribution under the adjudicated

Adams: rights." I argued with Dr. Pardee on that and when the bill was pretty close to passage, as I was riding up on the train to Sacramento with him, I argued with him all the way. Finally I said, "I think I have it, Doctor." And I fished out a piece of paper and a pencil and wrote a memorandum...I think this is a copy of it.

Baum: (Reading) "The supervision of the distribution of water in accordance with priorities established under this act, where such supervision of the distribution of water does not contravene the authority vested in the judiciary of the state, shall be under the State Water Commission."

Adams: That was the memorandum that I wrote out for Dr. Pardee.

Baum: You wrote..."does not contravene the authority vested in the judiciary..."

Adams: Yes, that was the point. He said, "Frank, I hate like hell to admit it, but I'll have to accept that." That section was adopted as Section 37 of the original act. Well, it didn't mean very much then. My thought was that if the camel could get his nose into the tent, he could get in some time.

Mr. Chandler didn't think very much of that provision. I explained to him just how it happened

Adams: to be inserted, and some years later, five or six years later, that section was amended to set up a system of watermaster service. The then president of the State Water Commission said in his annual report that apparently Section 37 was originally written merely to get into the bill the principle, which was, of course, the fact.

Baum: What was the basis of your preference for having administrative adjudication rather than judicial?

Adams: Failure of court adjudications to settle water rights in California was the main reason for passing the Water Commission Act. Court adjudications in Colorado had been rather successful but there were still some drawbacks to procedure there. It seemed to me that the experience in administrative adjudications in Wyoming and Nebraska had demonstrated its superiority. I was then not very familiar with the Oregon system.

Baum: Did you have more confidence in the fairness of administrative adjudication rather than adjudication by the courts?

Adams: The difficulty about court adjudication is that you get a mass of biased testimony and it is very difficult to establish the facts. The first thing is to gather the facts, which should be the basis of adjudication.

Baum: The facts would be gathered by the state in either

Baum: case, wouldn't they?

Adams: That's true under the Oregon plan but, as I previously stated, under the California law the state can make the investigation to gather the facts only on reference by the court. Without such reference the proceedings would be in the court and conclusions based on expert testimony which is very likely to be biased.

Baum: But if the facts were gathered by a state agency, why would your preference be for an administrative body to determine the rights rather than a judicial one?

Adams: Well, the original argument was that that was the policy adopted in the disposal of public lands, which was an administrative policy. That the water of the state was the property of the state and should be administered by the state--that it was an administrative process rather than a judicial process.

Baum: In other words, it wasn't private property.

Adams: In Wyoming it was the property of the state and the only private right that could be obtained was the right of use. In some states water was considered to be the property of the public. In California under the present law it is declared to be the property of the people of the state.

Baum: Why did Dr. Pardee insist the other way?

Adams: Well, he had been governor. He was a very astute

Adams: politician, and he had long legislative experience. It was a perfectly natural attitude for him to take, because he believed that the adjudication of water rights was a judicial and not an administrative matter. He was constantly saying that the constitution of the state placed judicial matters in the hands of the courts, or words to that effect.

Baum: Was there any talk of setting up a special water court?

Adams: That was talked of from time to time, but not, as I recall it, just then.

Baum: Did Dr. Mead express any opinion on the bill?

Adams: I sent Dr. Mead a rough draft of the Conservation Commission bill. I have here a letter from him written aboard ship on his way to Australia on October 5, 1912 in which he condemned the bill very severely. He advised me to have nothing whatever to do with it.

Baum: I would think he would have been in favor of it.

Adams: He was very strongly in favor of administrative determination of rights, rather than determination through the courts. I think that's the thing that led to his first reaction against the bill.

Well, the Water Commission Act was passed in 1913 and held up by referendum. It again came before the Commonwealth Club. The section on conservation

Adams: reviewed it very thoroughly. Dr. Pardee was present for at least one meeting; Mr. Cuttle, I think, also. You would be surprised to see how the section divided on passage of that law. Our section reported on it in October, 1914, just before the election. There were majority and minority reports. Let me just read the names of some in favor. C. E. Grunsky, A. E. Chandler, A. L. Cowell, State Engineer W. F. McClure, Charles Wesley Reed, H. Foster Bain, G. M. Homans, Fred H. Fowler, B. A. Etcheverry, Miles Standish, William Thomas, Professor A. M. Kidd of the law faculty over here, Assistant State Engineer Norboe. The minority report opposing the act was signed by Mr. E. F. Treadwell, John D. Galloway, W. B. Bosley, an attorney with P. G. & E., Elwyn W. Stebbins, a geologist, Charles Gilman Hyde, (I'm surprised at that) professor of sanitary engineering at the University, Professor W. L. Jepson, Senator C. M. Belshaw, F. G. Baum, a P. G. & E. man, Mr. A. Burch, and Mr. A. L. Shinn, a lawyer who had much to do with reclamation matters up in the valley. I read over their objections the other day and I'm surprised some of these men signed that, men like Galloway, Jepson, and Hyde.

But the bill passed.

Baum: That's all in the Commonwealth Club Transactions, Volume 9, 1914, pages 581-595.

Adams: Yes, and it got off to a good start. Governor Johnson appointed a very strong commission: William A. Johnstone of San Dimas, Irving Martin, editor of the Stockton Record, and Albert E. Chandler.

Other Recommendations of the State Conservation Commission

Licensing Power Sites

Baum: I would like to know what the State Conservation Commission thought about the problem of power sites.

Adams: That was a very hot subject and came up in the meetings of the Commonwealth Club. One issue was whether there should be permanent licenses for power or for a period of years. Also, the provision that the power companies should not include water rights in their evaluations for rate-making purposes beyond the actual cost of those water rights. Another question in connection with the Water Commission bill which doesn't seem very important, but was rather heated in the meetings of the club, was the fees to be charged for licenses. The opposition made a big objection about this, the great cost to the poor man for filing

Adams: on water.

Baum: How great was that cost?

Adams: The cost wasn't great. It was larger for water for generation of electric power than for irrigation and other purposes. Dr. Pardee's answer was this. "It's going to cost something to carry on the work of this commission. We've got to provide automatic funds for it because a hostile legislature might at any time cut off the funds and hamper the work." There was discussion both ways on the subject, of course.

Baum: Do you think the Conservation Commission was in favor of public development of hydroelectric power?

Adams: The matter didn't come up. Their interest was in public control of the water supply.

Baum: I believe the Conservation Commission recommended that the state use the Cary Act to develop lands.

Adams: A committee of our section cooperated with the commission in drafting a bill under which we could operate in California under the Cary Act and this bill was adopted. Mr. D. W. Ross, former state engineer of Idaho who had administered the Cary Act up in Idaho and was now with the Kuhn project, had worked with the committee. But it was never used in California. There was no reclamation, except possibly in the desert areas along the Colorado River.

Riparian Rights

Baum: I believe the Conservation Commission, on the matter of riparian rights and the wasteful use of water, suggested those rights be condemned and purchased.

Adams: That was considered from time to time, but was entirely impractical.

Baum: Too expensive?

Adams: Yes. I made one little study. A group around Dos Palos who got water from the Miller and Lux system on the West Side wanted to form an irrigation district. I remember at that meeting someone asked Mr. Treadwell if Miller and Lux owned all that water and he said, "Of course we own it all." Well, that sort of nettled me so as a service to the little group I had Harry Barnes go to the assessors' offices in Fresno, Merced, and Stanislaus counties and plot all the riparian lands clear down to Tracy. Riparian lands are the lands lying adjacent to the river that have never been separated from the stream by transfer--there is a provision that lands sold away from the river can still share in the riparian rights, but that has to be in the deed. We prepared a large map and plotted the riparian lands in black. I took that to the people down there and showed them just what they were

Adams: up against.

Baum: How much of the land was riparian, and owned by Miller and Lux?

Adams: I cannot remember the acreage, but what I do remember is that a map of the land along the river showed largely in black--that is, that they were largely riparian lands.

Baum: Riparian rights were a part of the problem the Conservation Commission was considering.

Adams: Yes, but it was evident they couldn't change that by legislation. It could only be done by constitutional amendment, and such an amendment was adopted some years later. That amendment, you know, was before the Supreme Court twice. Mr. Treadwell and those other large riparian right people sat down with men like Mr. Chandler and Samuel C. Wiel and others. Mr. Cowell sat in on it. They worked out the constitutional amendment which was adopted.

Baum: Treadwell sat in on that?

Adams: Oh yes. You can't do those things without consulting the other people. That was later. I think the Herminghaus decision brought it to a head, which was the extreme interpretation of riparian law. Everyone recognized then that something had to be done. The effect of the consitutional amendment was

[illegible]: up against.

[illegible]: How much of the [illegible] Miller and Burt

[illegible]: I cannot remember [illegible], but [illegible] in [illegible] a [illegible] of the [illegible] [illegible] largely in [illegible] [illegible] planning [illegible].

[illegible]: Speaking [illegible] the [illegible] of the opposition the [illegible] resolution was [illegible].

[illegible]: [illegible], but it was evident [illegible] by Jewell [illegible]. [illegible] tional [illegible], and such [illegible] came [illegible] [illegible]. [illegible] before the Supreme Court [illegible]. [illegible] [illegible] other [illegible] [illegible] [illegible] [illegible] like [illegible] [illegible] [illegible] [illegible]. [illegible] constitutional amendment which [illegible].

[illegible]: Treadwell [illegible] on that?

[illegible]: Oh yes. You [illegible] the [illegible] the other [illegible]. That was [illegible]. [illegible] Hemingway [illegible] proposed it [illegible] was the [illegible] [illegible] everyone recognized then that [illegible] to be done. The [illegible] of the [illegible] amendment was

Adams: not to abrogate riparian rights but merely to limit them to reasonable use.

Baum: Did you know Mr. Treadwell?

Adams: Yes. I think I can say I knew him very well. He was very able, very forceful, and very positive in presenting his views. I sat in on some of the discussions leading up to the constitutional amendment, and felt that Mr. Treadwell was very fair in his attitude. Incidentally, Mr. Treadwell performed a fine public service when he wrote a biography of Henry Miller. The title of the book was The Cattle King. He described the early development of irrigation on the west side of the San Joaquin Valley under Henry Miller.

Forest Fire Protection

Adams: I mentioned the work of our conservation section back in 1912, 1913, 1914. One phase of that that was always of interest to me was forestry. I reported at a meeting of the club on what the conservation section had done. The issue was the difference between the State Conservation Commission and the state forester and what should be done in the way of forest fire protection. We did not at that time have a State Board of Forestry except an ex officio board.

Adams: We had a state forester by the name of Mr. G. Morris Homans. He didn't get along at all with Dr. Pardee. He had his own ideas as to what should be done, so there was a rather sharp difference of opinion. They each presented a bill to the legislature. The main issue at the time was fire protection, on what basis it should be accomplished. The Conservation Commission's plan was largely through cooperation with the timber owners. The state forester's plan was largely a matter of setting up forest protection districts and state fire wardens and lookouts, and to carry this work on at the expense of the timber owners.

Baum: Then the one plan was more voluntary and the other more compulsory.

Adams: Yes, that in general was it.

Baum: I should think the compulsory plan would also be more expensive to the timber owners.

Adams: Undoubtedly.

The matter was so important that the section arranged a general conference of timber owners and foresters and the State Conservation Commission in the club rooms for a discussion of the whole question. I asked Mr. Beverly L. Hodghead, who was president of

[illegible] and a [illegible] [illegible] the game of [illegible]
[illegible] Romans. He [illegible] [illegible]
[illegible]. He had [illegible] [illegible] [illegible]
[illegible], so there was [illegible] [illegible] [illegible]
[illegible]. They [illegible] [illegible] [illegible]
[illegible]. [illegible] [illegible] [illegible]
[illegible] which [illegible] it should be [illegible]. [illegible]
[illegible] Dominatorius [illegible] [illegible]
[illegible] with the [illegible] [illegible].
[illegible] [illegible], a [illegible]
[illegible] [illegible] and [illegible]
[illegible], and [illegible] [illegible]
of the [illegible] [illegible].

[illegible] the [illegible] [illegible]
[illegible] comparison.

[illegible] [illegible] [illegible].

[illegible]: [illegible] [illegible] [illegible] a [illegible] [illegible]
[illegible] [illegible].

[illegible]: [illegible].

The [illegible] was so [illegible] [illegible]
[illegible] a [illegible] [illegible] of [illegible]
[illegible] [illegible] [illegible] [illegible]
club [illegible] [illegible] discussion of [illegible]
[illegible] Mr. [illegible] I. Hodgson, [illegible]

Adams: the club, to come in and preside. I remember we had a former state forester, Mr. F. E. Olmsted, Mr. C. R. Johnson, head of the Union Lumber Company, one of our very biggest redwood outfits, Mr. G. X. Wendling and Mr. Miles Standish, both large timber owners. About 15 or 20, as I remember, attended this conference. Mr. Homans wouldn't attend. The evening after that conference he called me up and gave me fits for "meddling in affairs." We had been very good friends.

Incidentally, there was no satisfactory fire protection for years because it seemed impossible to work with Mr. Homans on the subject. It was finally adjusted by making M. B. Pratt of the forestry division of the University, assistant state forester, largely to direct his attention to fire protection. He later became state forester.

Baum: You've always been interested in fire protection, haven't you?

Adams: In forestry. In those days fire protection was the main subject of interest. It revolved largely around the disposal of slash and inflammable material. The cooperative effort was supposed to result in a greater effort by mill owners to take care of slash and the state was to control and insist on it being done.

[illegible]: [illegible] the club, [illegible] come in and preside. I remember [illegible] a former state forester, Mr. T. [illegible] Hammond, [illegible] chairman, head of the [illegible] Lumber company, [illegible] very [illegible] modern profile, Mr. [illegible] Merrill [illegible] and Mr. Ellen [illegible], both [illegible] owners. About [illegible] or [illegible] as a memento. [illegible] [illegible] paper. [illegible] Ladd [illegible]. The [illegible] [illegible] modified [illegible] "modifies in effect." [illegible]

Incidentally, [illegible] was [illegible] [illegible] [illegible] for years because [illegible] [illegible] to work with [illegible]. Years ago [illegible] [illegible] finally [illegible] [illegible] division of [illegible] Investigation, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] state forester.

[illegible]: [illegible] always been interested in [illegible] beyond [illegible]?

[illegible]: In forestry. In [illegible] days [illegible] [illegible] public [illegible] interest. It [illegible] [illegible] the [illegible] of slash and inflammable [illegible]. The [illegible] effort was [illegible] [illegible] greater efforts by mill [illegible] [illegible] and the [illegible] [illegible] and [illegible] [illegible] [illegible] [illegible].

WORK WITH IRRIGATION DISTRICTS

Preparation of Bulletin No. 2 in 1915

Baum: I know you have worked very closely with irrigation districts.

Adams: Yes, down until about 1928. Since then I've been less closely associated with the districts.

Baum: Wasn't a study of irrigation districts one of the first things you undertook when you went back to the Irrigation Investigations in 1910?

Adams: Yes. I began to bring down to date my information about districts organized under the old Wright Act of 1887. I don't recall if I mentioned starting that study. Briefly, I reported for duty under Dr. Mead in 1900. While I was waiting for Mr. Wilson, under whom I was to work, Mr. William Thomas, who was president of the California Water and Forest Association, suggested that I study the old Wright Act districts which had had such disastrous experiences. So I began the collection by mail of data regarding the organization of those districts, endeavoring to get together a complete list of them and the record of their financial transactions and their litigation and their current status. I left the work to go to Washington in 1901 and all that data was laid aside,

[illegible]

[illegible]

Adams: so when I picked up the study of irrigation districts again in 1910, I undertook to bring that information down to date.

I employed a very bright young man by the name of Ray S. Gidney. He was an expert stenographer, a senior student in economics, and had done stenographic work for professors Etcheverry and Chandler in the Department of Irrigation. There were still a number of people living who had had to do with, or were familiar with the organization of some of those early Wright Act districts. I sent Mr. Gidney into the field to interview them and get a complete record of what they had to say because he was such an excellent stenographer and he knew the subject. When the Federal Reserve System was established early in President Wilson's administration, Dr. Adolph Miller, professor of economics at the University, was made a member of the Federal Reserve Board. He took Mr. Gidney with him to Washington as his secretary. Mr. Gidney progressed in the Federal Reserve System and became, I think, at one time head of the Federal Reserve System in Buffalo and other positions in the system and is now Controller of the Currency in Washington.

I had two other assistants for temporary work in gathering information about the financial status

[illegible] so [illegible] I picked [illegible] study of [illegible] [illegible] again in 1921. I was [illegible] to bring it up [illegible] down to date.

I employed a [illegible] bright young man by the [illegible] of Fay C. Hilmer. [illegible] was an exceptionally [illegible] student in [illegible] mathematics, and [illegible] work for professor [illegible] behavior [illegible] Department of Irrigation. [illegible] a number of people living who had been [illegible] lifetime with the [illegible] [illegible] [illegible] [illegible] what they [illegible] say [illegible] absence [illegible] knew the subject. [illegible] [illegible] [illegible] California administration. [illegible] [illegible] of 200 [illegible] the University. [illegible] the federal [illegible] [illegible] [illegible] with him to [illegible] in [illegible]. [illegible] [illegible] [illegible] I did [illegible] [illegible] the federal [illegible] [illegible] Systems in [illegible] and other [illegible] in [illegible] and is now [illegible] of the [illegible] [illegible].

I had two other assistants for [illegible] in [illegible] [illegible] about the [illegible]

Adams: and litigation of some of those districts. Summing it all up, I found that there had been 49 districts organized under the old Wright Act. Twenty-four had never incurred any bond indebtedness. Many had accomplished nothing. The other 25 had incurred indebtedness, some for a good many hundred thousand dollars. Of those 25, only eight were then active, of that eight, two were only nominally active.

In Bulletin 2 (State of California, Department of Engineering, Bulletin 2, Irrigation Districts in California, 1887-1915, 1916.) I completed the study of the Wright Act districts and also included a study of several districts that had been organized in recent years. The last district organized under the original Wright Act was in 1895. Until 1909 no other districts were organized.

Irrigation District Legislation

Baum: What changes in irrigation district law made it possible for irrigation districts to be successful?

Adams: Those changes, up to 1928 which was the end of the period when I was most active in irrigation district work, are outlined in detail in Bulletin 2 of the State Department of Engineering and Bulletin 21 of the Division of Engineering and Irrigation. They

Adams: were the same department, different names.

Bridgeford Act of 1897

Adams: The Wright Act experience had been so disastrous that portions of the law were revised in 1897 by the Bridgeford Act. The changes were fundamental. Under the original law fifty or a majority of the owners of land in any area proposed to be organized could file a petition with the board of supervisors. If approved, they could carry an election by a majority vote. They had no restrictions whatever on the issuance of bonds or assessments. Consequently much of the financing was unsound. Some of the districts would have been feasible under later conditions, some were entirely speculative.

Baum: Were they able to sell their bonds?

Adams: In the last decades of the 19th century financing of irrigation developments was relatively easy. A good deal of the money came from foreign sources, I believe from England.

Records of flow of streams were meager. The state engineer, William Ham Hall, had started the gauging of streams back in the '80's but between that and about 1902 or 1903, there were very few gaugings made. The Geological Survey had made some. They

Adams: became more active in the work about the same time the Irrigation Investigations were started in California because of contributions from the California Water and Forest Association. When the Wright Act districts were organized, stream flow information was totally inadequate on which to base the estimate of a safe water supply.

Baum: Then they were going ahead without adequate information, and probably without adequate water supply.

Adams: Yes. Lack of water was the main cause of failure.

Baum: More than dishonest promotion?

Adams: Oh yes. I don't recall that there was much dishonesty. There was some manipulation and I am sure some evasion of the real terms of the law. I guess you could call this dishonest. For instance, in one district--the old Sunset District in the San Joaquin Valley--an owner of a section of land divided it into small holdings and gave away or sold different parcels at nominal prices to people who would agree to vote for organization. That way the organization of the district was carried and shortly after that the bond issue of $2,000,000 was voted. I believe there were some of the other old districts that were equally questionable. I gave a history of the old speculative districts in Bulletin No. 2.

Adams: The changes made in the law in 1897 were basic with reference both to organization and to issuance of bonds. For petitioning for organization of a district, a majority of the landowners representing a majority of the value of the land was necessary. The board of directors could not call an election for the issuance of bonds without having previously received a petition for the submission of that bond issue signed by a majority of owners of a majority of the value of the land. So a brake was placed on the organization of districts. I was informed by someone who knew the history of that legislation that the purpose was to stop the organization of any more districts.

Baum: At that time large landowners were against the districts, weren't they?

Adams: Many were, yes.

Improving the Market for Bonds

Adams: In 1909 South San Joaquin and Oakdale districts were formed. They employed competent engineers, outlined a system of works, voted bonds, but ran up against the absence of a bond market.

Baum: This was because of the failure of the previous districts.

Adams: Yes. They finally were able to let their contracts by making the contractors find a market for the bonds.

The Wright Act and the Bridgeford Act provided that bonds should bear 5% interest and could not be sold for less than par. District bonds could not be sold at that price. The arrangement was something like this. The contractor would find a bond dealer who would undertake to dispose of the bonds at a certain price, say, at 75-80% of par. Then the contractor would charge enough more for the work he did to allow him to rebate to the bond dealer the difference between 75-80% of par and par which was the amount paid to the district by the bond dealer. This was a clear evasion of law and was generally so understood by all parties concerned, but there was no other way in which a district could dispose of its bonds.

Baum: So they just raised the price of the construction.

Adams: Yes.

South San Joaquin and Oakdale districts made an attempt to create a better market for the bonds. They drafted a law which set up an irrigation district bond commission--this was early in 1911--composed of the state engineer, the attorney general, and the state superintendent of banks. This commission was

Adams: to investigate any irrigation district desiring to issue bonds and if it found that the amount of bonds did not exceed 60% of the value of the water rights, lands, and systems, their bonds could be registered with the state controller. They thought that would help. Well, it was ineffective.

Baum: Was there any opposition to this change at that time?

Adams: I think not. Mr. L. L. Dennett, attorney for Modesto District, was most prominent in drafting that legislation.

Baum: Did you know Dennett?

Adams: Oh, very well. I got acquainted with him in Modesto in 1904. He was a very enthusiastic man. Very earnest and very determined and a very friendly man.

Baum: Would you call Dennett conservative or liberal?

Adams: He was after what he wanted. There were no issues of that type, conservative or liberal, involved in this legislation. He was determined to improve conditions and find a market for these bonds.

That law was ineffective. A movement was started to improve it. I don't recall exactly the inception, but in November, 1911 Governor Johnson called a general conference at Stockton of interested irrigation districts to consider improved legislation. Prior to that the matter had come before the Commonwealth Club

Adams: and several meetings of the club were devoted to the subject.

Baum: Were you present?

Adams: Yes. The subject was "Marketing Irrigation Bonds". Among those who took part in the discussion before the club were Mr. Dennett; Attorney General Webb; State Engineer Nathaniel Ellery; State Superintendent of Banks W. R. Williams; A. T. Brock, the San Francisco representative of Halsey and Co.; James K. Lynch of the First National Bank; W. J. Dutton of Fireman's Fund Insurance Co.; Edmund Duryea, engineer for South San Joaquin District; John D. Galloway, civil engineer; Mr. C. E. Grunsky; and Mr. E. R. Zion. I presented in preliminary form a statistical abstract of the old Wright districts.

After the discussions of the club the president appointed a committee to prepare recommendations. This committee consisted of James K. Lynch, chairman; Henry G. Meyer, banker; and A. T. Brock. At their request A. E. Chandler; John S. Drum, banker; W. L. Hathaway of the New York Life Insurance Company; Samuel C. Wiel and I were asked to work with the committee, and we joined in their report. This committee prepared a report to be submitted to the conference called by Governor Johnson in Stockton.

[illegible]

[illegible]

[illegible]

[illegible]

Adams: There was a great deal of controversy as to the required 5% interest and also as to the 60% of the total value of property back of the bonds. School districts, as I recall it, could issue bonds up to 15% of the value of the property in the school district. Other institutions were permitted to issue bonds up to, I think, only 5% of their assessed valuation. So 60% was felt to be too high. The answer of the districts was that with a water supply available, the value would be tremendously increased, which was, of course, true, if they carried through the construction and it was a success.

This committee presented its report to the conference at Stockton. We made several suggestions. One was that the districts should be allowed to issue bonds at 6%. Another was that no district should be allowed to dispose of bonds without approval of the commission. Another was that the specific duties of the state engineer, the attorney-general, and the superintendent of banks should be spelled out in the law. Another was that districts could sell bonds for less than par on the approval of the commission. I'm sure that report had a great deal of influence in the drafting of the amendment to the 1911 law, passed in 1913.

Adam : There was a great deal of controversy as to the required 3% interest and also as to the 80% of the total value of property - not of the bonds. Judge disagreed, as I recall it, could issue bonds up to 1% of the value of the property in the school district. Other judges were permitted to issue bonds up to, I think, only 5% of their assessed valuation. So 3% was still to be too high. The answer of the districts was that with a water or gas availability, the value would be tremendously increased, which was, of course, the case, if they could get through the constitutionality - and it was a success.

This controversy was resolved in the conference at Boulder. We made several recommendations. One was that the statutes should be amended to allow bonds 5%. Another was that no bonds should be allowed to elapse or become without approval of the commission. Another was that the specific duties of the state engineer, the attorney-general, and the supreme court of Colorado should be spelled out in the law. Another was that districts could sell bonds for less than par at the approval of the commission. I'm sure that there had been a great deal of influence in the drafting of the amendments to the 1921 law, passed in 1923.

Baum: Did you agree with those suggestions?

Adams: I was a member of the committee and joined in the report. In view of the eminence of the other members of the committee, my part in the drafting of the report must have been a small one. In those days I used to be east frequently and I was in Chicago at the time the report was presented to the meeting at Stockton. I made contacts over a number of years with investment bankers in Denver, Chicago, Cleveland, New York, with the view of getting the attitude of the investment market for irrigation district bonds. They had been in disrepute for so long that I wanted to see what help I could get in redrafting the law. The only separate thing I remember in connection with this final report of the committee was that I sent a wire from Chicago to the committee recommending 6% bonds and that they should be sold at the market value rather than at par.

Baum: Would these investment bankers you talked to have been willing to handle irrigation district bonds with these modifications?

Adams: None of them would say that at that time. One house in Chicago had handled a lot of the Colorado irrigation district bonds and their investors had lost lots of money. They were very anxious to see conditions improve.

[illegible] you agree with those suggestions.

[illegible] was a member of the committee and joined in the report. In view of the eminence of the other members of the committee, my part in the drafting of the report must have been small. In those days I used to be sort of [illegible] was [illegible] the time the report appeared [illegible] working on Toronto. [illegible] were [illegible] years [illegible] investment [illegible] New York, with the [illegible] the investment [illegible] they had been [illegible] could [illegible] only because [illegible] I mean [illegible] final report of the committee was [illegible] from [illegible] to the committee [illegible] bonds and that they should be [illegible] rather than as [illegible].

[illegible] Would those investment [illegible] been willing to have legislation [illegible] with these difficulties?

[illegible] Some of them would [illegible] that time. [illegible] in Chicago [illegible] handled a lot of the [illegible] district bonds and their investors [illegible] money. They were very anxious to get conditions [illegible].

Adams: In another investment house in Chicago, the man I talked to was quite interested. He said, "I wish you'd come to lunch with several of us and talk the thing over." So I did that the same day. They knew practically nothing about these bonds, but I was surprised at the great interest they showed. I told them of the improvements we were trying to make in our irrigation district law. One of those who attended that luncheon became a partner in a large New York firm which took a large issue of one of our district's bonds a little later. That man was Mr. Dillon and the firm with which he became affiliated was Dillon, Reed and Company.

Bond Certification Commission Act of 1913

Adams: The Bond Certification Commission Act which was passed in 1913 as a substitute for the 1911 act provided more than merely for the registration of the bonds. It provided for the commission to make an investigation and if they found all conditions favorable and the total amount of proposed bonds did not exceed 60% of the available border rights and lands and other properties, the bonds could be certified by the state controller as legal investments for trust companies, savings and commercial banks, investment funds, insurance companies, investment of

Adams: school funds, and other institutions. You will recall that one of the suggestions of the Commonwealth committee was that no irrigation district could issue bonds without the approval of the commission. The law as passed did not definitely give the commission the power to veto a bond issue, but in reality they did because if they reported unfavorably, there was no likelihood of the bonds being sold.

Baum: Did they report before or after the bond election?

Adams: Before the bonds were voted. Under the original act they reported after the bonds were voted.

That Bond Certification Commission Act has, of course, been of tremendous help to the districts. It has been amended a number of times. One important amendment gave the commission power to take over the affairs of irrigation districts that had defaulted. That came about during the depression in the early '30's. The commission did take over control of some districts during that period. I should mention that I had nothing whatever to do with preparation of irrigation district legislation after the early 1920's and a number of the very important amendments to the Bond Commission Act have been passed since then. They included the one mentioned.

There was one matter during that depression that

Adam: school funds, and other facilities. [illegible] that one of the suggest one of the [illegible] committee was that on legislation [illegible] bonds without the approval of the [illegible] for as people did not [illegible] the power to vote a bond issue, but [illegible] did become [illegible] property [illegible]. There [illegible] no likelihood of the [illegible].

[illegible]: If they report below [illegible] below the bonds were [illegible] they [illegible] other [illegible].

[illegible]: [illegible] Department [illegible] [illegible]. It has been [illegible] [illegible]. The [illegible] amendment [illegible] committee [illegible] efforts of [illegible] that [illegible]. The [illegible] to turn the [illegible] right. The commission did [illegible] distribute [illegible] that [illegible]. I should [illegible] I and [illegible] whatever [illegible] [illegible] [illegible] and a number of the very [illegible] [illegible] School Commission [illegible] have [illegible] [illegible] included [illegible] mentioned.

There [illegible] the matter during [illegible] that

Adams: always troubled me. Enterprises and industries of all kinds went into bankruptcy and irrigation districts and irrigation companies were not an exception. The law provided what were in substance bankruptcy proceedings by which the affairs of districts could be worked out by the Reconstruction Finance Corporation and reviewed in the courts. They appointed as their agent in working out adjustments the secretary of the California Irrigation Districts Association. It seemed to me that it was an unfair situation here in California that the secretary of the Irrigation Districts Association should be the one to work out the refinancing.

Baum: In other words, his committments were to the irrigation districts rather than being objective.

Adams: I never felt that was a satisfactory arrangement, but I never made a thorough study of that refinancing. A study of that was made by Wells Hutchins, and it was published as a Department of Agriculture bulletin.

Increasing State Supervision Over Organization

Adams: There was another phase of state control which was important. It was the phase which first intrigued me. That had to do with the state engineer passing on the organization of districts. It was easy, as I explained to you, for a district to be formed under

Adams: always troubled me. Enterprises are laudable of all with a work into bankruptcy and liquidation disorder and liquidation companies were not an exception. The law provided what were in substance bankruptcy proceedings by which the affairs of insolvent companies were worked out by the Receiver, Finance Commission and revolved in 60 months. Only a so-called agent in working out adjustments was the secretary of the California Railroad Commission. It seemed to me that it was a [illegible] Commission here in California that the [illegible] of the railroad [illegible] the petitioner.

Weber: In other words, the [illegible] were to liquidate [illegible] been the objective.

Adams: I never felt that [illegible] a satisfactory [illegible], but I never made a thorough study of [illegible]. A study of that was made by [illegible], and it was published as a [illegible] of [illegible].

Increasing State Supervision Over Organization

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Adams: the Wright Act. Fifty or a majority of holders of land could propose a district. There was no investigation. That's why so many districts were formed that were not feasible.

It was perfectly evident that the state should exercise control over organization. Idaho had a measure of control. Its law made it the duty of the state engineer to make an investigation of an irrigation district and file his report with the district, so that the public would have full information as to engineering and other feasibility.

Baum: Prior to organization?

Adams: Yes. That law was drafted by D. W. Ross, who was state engineer of Idaho and later the man who became chief engineer of the Kuhn project in California.

How the change in California came about was this. I was in Sacramento to attend a meeting of the irrigation committee of the legislature and I met several members of the Irrigation Districts Association, including Mr. Dennett and A. L. Cowell, who had been active in the formation of the South San Joaquin District. They had in mind favoring a bill that would give the Irrigation Districts Association authority to pass on the organization of new districts. That didn't seem to me a desirable procedure. Its

Adams: the Twight Act. Fifty or a majority of [illegible] land could process a district. There was no [illegible] election. That's why so many [illegible] that were not [illegible].

It was [illegible] evident that the state [illegible] exercise control over irrigation. [illegible] measure of control. The law made it [illegible] the state engineer to make an investigation of an irrigation district [illegible] the district, so that [illegible] have full information [illegible].

Adams: Return to organized [illegible].

Ada: Yes. What law was [illegible]. [illegible] electrification of [illegible] the [illegible] official [illegible] of the [illegible] project in [illegible].

[illegible] change in [illegible] was [illegible].

I was in Washington to attend a meeting of the Invisible Government of the Legislature and I met many pal members of the Irrigation District Association, including Mr. Bennett and A. L. [illegible], [illegible] active in the formation of the Twin [illegible] District. They had in mind favorable [illegible] would give the Irrigation District Association authority to pass on the organization of new districts. That didn't seem to me a desirable proposal [illegible]. The

Adams: constitutionality was doubtful. I suggested that the state engineer be given the same authority as the state engineer in Idaho had. I had with me the Idaho law. So this group came up with me to my room in the Sacramento Hotel and together we drafted a bill providing that when a petition for formation of a district was filed with the board of supervisors, a copy should be sent to the state engineer, and prior to consideration by the supervisors the state engineer should report as to whether he found any conditions within the proposed district which would justify him in reporting adversely. State Engineer McClure was heartily in agreement with that legislation, and it was passed in 1913.

Baum: Did Mr. McClure have an adequate staff to handle jobs like that?

Adams: He had one assistant state engineer, an accountant, probably two or three other employees including some stenographers. That's about all he had. As I recall it, his duties were primarily with public institutions and with roads. The state used to make appropriations for construction of roads. That was before the Highway Act.

Baum: I can't imagine how Mr. McClure could handle all that work without a larger staff.

Adams: On receiving petitions for organization, Mr. McClure in the majority of the instances personally went over the area, sometimes with the assistant state engineer. In other districts he assigned the duty to the assistant state engineer. In either case he almost invariably asked me to go along and at the conclusion of the field trip to give him my views in writing. I gathered available data regarding the economic and agricultural feasibility.

In 1915 that law was made a little more specific. We went as far as we thought we could in the 1913 wording. In 1915 we got a little bolder and instead of providing that the state engineer should report as to whether any condition existed which warranted him reporting unfavorably, it definitely required the state engineer to report on the feasibility of the project, which was a little stronger language.

Baum: Including economic feasibility?

Adams: Economic feasibility wasn't mentioned. Of course, the state engineer always considered all phases of the project.

That law eventually was strengthened to require the districts to file with the state engineer their engineering plans. It gave the state engineer authority to make such inspections of their construction program as he thought necessary, and to approve or disapprove.

Adams: He had that authority also as a member of the State Bond Certification Commission. So the state engineer came to have very definite authority over districts.

There was one thing we had to include. The districts objected to the state engineer having complete authority over organization so an insertion was made providing that if the state engineer found the project infeasible, the supervisors should dismiss the action unless petitioned by three-fourths of the owners of land in the district to approve the petition for organization. I think only one district, that was out on the Mojave Desert, made use of that provision. The district was formed, but didn't succeed.

Withholding of Water from Appropriation Pending Formation of a Proposed District

Adams: An amendment was adopted in 1917 that brought the state engineer into even closer relationship with the irrigation districts. The idea for this occurred to me while working with a local committee planning the formation of what later became the Nevada Irrigation District. The amendment provided that when he considered it in the public interest the state engineer could make preliminary investigations and surveys of a proposed district, and that pending completion of

Ada [illegible]: We had that authority also as a member of the State and Certification [illegible] Union. So the state agencies came to have very definite authority over [illegible].

There was [illegible] to include. The district objected to the [illegible] complete authority over organization so as to [illegible] made [illegible] that [illegible] the project [illegible]. The conservators should [illegible] the [illegible] [illegible] of three-fourths of the [illegible] of land in the district in order [illegible] for organization. I think [illegible] that was not in the [illegible] Department, [illegible] [illegible] vision. The district was formed, [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]: An amendment [illegible] provided [illegible] [illegible] [illegible] the [illegible] a district. The idea for [illegible] [illegible] to [illegible] with a local committee [illegible] the [illegible] of what [illegible] [illegible] district. The amendment provided that [illegible] [illegible] [illegible] the public interest [illegible] could make preliminary investigation [illegible] [illegible] a proposed district, and that [illegible] [illegible]

Adams: these investigations and surveys, he could withdraw from appropriation any unappropriated water that might be needed in that proposed district.

There had long been a feeling in the foothill areas that they were likely to be deprived of their water supply by its adverse use for power development. This was the primary reason for including the provision authorizing the state engineer to withhold appropriations of unappropriated water pending the completion of his preliminary investigation.

That same principle has been followed in connection with the State Water Plan. Rather than withdrawing the water from appropriation, the state files on the water and holds those filings for ultimate disposition. The major supplies for the Central Valley Project and the State Water Plan were filed on by the State Department of Finance and then held for assignment when the projects were undertaken. I'm not sure of the extent to which this amendment providing for withholding water from appropriation was used. I do remember that the state engineer made such an investigation in the Nevada District.

Baum: Where did you get this idea from?

Adams: The way you get ideas is to be on the ground and study the situation and things occur to you. You don't get them in the office, you get them out in

[illegible] these investigations and surveys, he or the [illegible]
[illegible] appropriate water [illegible]
[illegible] be needed in that proposed district.

[illegible] in the foothill
areas where [illegible] development of irrigation
water supply by the [illegible] development.
This was the only [illegible]
[illegible] supplying the [illegible] economic-
[illegible] of proposed [illegible]
[illegible] conditions [illegible].

[illegible] in connection
[illegible] the [illegible]
[illegible] water from a [illegible]
[illegible] of [illegible]
[illegible]. The major [illegible]
[illegible] and [illegible]
[illegible] the [illegible]
[illegible] when the [illegible]
[illegible] to the extent [illegible]
[illegible] the [illegible]
[illegible] to [illegible]
[illegible] such an investigation [illegible].

[illegible]

[illegible] way, [illegible] idea [illegible]
[illegible] the [illegible]
[illegible] in the [illegible], you [illegible]

Adams: the field.

Baum: Well, many ideas come from studying what other areas have done about similar problems, don't they?

Adams: Oh, certainly, and my business was to be familiar as much as I could with affairs elsewhere.

Making Formation of a District Easier

Adams: There was one change in organization that I thought was important at the time and which I did not like. It came up when Merced District was being promoted. The 1897 amendment to the Wright Act required a petition for organization by a majority of holders of land representing a majority in value of the land and it required a two-thirds vote for organization. When Merced District was being proposed, they knew they were going to have difficulty getting the required signatures representing a majority of value of land. The Crocker-Huffman Land and Water Company had a small system, and they were interested in selling their system to the district. I think they suggested the man who was appointed to conduct the campaign for formation,

Adams: Walter Wagner, who later became secretary of the Irrigation Districts Association.

The change was this, 500 owners of land representing 20% in the value of the land could propose the formation of a district. It was proposed that a majority vote on organization could carry a district and it resulted in quite a fight in the legislature. A law was passed providing for a majority vote. It went to referendum, it was that important, but it carried.

Baum: Who took it to referendum? What interests were so opposed to the change?

Adams: I don't recall. It was not only voters in Merced District, but all over the state. Other districts which were not anxious to see too many districts formed.

Baum: Do you mean some districts were opposed to competition from other districts?

Adams: I think the feeling was more that if the law made it too easy to form irrigation districts, more infeasible districts would be organized and the old troubles of early days might be repeated and the market for irrigation district bonds again upset. However, I am a little hazy about the arguments pro and con.

Adams: Incidentally, several years later someone in the Irrigation Districts Association proposed that the association should be made a state body with authority to tax irrigation districts and assess new districts to gather funds with which to guarantee irrigation district bonds. But that was not passed.

Other Legislation

Adams: In 1913 a constitutional amendment was adopted authorizing the legislature to exercise such control over irrigation districts as in its judgment was in the public interest. It was that constitutional amendment that really gave the state engineer and the Bond Certification Commission the control they had.

Baum: Did the districts take kindly to this state supervision?

Adams: There was some opposition from time to time. They liked to take care of their own affairs, but the benefits from this regulation were so obvious that the opposition was overcome. I doubt if any legislation was passed over the opposition of the Irrigation Districts Association, so I think it was a few individual districts that voiced opposition.

What we've been talking about mainly so far

[illegible]

Adams: are districts organized under the California Irrigation District Act. At the request of state engineer McClure, I generally went over some of these other acts while they've been in the legislature and made comments on them, but had no important part in them. In fact, I don't want to leave the impression that I had too much to do with the irrigation legislation, although of course I was interested in it and I devoted much of my time to that study. I was primarily interested in obtaining state control.

I remember our Commonwealth irrigation section used to review every act introduced in the legislature with reference to water. That was before and early in the 1920's. As chairman of the section during that period, I would transmit the conclusions and comments to the irrigation committees of the legislature. At Mr. McClure's request I used to attend almost all the meetings of the irrigation committees of the assembly and senate during that particular period, so I was on intimate terms with the new members of the committees and especially with the chairmen.

Baum: Who were the chairmen?

Adams: Well, Mr. Dennett was chairman of the assembly committee and then he went up to the senate and was

Adams: chairman of the senate committee. P. H. Griffin of Modesto was chairman of the senate committee at one time. We'd work out our ideas. Sometimes Mr. Cowell and I would frame the legislation and take it up to the committees. Ultimately it would get into the hopper and it would generally go through.

The Irrigation Districts Assodation in the early days had little to do with the legislation, but individual members like Mr. Cowell and Mr. Dennett did.

Baum: Why was that?

Adams: It was a small association, there were not so many districts. Later the attorneys for the various districts were very active in the Irrigation Districts Association and legislation was referred to them and in some cases drafted by them. After they became very active I had very little to do with the matter. It was during Mr. McClure's administration that I was active.

Baum: How likely were the senate and assembly committees to accept the recommendations of the Commonwealth Club?

Adams: Oh, they received them. They were very cordial about it. Sometimes I think our section took itself a little too seriously. We had a good batting average.

I remember one time, there were quite a number of bills dealing with closely related subjects introduced in the assembly or Senate, I don't remember. I was meeting with the committee. Mr. Dennett, the chairman, said to me, "You take all these bills and put them in one bill." And I did, it was simply a routine matter. That shows our cordial relations.

Baum: Where did these bills originate usually?

Adams: From the people who wanted to make use of the legislation. There were many amendments to the act to meet some particular situation which couldn't be met under the law.

I remember one amusing incident. Under the California Irrigation District Act, land is supposed to be assessed at its full cash value, not including improvements. Incidentally, there's a field for a very interesting study there in connection with the wide variation in the way they interpret that law. In some states irrigation district assessments are made on a basis of benefits, as they are in our

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Adams: reclamation districts. A little district up in the northern Sacramento Valley had a situation which they thought could be improved if they could levy assessments according to benefits. Mr. McClure and I were going over that and he suggested that I prepare an alternative method of assessment allowing districts under certain conditions to assess on a benefit basis. I did that. I consulted a number of attorneys on the thing before I had it in final shape.

Then Mr. McClure asked me if I wouldn't take that before the Irrigation Districts Association and get their endorsement because it was very difficult to get a bill through that they opposed and quite easy if they approved it. So I did that at a meeting up at Sacramento. There was present a very interesting character by the name of Judge John Fairweather. He lived in the area and had, I believe, a part in the formation of the Alta Irrigation District, in Fresno County, under the old Wright Act. He was one of these archconservatives regarding changes in the Irrigation District law. He ran a little newspaper down there, was justice of the peace, always went to the meetings of the Irrigation Congress and later to the meetings of the Irrigation Districts Association. He always

reclamation district. A little clubbist up in the northern Sacramento Valley and [illegible] other they thought could be improved if they [illegible] low assessments were distributed [illegible] and I were not over [illegible] I happen [illegible] allowing [illegible] [illegible] a number [illegible] in final [illegible].

Then Mr. [illegible] asked [illegible] the [illegible] and yet their [illegible] [illegible] [illegible] and quite [illegible] [illegible] a [illegible] [illegible] a very [illegible] [illegible] John [illegible]. [illegible] I believe. [illegible] Irrigation District, in Tehama County, [illegible] old [illegible]. [illegible] one of those [illegible] vative [illegible] law. He was a little [illegible] justice of the peace, always [illegible] of the [illegible] and later [illegible] of the [illegible] Irrigation Association [illegible].

Adams: had something to say and he usually was opposed.

When I outlined this proposed alternative method of assessments, he was on his feet immediately opposing it. There was quite a discussion and the judge moved that the association do not approve it. That was carried. Then he got on his feet and said, "Now I want to move that this association disapprove it." That was carried. That was just a little incident. It wasn't too important that it be passed, but it would have helped the situation in that district and might have helped some others.

Helping to Organize Districts

Baum: When was the increase in the organization of new districts?

Adams: The big increase started in 1915 and reached its peak in 1920. It seemed to me everyone wanted to form an irrigation district then. Many communities asked me to meet with them and because I went on so many field trips with the state engineer I was pretty busy trying to keep up with the job. Many of the requests to meet with communities came in those days through the local farm advisors.

Baum: Was this part of your official job?

Adams: Yes.

had something to say and he usually [illegible]

Then I outlined th[illegible] proposed alternative method of agreements, he was on his feet [illegible] opposing it. There was quite a discussion on and the judge [illegible] that the associat[illegible] [illegible]. That [illegible]. [illegible] I want to move this [illegible] [illegible] example. [illegible] that was [illegible] a little [illegible]. It wasn't [illegible] and [illegible].

[illegible]

[illegible] was the [illegible]

[illegible] second [illegible] used to [illegible] with [illegible] many [illegible] they tried to keep up with the job. [illegible] of the [illegible] to meet with committees [illegible] days [illegible] the local [illegible].

What [illegible] of your official job?

[illegible]

Baum: Did these communities want you to advise them on how to organize a district or...

Adams: Yes.

Baum: ...or whether it would be feasible to form one?

Adams: Well, sometimes both. The farm advisors were very active in promoting the welfare of the communities. Where they found they needed irrigation development, they began to emphasize that. They would invite me to come in, meet with the committee, go over the ground, consider what their water supply was, and so forth. Gradually interest grew and we'd have a general meeting and I would explain fully the procedure.

I remember up at Woodland, a committee there wanted to form a district to get storage. Cache Creek was dependent on the flow from Clear Lake and that was insufficient many seasons, especially with the increase in rice growing in that area. There was a reservoir site available. The chairman of the local water committee and the farm advisor asked me to meet with them. We had a general meeting. A committee was appointed and we went over the whole area to be included. I remember sitting down and writing sub rosa a good deal of their newspaper publicity. The state engineer had asked me especially to go over and assist that community.

Adams: That was the type of work I had a chance to do. It was a privilege, very interesting.

Baum: Was your work in the area of promoting the district?

Adams: No, I absolutely had nothing to do with promotion. Helping a community with their publicity was as near as I ever came to promoting a district. I stayed strictly away from promotion. I limited myself to outlining the procedures under the district law and the opportunities under other laws. There were by that time a number of other statutes under which they could organize.

I did go a little farther in the case of Merced District. That was brought to my attention by the local committee and by the chairman of the irrigation committee of the assembly, who lived in that area. He published a little paper down at Livingston. I met with him and a local committee and wrote a resolution, which was passed by the committee, calling on the state engineer to make a preliminary investigation for the formation of an irrigation district there. In preparing this resolution I had in mind the 1917 amendment authorizing the state engineer to make preliminary examinations of proposed irrigation districts. This was done and the state engineer passed on to me the preparation of the report on

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Adams: which the organization of the district was based. With a district formed, money could be raised by assessment to pay for a complete engineering investigation, preparation of plans, and estimates of cost.

Irrigation Districts Compared to Other Districts

Baum: I take it that you were pretty enthusiastic about this method of organizing irrigation facilities.

Adams: I was tremendously interested in irrigation districts and anything that would advance agriculture in the state, and I was fully committed to the district as a means of accomplishing that.

Baum: You preferred it to other types of districts that might have been organized?

Adams: Not necessarily. If there had not been a need or a desire for other types of districts, laws providing for them would not have been passed. The pattern of land ownership or the extent of urban population are among the factors that determine the type of district to be used. I never expressed a preference for one type of district over another. My activities, however, were primarily concerned with districts organized under the California Irrigation District Act, although I had some contact with other types of districts.

Adams: Of course, in the south the usual procedure was through mutual water companies. In the San Joaquin Valley in Fresno, Tulare and Kings counties there were many farmers' cooperative irrigation companies, mostly organized at an early date. In the Kern River area public utility was the principal form. In the south a few of the mutual water companies changed over to irrigation districts--Imperial Valley being the largest area in which this was done. In the Sacramento and San Joaquin valleys some of the utilities and cooperative committees were gradually changed over to irrigation districts.

In early days cooperative and mutual companies involved a very low cost and could easily be financed by the farmers or, in the case of mutual water companies, by the land development company. Irrigation districts provide a means for financing new construction or buying out utilities not available to mutual water companies and utilities because of the authority given to districts to levy taxes or assessments.

Baum: Why couldn't privately-owned public utilities do the job adequately?

Adams: That's a long story. The constitution made water available for appropriation and sale for public use.

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Sam: Why couldn't privately-owned public utilities do the job adequately?

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Adams: In early days public utilities usually disposed of water under water right contracts. That method caused a tremendous amount of friction. Many of the contracts were unfair. There was a good deal of litigation about them. There was no adequate state regulation of those utilities at that time. Agriculture can't stand too many people making a profit on the side out of the irrigation system. I always felt there was no place for profit to anyone other than the user of water, and that was the basis of my feeling that the district form of organization was the superior plan.

Baum: It sounds like the farm advisors also were enthusiastic about irrigation districts.

Adams: Perhaps I have overemphasized the part the farm advisors had in the organization of irrigation districts. Probably only seven or eight of them did, as I remember. All of them, however, were interested in the irrigation problems of their county. Whenever I went into a county in connection with the organization or operation of an irrigation distric I always kept in close touch with the farm advisor and found him much interested.

There are other reasons than those given for organizing under the California Irrigation District Act. Under this act the procedure for financing,

Adams: In early days public utilities usually disposed of water under water right contracts. That method caused a tremendous amount of trouble. Many of the contracts were unfair. There was a good deal of litigation about them. There was no adequate state regulation of those utilities at that time. Legislature could stand too many people making a profit on the side out of the legislation water. Litigation felt there was no place for profit to anyone other than the water user. And this was the basis of my feeling that the classic form of organization was a public one.

Baum: It would like to [illegible] discriminate such litigation [illegible].

Adams: Perhaps I by overemphasized the [illegible] advisory and in the organization of [illegible] districts. Those by only seven [illegible] [illegible], as a [illegible]. All of them, however, [illegible] interested in the irrigation problems of their county. However, I went into a county in connection with the organization or operation of [illegible] I always found it close to me with the farmer [illegible] and found him much interested.

There are other reasons that those [illegible] organizing under the California irrigation district. Under this act the procedure is [illegible].

Adams: construction, and management has been worked out over the years much more fully than the other types of districts. In some districts the procedure was much more simple than under the California Irrigation District Act. For instance, some made use of county officials to levy and collect assessments.

Baum: I understand that now other forms of districts are often preferred because voting is proportional to value of land held.

Kern River Water Storage District

Adams: Well, an example of that is the situation in Kern County. In 1919 I was asked to go down to the Weed Patch country, south of Bakersfield, principally the Arvin area, to discuss the organization of irrigation districts. I made many trips down there, had numerous conferences.

The situation was this, the canals carrying water to the irrigated fields north and south of Bakersfield, except at the extreme lower end, were all controlled by Kern County Land Company and operated as utilities. At the lower end, around Buena Vista Lake, Miller and Lux had large properties. The supply was inadequate for the entire Kern River area and they looked forward to storage on the Kern.

[illegible] unsubsidized, and management has been worked out over the years much more fully than the other types of districts. In some districts the procedure was much more [illegible] than under the California Irrigation District Act. [illegible] Imperial County, [illegible] County, [illegible] to levy and collect [illegible] assessments. [illegible] low [illegible] of districts [illegible] have often [illegible] [illegible] to value of land [illegible].

Keen [illegible]

[illegible] a supply [illegible] County. [illegible] I was asked [illegible] Imperial County, [illegible] Davis [illegible], to discuss the organization [illegible] distribution. [illegible] many trips [illegible] another [illegible].

The situation was this. [illegible] water by the Imperial Valley [illegible] Mexicanfield, [illegible] at the extreme [illegible] all commanded by [illegible] County [illegible] operated by utilities. [illegible] Coachella Valley [illegible], either one [illegible] The supply was inadequate for [illegible] [illegible] and I was looked forward to [illegible] [illegible].

Adams: They knew there was a good site available at Isabella. Some of the ditches had early priorities, some late, and farmers under those having late priorities were agitating for some movement that would bring storage. What was being discussed at that time was a district under the California Irrigation Districts Act.

A little later Mr. A. Lincoln Fellows, who was then in the Irrigation Investigations office under Dr. Fortier, made a general study at the expense of the Department of Agriculture and proposed the formation of an irrigation district. That was turned down, never went to a vote.

There were in the area a number of communities subdivided into small holdings. Edison was one of them. The irrigation district law provides that all electors shall vote, not only landowners. The Kern County Land Company owned a lot of land that would be brought into the district and there were many others who owned large areas. Finally a meeting was held for them to reach a conclusion as to whether they should form under the Irrigation District Act or under the Water Storage Act. Professor Etcheverry had made investigations down there, I think, for the Kern County Land Company and he had proposed a water storage district. He was at that meeting to outline

Lamar: They knew there was a good site available at Lake Ile. Some of the citizens had early priorities, some late, and farmers under those priorities were agitating for some movement that would bring storage. What was not discussed at that time was a district under the Irrigation Rehabilitation Districts Act.

A little later Mr. A. Van Olin Allen, who was then in the Irrigation Investigations Office under Dr. Fortier, made a comprehensive study of the resource of the Department of Agriculture and proposed the formation of an irrigation district. That was turned down, never went to a vote.

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Adams: the procedure of a water storage district; I was invited to be there to outline the irrigation district procedure. After careful consideration they decided on the water storage plan because they had one vote per each $100 in land value.

Baum: At that time did you think a water storage district was better for that particular area?

Adams: I had had no direct experience with the Water Storage Act. I think I showed no partiality for the Irrigation District Act at the time, but I had the general feeling that ultimately the community would be better off if all of the people had a chance to pass on what was being done. I realized that the local people had to determine what was to their best interest, but I think I would have been more satisfied with an irrigation district. I might say that some of my best friends down there in Kern County preferred the water storage district: Forest Frick was one of them, he's still a leader down there; Mr. Woodworth, son of Professor Woodworth who in early days was head of entomology in the College of Agriculture; and Hugh Jewett, a very important man, all large landowners. Then the movement lay dormant for quite awhile.

Yesterday I saw Forest Frick over at the Commonwealth Club meeting. I asked him just what

Adams: the procedure of a water conservation district. I was invited to be there to outline the irrigation district procedure. After careful consideration they decided on the water storage plan because they had one vote per acre of land value.

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Jen: I had had no direct experience with it. Later it came Act. In this [illegible] showed no very [illegible] irrigation district Act at this time, but I saw the general feeling that it would be one with which to work [illegible] of the [illegible] to use or not was being [illegible]. I [illegible] the local people had to decide [illegible] their best interest, but I think [illegible] more satisfactory with an irrigation district. [illegible] some of my [illegible] in Yuba County preferred the water storage district. Yuba City was one of the [illegible] town there; Mr. Woodward, son [illegible] who in early days was head of [illegible] College of Agriculture; and Juan [illegible], a very independent man, all large landowners. [illegible] movement lay dormant for quite awhile.

Yesterday I saw Harvest Price [illegible] at the Commonwealth Club meeting. I asked him just what

Adams: year the district finally got organized. 1941. And they don't yet have their water supply arrangements made. The Bureau of Reclamation has built Isabella Reservoir, but the district has not worked out with the Bureau of Reclamation any plan for obtaining water. The 160-acre limitation has held them up.

There's no question that they made the right choice in organizing a water storage district. That's wonderful land down there.

I might mention with reference to those early negotiations that Mr. Alfred Harrell, who was editor and publisher of the Bakersfield Californian, was very cooperative. I had a number of conferences with him. He knew the public sentiment.

Large Farms vs. Small Farms

Baum: Did you find that the effect of irrigation districts was to reduce the size of landholdings in the district?

Adams: When any area of unirrigated land is brought into a project the result is always to bring about a reduction in the size of holdings. The charge for irrigation can rarely be paid on unirrigated land. Besides this, when a project is opened there is generally a movement into the area by those desiring to take advantage of the new enterprise. This is true whether the project is a district or some other type. I think subdivision is more rapid in irrigation districts

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Large Farms vs. Small Farms

Fanu: Did you find that the effect of irrigation districts was to reduce the size of landholdings? The district.

Adams: When any area of unirrigated land is brought into a project the result is always to bring about a reduction in the size of holdings. The charge for irrigation can really be paid on unirrigated land. Really, when a project is opened there is necessarily a movement into the area by those desiring to take advantage of the new enterprise. This is true whether the project is a district or some other type. I think subdivision is more rapid in a [illegible] district

Adams: than in other types, because the district assessment is levied against all the land in the district.

Baum: I have heard people who favor irrigation districts say that one of their major beneficial effects is the breaking up of large landholdings. That implies that they favor small landholdings. I think many other people feel large landholdings are more efficient, more economical, and a better system for agriculture. What do you think on that matter?

Adams: I've heard that question discussed a great many times. I presume you mean the family farm as opposed to the large corporation farm, because pro and con arguments generally relate to these two types. I can't answer your question categorically yes or no. I grew up on a family farm, and the life there was one of my greatest experiences. The only trouble was that like so many other "family" farms it wasn't large enough to support the family. Speaking sentimentally, I would like to see all of our farm areas made up of farms of that type, but that will never happen. At present many of our farms are too small to produce satisfactory income.

Agriculture is now generally a business--no longer merely a mode of life. There is no question that the large farms in California have made a great contribution to our economy. Many of the abuses

Adams: than in other [illegible], because the [illegible] account is leveled against all the land in the district.

[illegible]: I have heard people [illegible] say that one of their major beneficial effects [illegible] the breaking up of large landholdings. [illegible] that they have small landholdings. [illegible] many other people feel large [illegible] [illegible] economical, [illegible] system [illegible] land tenure. [illegible] do you think of that method.

Adams: I've heard that [illegible] [illegible] land tenure. I presume you mean the [illegible] opposed to the large corporation farm, [illegible] arrangements generally [illegible] to [illegible] tenure. [illegible] could answer your question [illegible] I grew up on a family farm, [illegible] one of my [illegible] experiment. [illegible] was that like so many other [illegible] large enough to support the family. Gradually [illegible] timentally, I would like to see a lot more of [illegible] areas made up of farms of that type, but that will never happen. At present many of [illegible] farms are too small to produce satisfactory income.

Agriculture is [illegible] generally a [illegible] longer merely a mode of life. [illegible] is to [illegible] that the large farms in California have made [illegible] contribution to our economy. [illegible]

Adams: attributed to large corporation farms have been in connection with the status of the laborers. If there are such abuses, they can be corrected--as many have been. There are some areas in California where family farms could not be established. An example is to be found in some portions of our Sacramento-San Joaquin delta. Another example is on the west side of San Joaquin Valley in Fresno County where the cost of supplying water to the land is prohibitive to the man of small means. This is because the only water available is underground water which must be raised from great depths, at a very high cost for wells and pumping equipment. Ultimately, when water is made available under the state water plan the situation may be different.

There are areas in which individuals have acquired large holdings and have gradually developed them under irrigation or plan to do so. In Kern County there are many instances of this situation. I have a general feeling that many of these large holdings up and down the state will ultimately be further subdivided, but no one can make really accurate predictions, especially with regard to an industry that is governed by so many forces as agriculture is.

[illegible]

attributed to large corporation farms [illegible] in
combination with the [illegible] of the [illegible].
There are much [illegible]. There are [illegible] farms--as
many [illegible] farms. There are [illegible] in [illegible]
where small farms [illegible] be [illegible].
Example is to be found in [illegible]
Sacramento-San Joaquin delta. According [illegible]
to the report of [illegible]
[illegible] the most [illegible]
land is owned by [illegible].
It becomes [illegible] water
water [illegible] must be [illegible] at
a very high [illegible] water [illegible].
Ultimately, when water is [illegible] available
above water [illegible] the [illegible].

There is [illegible] in which [illegible]
acquire large holdings and [illegible]
them and [illegible]. In [illegible]
County there is a [illegible] [illegible]
[illegible] general feeling that many of the large
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industry that is covered by [illegible]
agriculture.

Difficulties in Developing Irrigation Districts

Baum: Many irrigation districts were organized in the '20's when there was already an agricultural surplus in the United States. Was there any opposition to irrigation districts on the grounds that they would just increase the surplus?

Adams: I'll give you an example of that. I would say it was in the late '20's, Frank Swett, whom I have mentioned to you before, was then general manager of the Pear Growers Association, which was a marketing agency for pears. He was raising pears over at Martinez and he purchased land down in the South San Joaquin District and had plantings there. He made rather bitter attacks on those of us who were interested in aiding irrigation development through districts. That was on the basis that they had more pears being grown than they could market and we were constantly increasing the areas that were being put into fruit and causing growers that much more trouble. So there was opposition in certain segments.

Baum: Did this factor of the agricultural surplus come into your mind or the minds of the communities that were interested in organizing irrigation districts?

Adams: We considered all phases of the thing. We certainly were conscious of surplus, but you couldn't determine

Difficulties in Developing Irrigation Industries

[illegible]: Many irrigation districts were organized in the [illegible] when there was no irrigation agricultural surplus in the United States. Are there any conditions in irrigation which is [illegible] that they could just increase the surplus?

[illegible]: Will give you an example of it. I worked out it was in the late [illegible], [illegible] I have abandoned to [illegible] farm, [illegible] of the dam for [illegible] industry, [illegible] a [illegible] away for [illegible]. [illegible] industries and [illegible] produced [illegible] in the South [illegible] Pacific [illegible] [illegible] in addition [illegible] [illegible] in addition [illegible] [illegible] [illegible] [illegible] increasing the [illegible] [illegible] and canal [illegible] that [illegible] possible. So there was opposition in [illegible] districts.

[illegible]: Did this [illegible] of the agricultural surplus come into your mind or the minds of the [illegible] were interested in organizing irrigation [illegible] eradicated all disease of the [illegible] [illegible] some economies of surplus, but [illegible] [illegible]

Adams: a matter of irrigation development on the basis of agricultural surpluses at any one time because the development of an irrigation project is a slow process. It takes many years sometimes.

Baum: In other words, you were taking the long view, that the surpluses would not last forever.

Adams: We had to take the long view. One of the problems that did conern us was the matter of settlement of the land. A project isn't a success until the land gets irrigated. If you have a large amount of unirrigated land not earning enough to carry the load, why, you're in trouble. That was the cause of failure of many irrigation projects in the West. Settlement became a problem about 1914 or 1915. The settlement had really become a problem in the West much earlier, even before the passage of the Reclamation Act in 1902.

Baum: Why weren't there settlers?

Adams: I remember someone remarked, along about 1914, "The species settler has become extinct." It's not easy to get established on a farm. Once it was a matter of a few hundred dollars to get established on a farm, but prices increased and it became several thousand dollars and it was not long before it became $10,000 or $15,000 to establish a farm and it must be much more than that now. Because of the

Adams: difficulty of settlers getting established, the state land settlement plan was adopted. In addition to the cost of the land, buildings must be erected, equipment purchased, land must be prepared for irrigation, planted, and there must be money available to carry the enterprise until it becomes self-sustaining. The Federal Farm Loan Act made the establishment of farms much easier of course.

Baum: It seems that one of the problems, then, was that the cost of land had risen higher than the agricultural production warranted, at least for beginning settlers.

Adams: Let me cite the West Stanislaus District. Some of that land was sold, after organization, at somewhere in the neighborhood of $200 an acre. It was a high figure, very much over its value for dry farming. I was talking to one of the farm advisors about that increase in price. He said, "If they pay that much for their land, they're working for nothing." However, I doubt if our predictions were borne out because I believe that has been a very successful farming area, whatever they paid for land.

It seemed to me very significant in the formation of districts that there should be an immediate increase in price of land after a water supply was made available. Right after Merced Irrigation

[illegible]: difficulty of a [illegible] existing established. The share land settlement plan was adopted. In a [illegible] to the cost of the [illegible], bulldozers must be available; equipment [illegible]. Land must be prepared for [illegible] planting, and the [illegible] money available to carry the enterprise until it becomes self-[illegible]. The [illegible] have [illegible] [illegible] of farms much larger [illegible].

[illegible]: [illegible] of land and [illegible] than [illegible]. [illegible] irrigation [illegible]. [illegible] [illegible]: [illegible] that land use [illegible]. [illegible] in the neighborhood of [illegible] [illegible]. [illegible] very much over the [illegible]. Two [illegible] belong to one of the [illegible] increase in price. He said, "[illegible] for their land, begins [illegible]." However, doubt if [illegible] because I believe that has been a very successful [illegible], whether they will [illegible].

It seemed to [illegible] very significant [illegible] or district [illegible] that there should [illegible] increase in price of land after a [illegible] made available. Right after [illegible]

Adams: District was organized, I spent several days finding out what the price had been before and what it was after the formation of the district. There was a great increase.

Baum: The irrigated land has to pay assessments, which I should think would tend to keep the price of the land down.

Adams: That's something that should enter into the price of land, but so far as I can see, it hasn't.

Baum: I can't imagine a farmer buying land without considering the cost of the water.

Adams: I suppose they do, but if they want the land they have to pay the price. In an irrigation district they don't have to pay for that water right away. Speaking academically, as the price of water goes up, the price of land should go down, but I haven't found that true.

Baum: I should think the cost of land would go down when the cost of other factors goes up, as water, taxes, or even fertilizers and seeds.

Adams: Yes. But the question of scarcity of land must enter into that, and the desirability of location. Desire to live there enters into the situation.

Adam: District was or [illegible], I expect very much [illegible] [illegible] what the price [illegible] before and that [illegible] after the formation of the district. There is a great increase.

[illegible]: The inspector [illegible] as to pay [illegible], which I should think would [illegible] the [illegible] of the [illegible].

[illegible]: In this sense in that there would [illegible] the [illegible] of land, but no [illegible] [illegible].

[illegible]: I can't imagine [illegible] for the cost of [illegible].

[illegible]: I suppose [illegible], but if [illegible] had they have to pay the [illegible]. [illegible] of district they don't have to pay for [illegible] water etc. [illegible] specific [illegible] the price of water [illegible] the price of land also go down, but [illegible] round that time.

[illegible]: I don't think [illegible] cost of land [illegible] the cost of other factors goes up, as rates, taxes, or even facilities are made.

[illegible]: [illegible] the creation of assembly of land [illegible] under land tenure, and the desirability of [illegible]. Desire to live there [illegible] into the [illegible].

Santa Clara Valley Water Conservation District

Adams: Santa Clara Valley Water Conservation District furnishes an excellent example of the long period frequently involved in developing a plan and system of control of water.

Baum: When did you become interested in the Santa Clara water problem?

Adams: While I was still located at Cheyenne in the old Irrigation Investigations office, I came to California for a holiday. The man who was in charge of Irrigation Investigations in California, Mr. Wilson, had had a serious illness and I was asked to look after affairs while he was ill. That was over a two or three month period. One thing I knew he had had in mind was an investigation in Santa Clara Valley. So I went down to see some people down there about the possibilities of an investigation. Mr. Wilson died and was succeeded by Dr. Fortier and I went back to Wyoming.

In 1904 Dr. Fortier sent a student who had just graduated down there to make an investigation. That student was Fred H. Tibbetts. I made several trips down there to go over the ground with Mr. Tibbetts.

Adams: In 1912, in cooperation with the State Conservation Commission, we carried on studies on a number of streams. One of the areas was Santa Clara Valley. Here is the report.

Baum: (reading) This is from Office of Experiment Stations, Bulletin 254, 1912. (They look at report.)

Adams: In about 1920 Fred Tibbetts and Stephen E. Kieffer, another well-known engineer, laid out a plan for Santa Clara Valley which provided for replenishment of underground sources primarily, but with some surface distribution. In 1921 a special act was passed creating a Santa Clara Valley Water Conservation District which extended from Morgan Hill neighborhood to a line midway between Mountain View and Palo Alto, in other words, almost the entire floor of Santa Clara Valley in Santa Clara County. That was subject to approval in an election. That election was held in the fall of '21.

We were having a home built in Los Gatos at the time. I went down there and spent a week just prior to the election and went to the meetings each evening in different areas where the subject was being discussed. I took no part in it, I was merely an observer. It was defeated.

Baum: What was the opposition?

Adams: In 1972, in cooperation with the St. Le[illegible]
[illegible]ras Evaluation Commission, we carried on at dif[illegible] on
a number of streams. One of these areas was Santa
Clara Valley. Here is the report.

Sauer: (reading) "This is from Office of Exploration St[illegible]
Bulletin 2[illegible], 1912. (Pause to look at report.)

Sauer: In about 1920 Fred Tibbetts and Joe Segler, [illegible]
another well-known engineer, laid out a plan for
Santa Clara Valley which involved the reclamation
of underground storage reservoirs, or with some
angle of distribution. In [illegible] a special act was
passed creating a Santa Clara Valley [illegible] by which
[illegible] which included the [illegible] relocation
of a line railway between Mountain View and Palo
Alto. In other words, almost the entire floor of
Santa Clara Valley in Santa Clara County. [illegible] was
subject to a vote in an election. The election
was held in the fall of 1921.

We were having a hard fight in Los Gatos this
time. I went down to [illegible] and spent a week just prior
to the election and went to the [illegible] in various
in different areas where the subject was being
discussed. I took no part in it, I was merely an
observer. It was defeated.

Sauer: What was the opportunity?

Adams: There was very bitter opposition.

Baum: Why were they so opposed?

Adams: Farmers are conservative when it comes to spending money.

Baum: It was the expense?

Adams: As I remember it the plan the district was to carry out would cost around ten or eleven million dollars. For an area that never spent any great deal of money on irrigation development that was a lot of money. There were already a good many pumping plants in the valley and I think the farmers generally didn't appreciate the dangers of the impending overdraft. There was also opposition from the owners of several small ditches from Los Gatos Creek which supplied water for irrigation in the winter.

After this defeat the law was amended eliminating the southern area around Morgan Hill. Again the matter went to the vote of the people and was defeated once more. Following this second failure the matter was dropped until about 1926 when Dr. Leroy Anderson undertook to revive the project. He didn't want me to call him Doctor down there because he was a farmer then, but he had been formerly in charge of the farm school at Davis and I had known him intimately, we were very close friends. Sometime in 1926 he came to see me, he was anxious to get things started again. I had many conferences with him and I talked to at least one large mass meeting on procedure in forming

Adams: There was very bitter opposition.

Cohen: Why were they so opposed?

Adams: Farmers are conservative. It took a lot to convince them.

Cohen: It was too expensive?

Adams: As I remember it, the cost of the project was to carry out would cost around two or three million dollars. For an area that never needed any great deal of money on irrigation development, that was lot of money. There were already a good many pumping plants in the valley that [illegible] a comparatively small acreage to irrigate [illegible] of the [illegible] -ment. There was also opposition from some people of a very small acreage who felt [illegible] which supplied water for irrigation in the winter.

After this defeat the [illegible] the southern area around Bakersfield. [illegible] rather went to the vote of the people and was defeated once more. Following the second failure the matter was dropped until about 1954 when Mr. Leroy Anderson undertook to revive the project. [illegible] asked me to call him Doctor down there because [illegible] farmer then, but he had been formerly in charge of the farm school at Davis and I had known [illegible] we were very close friends. Sometime in [illegible] came to see me, he was anxious to get [illegible] again. I had many conferences with him and [illegible] to get local one large area meeting or procedure in forming

Adams: a district. Fred Tibbetts had loaned me a copy of the 1921 Tibbetts-Kieffer report and I had analyzed it for Mr. Anderson and had given him a memorandum setting forth the main features of the project. I had informed myself as well as I could on the physical side as well as the organization side.

Mr. Anderson formed then a little association which was known as the Valley Water Conservation Association. He interested a number of others in scattered areas. I have here a newspaper clipping giving an account of the twentieth anniversary meeting of the association, from the San Jose Mercury. In those early years they raised about $10,000 from the farmers and chambers of commerce.

One of the first things they did was to build some little check dams on some of the little tributaries on the Almaden and Guadalupe creeks. There was much propaganda then about the advantage of these little check dams. You will find that in all these early discussions of districts, every farmer is an engineer. He has his ideas as to what should be done.

Baum: Was the idea of these little dams for storage or underground percolation?

Adams: Just to slow down the flow of water. They also bought one of the old ditches, the Page Ditch, and

Adams: a district. Mrs. Pickette had loaned me a copy of the 1921 Pickette-Kirk report and I had analyzed it for Mr. Anderson and had given him a memorandum setting forth the main features of the problem. I had informed myself as well as I could on the physical side as well as the [illegible].

Mr. Anderson formed [illegible] a little association which was known as the Valley [illegible] Conservation Association. He interested a number of [illegible] scattered areas. I have [illegible] a memorandum [illegible] living on each of [illegible] which [illegible] members of the association [illegible] in more early years the [illegible] the farmers and [illegible] tree.

We [illegible] the Kirk [illegible] some little dams on [illegible] little watersheds on the Amador and Stockton [illegible]. There was much propaganda then [illegible] of these [illegible] also about dams. [illegible] will [illegible] all these early discussions of [illegible], [illegible] farmer is an engineer. We had [illegible] can fit [illegible].

Wum: Was the idea [illegible] these little dams [illegible] underground association?

Adams: Just to slow down the flow of water. They also [illegible] small cisterns, the [illegible] and

Adams: ran water out in it primarily for percolating water into the ground, but they did it by running it out on the orchards. I think they gave it to the farmers almost for nothing. The main thing was to get it into the underground.

But Mr. Anderson and his associates came to realize something else was necessary.

Baum: Did Leroy Anderson own much of this land?

Adams: He had a very nice orchard on the road between Congress Junction and Saratoga, probably 25 or 30 acres.

Baum: Was he quite a wealthy man?

Adams: No, I think he had very little capital. I know that he assumed a rather heavy debt and paid a high price for the land. One of his friends told me that he didn't think that Anderson could carry the financial burden which he assumed.

Baum: He couldn't afford to contribute much money personally.

Adams: Their contributions were 50¢ an acre on that preliminary investigation.

I ran into this little item Dr. Anderson sent me at the time of this anniversary meeting.

Baum: (reading) A certificate of membership in the Valley Water Conservation Association, signed December 1, 1926.

Adams: He predated it.

Baum: Signed Leroy Anderson and Max Watson. And on the back, "We are sending you this certificate of membership in the Valley Water Conservation Association in consideration of the splendid assistance which you gave us in the spring of 1926 when we were struggling to find what should be done to save the flood waters of our valley, and also for the good advice that you gave so freely in succeeding years."

Adams: Dr. Anderson interested Senator Herbert Jones in preparing a new act and this act was passed in 1929. It was under that law that the present district was organized.

Baum: Did your wife and children live in Los Gatos?

Adams: Yes, off and on for about ten years. My oldest boy suffered greatly from asthma and we moved down there in '21. He never wheezed once after we got there.

Baum: Did you take any further part in the Santa Clara district's affairs?

Adams: No. They had employed Fred Tibbetts after the act of 1929 was passed. In fact, I'm sure Mr. Tibbetts had given Dr. Anderson a good deal of advice before he was employed. They had that act amended in 1931 to take care of some deficiencies. I went over the law at the time at the request of Senator Jones, and made my comments, but I don't recall what suggestions I made.

Baum: What kind of a man was Leroy Anderson?

Adams: He was a wonderful man. He was primarily an educator. His interest originally at Cornell was dairying. He came to California first as principal of California Polytechnic School at San Luis Obispo. I met him just as he took that over. He was visiting Stanford campus with some of my friends there. Then when I came back into the work in 1910 he was at Davis.

Baum: Did he get along well with people?

Adams: So far as I observed, he never antagonized anyone, although there had been some conflict between him and Professor Major at Davis while Dr. Anderson was there. When the district was finally organized and got going in '31, he wanted to be secretary. What I'm telling you now came out of the mouth of Fred Tibbetts and was a great surprise to me. That Dr. Anderson wanted a good big salary, and that he wasn't a good businessman. And they replaced him. He felt very, very badly about it. I don't think they treated him fairly. They finally honored him by naming a big reservoir the Anderson Reservoir.

Baum: I know there was a lot of opposition to Anderson and I wondered if he were the type that antagonized people.

Adams: He was very gentle, very much of a gentleman. Very

[illegible]

[illegible]: What kind of a man was Barry Anderson?

[illegible]: He was a wonderful man. He was ordinarily an educated [illegible] in interest original [illegible] General was taking [illegible] came to [illegible] development of [illegible] software [illegible] at San Luis Obispo. [illegible] I'd an [illegible] book that [illegible]. [illegible] came with some of my [illegible] there [illegible] came back [illegible] work [illegible] [illegible] Navis. [illegible] had been [illegible] along well with [illegible].

[illegible]: So far as I observed, he was [illegible] and [illegible]. Although there had been some [illegible] [illegible] professor [illegible] Navis's life [illegible] was there. [illegible] [illegible] and [illegible] in '37, he married [illegible]. [illegible] Fred Tibbetts and was [illegible] [illegible]. [illegible] Anderson married a good [illegible] [illegible] was [illegible] good [illegible]. [illegible] [illegible] felt [illegible] about it. [illegible] they thought [illegible]. Now [illegible] by making a [illegible] Barry Anderson [illegible].

[illegible]: Upon there was a lot of opposition [illegible] and I wondered if he was [illegible] [illegible] people.

[illegible]: [illegible] was very [illegible] life, very much of a performer. [illegible]

Adams: quiet. But he had single-handedly restarted the movement that led to what followed. Above any one individual he was entitled to credit for that.

Baum: He must have been single-minded, to keep working at that when everyone else gave up.

Adams: Yes, but I hardly think everyone else had given up. I enjoyed my contacts with him very much. He was really a very close friend. I stopped to see him almost every time I passed the farm. His wife was a very brilliant woman, also a Ph.D. They were very active in the community church at Saratoga. When I attended his funeral there was constant reference to his contributions to the community down there. The church was just filled with people at his funeral. He was very highly regarded among his friends.

But if he had an idea and someone opposed him, he wouldn't back down.

Baum: So you would describe him as gentle, but persistent.

Adams: Yes.

Adam: Yes. But he had single-handedly restarted the movement that led to what followed. Then one individual he was entitled to credit for that.

Ann: He must have been wide-minded, to keep working at this when everyone else gave up.

Adam: Yes, but I really tell everyone else in my life. I also ed my contacts with him very much. He was really a very close friend. [illegible] almost ev my time I spent the [illegible] a very brilliant woman, also a [illegible] very active in the community [illegible]. When I attended the funeral there was [illegible] reference to his contributions to the community down there. The church was jo a still [illegible] at his funeral. He was very highly regarded [illegible] his friends.

But if he had an idea [illegible] he wouldn't back down.

Ann: Do you could describe him as [illegible], [illegible].

Adam: Yes.

WORLD WAR I

Increasing Food Production in California

Baum: You mentioned you did some troubleshooting on water problems during World War I.

Adams: Yes. There was a serious shortage of water in the Sacramento Valley and in some other areas. The great emphasis of the Council of Defense and the Food Administration was to increase food production. The need for food in Europe was paramount. The Council of Defense and the Food Administration came to us for help to speed up food production.

We took over, with the consent of the local people and under the moral suasion of the times, control of water distribution in a number of areas. One was the Woodland area--Professor Beckett took over that. The purpose was to see that no one received more water than he needed. One of his main objectors was George Hecke, who was later state director of agriculture and quite a prominent man and who later received the LL.D. from the University largely for his leadership in stamping out the foot and mouth disease in California. Mr. Hecke almost cried when Mr. Beckett wouldn't let him have as much water as he wanted. Said his orchard was going to die.

WORLD WAR I

Increase in Food Production in California

[illegible] problem [illegible] to [illegible] on [illegible] problems during World War I.

[illegible] Food Administration [illegible] increase food production. [illegible] Council of Defense [illegible] to [illegible].

[illegible] people [illegible] of war [illegible] the road [illegible]--Professor [illegible]. The purpose [illegible] work [illegible] modern. [illegible] war Herbert Hoover, who later became [illegible] of agriculture [illegible] department [illegible] later received [illegible]. From the Dover [illegible] the life [illegible] exemplify [illegible] south dines [illegible] in California. Mr. [illegible] [illegible] Hoover. Hoover would let him [illegible] [illegible] be [illegible]. Said his [illegible] [illegible].

Adams: Mr. ~~Viehmeyer~~ Veihmeyer took over control of water distribution of the West Side Sacramento Valley Canal Company, the old Kuhn Project. I remember how easily that arrangement was made because of the general sentiment that we must do everything to advance the war. Ralph Merritt, state food administrator, asked me to go up there. I went up on the evening train. First thing in the morning I went to the office of the canal company and arranged for a number of people to meet me there, including Mr. James Mills of Mills Orchard, who controlled what was left of the Kuhn interest property there. Within an hour after meeting with those people, I was able to call Ralph Merritt and tell him the arrangement was made, that I was asking Mr. ~~Viehmeyer~~ Veihmeyer to come up and take charge.

We took over water distributions in some of the foothill areas, I think the Grass Valley area. Some others. That was one phase of the work we did.

Another phase of our work had to do with the Federal Capital Issues Committee. No enterprise involving public financing could be financed without that committee's approval. A number of canals had been built in the area previously included in the Kuhn Project. Pumping plants had been put in and

Adams: rice had been planted. The promoters proposed to recoup themselves by forming irrigation districts and taking the bonds of the districts and getting out in that way. In Washington the Capital Issues Committee looked to the Department of Agriculture and immediately to Dr. Fortier for these reports throughout the West. Dr. Fortier instructed me to look into those in California. In Southern California Mr. C. E. Tait looked into a number of them. That was the general character of our work.

I remember a conference in the assembly chambers in Sacramento actively participated in by the staff of the College of Agriculture that was devoted to measures for increasing food production. I had been asked to make a study of possibilities for increasing the wheat crop by increased irrigation.

Another important project I would like to refer to was in San Joaquin Valley in Kings County. A very large canal had been built from Kings River, the Lakeland Canal, to water land in the area of Tulare Lake, Just as it was completed an injunction prevented diverting any water and that canal had been lying idle for many years without a drop of water in it. It had been stopped by the lower riparian owners. We undertook to see what we could do with that. I got Professor Harding, who occasionally made investigations for us, to investigate that area. I think largely as a result of the facts he

Adams:

place had been planned. The promoters proposed to
reclaim themselves by further irrigation instead
of taking the word of the scientists and getting
out in that way. In accordance the district has a
committee located to the department of public works
and immediately to the [illegible] for a water reservoir
throughout the state. [illegible] engineer instructed to
look into [illegible] and [illegible]
[illegible]. [illegible] Tait [illegible] [illegible] of those.
That was the report [illegible].

I remember [illegible] in the [illegible]
in Sacramento recently part [illegible] [illegible] staff
of the College of Agriculture [illegible] Davis [illegible]
resources for increase [illegible] [illegible].
been asked to make a study of potential [illegible]
increasing the wheat crop [illegible].

Another important project [illegible]
to work in San Joaquin Valley [illegible].
a very large canal had been [illegible] [illegible] River,
the Merced [illegible], to water [illegible] [illegible]
Tulare Lake. At that time [illegible] canal [illegible]
prevented diverting any water and that canal
been lying idle for many years without a drop of
water in it. It had been abandoned by [illegible]
Spanish owners. We undertook to see what we could
do with that. [illegible] got Professor [illegible], [illegible] [illegible]
[illegible] made investigation for us. [illegible] investigate that
area. I think [illegible] [illegible] the tracts be

Adams: gathered and our conferences--I remember one conference at Fresno with all the group together--that canal was opened. It was brought into the Kings River group. That was an important accomplishment.

Baum: It sounds like if Californians would get together under the same impetus as they had during that war to solve their problems, they could be taken care of.

Adams: If is a big question. There was a great feeling of support for the country and the war at that time.

I recall an incident up at Woodland. They had committees to sell war bonds. There was a German up there who had an extensive farm. He held out. The committee went to him and said, "Here, you buy these bonds." And he bought them. Force of public opinion.

During that shortage of water, the Sacramento and San Joaquin Water Conference was organized, largely through Chester H. Loveland of the Railroad Commission, Hydraulic Division. Representatives of all the irrigation interests in Sacramento Valley, including the Delta, joined in that movement. They raised funds for emergency supervision of water diversions from the Sacramento River. Several conferences were held in which factual material was presented

Adams: by various agencies. The engineer's office of the War Department took an active part because through their control of navigation they could prevent some of these diversions. But they took a very broad-minded view. They realized the need was for water for irrigation and they wouldn't interfere unless absolutely necessary. That point of view was emphasized in later years by the flood control measures passed by Congress.

Work with the Army Educational Corps in France After World War I

Baum: I believe you went to France for the army. In what capacity?

Adams: It was connected with this general state and national movement for making provision on the land for returning soldiers. Canada also was interested in that subject. After the Armistice there were two or three million men over there in France. What were they going to do with them? A long slow process to bring them all back.

So they organized the Army Educational Corps and established a university in Switzerland and one at Beaune, France. They provided opportunities for soldiers to take educational courses. Educators from all over the country went over to take part in

Adler: [illegible] war was approaches. The engineers office of the War Department took no active part because through their control of navigation they could prevent some of these [illegible]. But they had a very [illegible] idea. They realized the [illegible] were [illegible] for [illegible] worldwide [illegible] a [illegible] absolutely necessary. With that point of view we [illegible] [illegible] control measures passed by [illegible].

Work with the Army [illegible] Issues in Europe After [illegible]

[illegible]: I believe you were in Europe [illegible] [illegible] capacity?

[illegible]: I was [illegible] with this [illegible] [illegible] national [illegible] for [illegible] the [illegible] [illegible] the [illegible] [illegible]. After the Armistice [illegible] two or three [illegible] [illegible] over in [illegible] [illegible] what were they going to do with [illegible] [illegible] process of bringing them all back.

So they [illegible] the Army [illegible] and established a [illegible] in Switzerland [illegible] at Lausanne, France. They provided [illegible] for soldiers to take educational courses. Thousands from all over the country went over to take part in

Adams: those courses. Professor Ernest Babcock of the University went over. Knowles Ryerson, who had recently graduated from the University of California, was a second lieutenant in the army and organized agricultural clubs in the neighborhood of Le Mans. He had some 2500 soldiers, as I recall, in his clubs. But that had nothing to do with the Educational Corps.

Baum: Was your job to prepare the soldiers for land settlement?

Adams: Well, this trip came out of the general movement to provide for returning soldiers. The army educational program was organized and originally conducted by the YMCA, but while I was en route to France it was taken over entirely by the army and was operated under army orders. I received a telegram one day from a man who signed himself Captain Stanley Howe, who was recruiting men to go over and take part in what they called the institutes that were being conducted among the troops. He asked if I would gather a group who would talk on opportunities for soldiers on the land. I think Dr. Mead had something to do with that. It had been originally proposed that he should go over, but he was unable to do that, although he expected to go later.

Adams: I went to Washington and assembled some illustrative material, largely from the Reclamation Service. They were exceedingly cooperative. We went into their photographic file room with their publicity man, Mr. Blanchard, and I was allowed to select any films I wanted. We had several copies made--35 millimeter film. I also was given access to their slides and assembled several sets of slides. I arranged for Walter Packard to come over and take part. But he arrived too late to have much part in the institute work. I had a meeting with the group at New York University. Dr. Lindsey was in charge. I suppose there was about a month involved in preliminaries and gathering material.

I got over to France and went directly to Paris and reported to Mr. Kingsbury, who was in charge of the agricultural institutes being conducted. I found he was a brother of two of my instructors in Cogswell College in the early '90's. A Californian from Napa County.

Well, things were kind of in a mess over there. I waited around. It got down to the point that there weren't going to be any more men to talk on opportunities on the land for returning soldiers than Mr. Packard and me. It was finally arranged that I should go up around the Marne and report to

Hamm:

I went to Washington and assembled some illustrative material, largely from the Extension Service. They were exceedingly cooperative. I went into their photographic file room with their publicity man, Mr. Blanchard, and I was allowed to select any films I wanted. We made my own 16 mm. film made--35 millimeter film. We also was given a case to their slides and assembled several sets of slides. I was summed for Walter Hagenes to come over and take part. Not he arrived too late to have much part in the Institute work. I had a meeting with the people at New York University. Mr. Lindemann was in charge. I suppose there was about a week involved in preliminaries and rehearsal in Walter's.

I got over to Ithaca and went directly to Davis and reported to Mr. Hildebrandt, who was in charge of the agricultural institutes on the campus. I found he was a brother of two of my instructors at Roswell College in the early 1920's. I felt welcome from that day forward.

Well, things were kind of in a mess at first. I waited around. It got down to the point that there weren't going to be any more men to fill in opportunities on the land for returning veterans than Mr. Hockenhull and me. It was finally arranged that I should go up around the Marne and report to

Adams: someone. That instruction was changed and I was sent to Is-ur-til. I reported to the captain in charge of the institutes, and found there four or five men on the job, but they weren't doing anything, they were waiting for orders. We waited there about two weeks. Finally the captain and several of us rode down to Beaune and put something under the men in charge because a few days later we got orders to report to Beaune. I finished preparing a lecture there. I studied all the literature I had brought over while I was waiting.

We finally got started and were sent to Le Mans, four or five of us. The routine was that they'd have a colonel's car come around and pick us up about one o'clock and drop us off at various camps. The commander there would order the troops assembled and we'd talk to them. I was the only one on this subject of settling the men on the land. I told what was being done by the Reclamation Service, what was being done in the south to open up lands, what was being done under the Land Settlement Act in California, and again what the opportunities were for farming and what men needed to get started on the land.

Baum: You just gave one lecture in one location and then traveled on?

Adams: Yes. Then in the evening the colonel's car would come around and take us back to our barracks. We repeated that for several weeks. We came home one night and found orders to return immediately to Paris and then to Beaune. After several weeks the educational corps, a whole trainload of us, were sent to Brest to await debarkation. It took several weeks there before we had an opportunity to leave. We returned on a very crowded ship carrying some three thousand soldiers. On the way across the Atlantic a number of us were called on daily to talk to the troops from the bridge on our particular subjects. The forward deck was crowded with soldiers milling around and most of them paid very little attention to us.

Baum: Were the soldiers interested?

Adams: Well, I remember one outfit from the Bronx, New York. They weren't a bit interested. In other outfits there were many questions and men would come up and talk to me afterwards.

Baum: In what connection had you known Walter Packard?

Adams: I first met him in Berkeley at the University, soon after I returned to irrigation work in 1910. He graduated from Iowa State College, I think, then was at Stanford for awhile. Down there he was in charge of YMCA work. At Berkeley he was

[illegible]

Adams: active, in some capacity, in the Farmer's Institutes, or rather, the demonstration trains that the College of Agriculture conducted with the Southern Pacific Company for several years. I think he had been in some of the boys club work of the Extension Service. He had established the experimental station in Imperial Valley and was in charge of it for several years. When the Delhi settlement was established he was the superintendent. So I knew Walter very intimately for many years.

Baum: Had his training been in agriculture, or group work?

Adams: I'm not sure, but I believe it was some agriculture and some economics and sociology.

LAND SETTLEMENT IN CALIFORNIA

Background of the Land Settlement Act

Baum: Land settlement was a topic of interest in California even before World War I, wasn't it?

Adams: Yes. There was a discussion of land settlement in the Commonwealth Club in 1915.

Baum: How did that idea first start?

Adams: A bill was pending in the state legislature providing for a state land settlement program in California, generally following the lines of land settlement in Victoria, Australia. This bill had been prepared in a committee appointed by President Wheeler of the University of California following an interest in land settlement created by Dr. Mead. Dr. Mead was in Victoria, Australia in charge of the State Rivers and Water Supply Commission. He had gone over in 1907 as chairman. The Victorian government had built some very large irrigation works and the water was not being utilized. What was needed were people on the land to use the water. Australian political and social thought was in sympathy with state directed activities along those lines. The task of settling the land fell to Dr. Mead and the commission. They worked out a plan of settlement

[illegible] SETTLEMENT IN CALIFORNIA

Background in the Land Settlement [illegible]

[illegible]

Adams: by which land was prepared prior to settlement, buildings were erected, and very active promotion for settlement was carried on. At one time, about 1912, he thought it desirable to try to interest some of our successful irrigation farmers in the United States in going to Australia. He didn't get very many to go over there. He had taken George Kreutzer, who was farm advisor in Kern County, to act as superintendent of these settlements, or one or two of them.

Dr. Mead made frequent visits to the U. S. and advocated that we in the U. S. adopt the same type of promotion of settlement with government aid in laying out the farms, preparing a portion of them for irrigation before settlers were on there so settlers wouldn't have to spend two or three years without any income, building homes for them, long time amortization of the purchase price of the land and buildings. He spoke at various places over the country advocating that. He interested President Wheeler and Dean Hunt very much in the idea, and as a result President Wheeler had appointed a committee to consider legislation. The members were: Dr. David P. Barrows, chairman; Dean William Kerr Jones; Professor A. M. Kidd of the law department; Dean

[illegible]

Adams: Hunt of the College of Agriculture; a very bright member of the staff of the Department of Economics, Carlton H. Parker, and myself.

Baum: In 1915 you were in favor of a land settlement plan?

Adams: I was in sympathy with it and did all I could to help it from the beginning.

When this bill was being pressed for passage by the legislature a conference was held with Governor Johnson to obtain his support. However, he did not want to see the bill passed. He felt that the whole subject should first be investigated by a state commission. The bill was therefore withdrawn and the suggested commission was authorized.

In 1916 Dr. Mead returned to California to head a new division of rural institutions in the College of Agriculture, and he was made chairman of this commission. At Dr. Mead's suggestion the Commonwealth Club appointed a committee to aid in the investigation that the commission proposed to make and obtained an appropriation of some $1,000 or $1,500, as I remember, from research funds of the Commonwealth Club to finance the committee's investigation.

At the conclusion of the commission's investigation, Dr. Mead prepared a new bill which was passed by the next legislature. It set up a State Land Settlement

[illegible]

[illegible] result of the dollars of Aristotle ; a very [illegible]

[illegible] members of the staff [illegible] observers of [illegible]

[illegible] Hartley, and [illegible].

[illegible] for [illegible] of a [illegible] plan.

[illegible] approaching [illegible]

[illegible] from the [illegible].

When this will [illegible]

by the [illegible]

[illegible] to [illegible].

[illegible] the whole [illegible] [illegible]

[illegible] a [illegible]. [illegible]

[illegible] known [illegible].

In [illegible], Mass returned to [illegible]

[illegible] of [illegible]

[illegible], and [illegible]

[illegible]. At [illegible] [illegible]

[illegible] to [illegible]

[illegible] to [illegible]

an approximation of [illegible]

[illegible]. [illegible] [illegible]

[illegible] to [illegible] the committee [illegible].

[illegible] [illegible]

[illegible]. [illegible] [illegible]

[illegible] [illegible].

Adams: Board to undertake a state program, and Dr. Mead was made chairman of that board. This new bill was considered by the Commonwealth Club at subsequent meetings and its passage was approved by the club.

Baum: The private land colonizers opposed it?

Adams: Oh yes.

Baum: Hadn't most of their private developments gone broke already?

Adams: I do not recall that any of the developments went broke. The problem was the difficulty encountered by settlers under the arrangement of the private land colonization agencies. Some were on land which was unsuitable. Some were on better land, but the terms of payment were impossible for settlers without means. Many centers had failed.

I remember one project east of Stockton promoted by the Fleishhackers. That was found practically impossible for settlement under the private colonization plan. The Fleishhackers found out the facts about it and they returned the investment of the purchasers.

A Mr. Charles H. Kendrick and his partner were perhaps the most active private land colonizers and he was opposed to the state land settlement--he

board to undertake estate programs, and Mr. Ward was made chairman of this board. It is now still was considered by the [illegible] club at such request meeting [illegible] the managers has approved [illegible] the club.

The private land solicitors [illegible] in [illegible].

Lately most of [illegible] to [illegible] [illegible] to the already.

I do not recall the [illegible] of [illegible] [illegible] upon. The problems now the [illegible] [illegible] by nobility under the [illegible] [illegible] of the private land solicitors [illegible]. [illegible] land which was unsuitable. Some were [illegible] [illegible]. [illegible] the [illegible] of [illegible] were impossible for [illegible] without [illegible]. [illegible] [illegible].

I [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] found out [illegible] facts about it [illegible] [illegible] [illegible] the investment of [illegible] [illegible].

A Mr. Charles H. Bonnell and [illegible] were perhaps the most active [illegible] [illegible] and he was [illegible] to the [illegible] land [illegible]

Adams: and C. M. Wooster, who had real estate interests up in the Sacramento Valley.

When I was on one of my institute lectures in the Army Educational Corps in France in 1919, I went one evening to talk to a group of soldiers and whom did I find as commanding officer but Charles H. Kendrick who had opposed our efforts so strongly in California. I remember he said that as the result of that movement for state land settlement private land colonization in California was dead.

Durham and Delhi Settlements

Baum: Were you in contact with the Durham and Delhi settlements?

Adams: My only responsibility was to report on the water supply at the beginning although I was closely in touch with both settlements. We carried on a 40-acre demonstration project at Delhi with alfalfa and vines and orchards for the benefit of the settlers. That's where we brought Mr. Huberty into our work. He went down there to take charge of that project in the field.

I'm inclined to think I might have been indirectly responsible for the purchase of the Delhi land although I had no idea that anything I might have said would

Adams: have had any influence. Here was the situation. Great difficulty was found in locating tracts of suitable land. The Delhi tract had been owned by Mr. Edgar M. Wilson for quite a number of years. He had offered it to the Land Settlement Board. Some of the board didn't favor it. Negotiations for it lapsed and apparently had been discontinued. There was sort of a stalemate there, although Dr. Mead had not yet entirely given up the idea of that land. Dr. Mead told me a remark of Judge Wm. H. Langdon, a member of the board who had been raised in the Modesto-Turlock area. He said, "We always spoke of that tract of land as one over which the jack rabbits carried their lunches when they passed over it."

Well, I was riding up from Fresno on the train and went into the dining car and sat down with the owner of this land, Mr. Wilson. I had become quite well acquainted with him because I had made a careful study of the tract to see what the water supply was and I had recommended that the portion not already in Turlock Irrigation District be annexed to that district and receive its water there if the settlement was established. Mr. Wilson said, "I think Dr. Mead has given up buying our land." I said, "I'm not entirely sure of that." On that cue, Mr.

Adams: Wilson went to see Dr. Mead and within a few days they decided to buy that land. Whether that chance remark of mine was a straw, I don't know. I hope it wasn't. It turned out, so disastrously for the movement.

The unfortunate thing that happened was that Dr. Mead went off to Australia on a consulting trip during a period of controversy regarding Delhi and it got out of hand. A lot of veteran trainees had been settled on the project and their activities were supervised by a retired army officer. There was a lot of uncalled for antagonism aroused. This army officer made an exparte investigation down there and called in the disgruntled settlers, who were undoubtedly having a hard time on that particular type of soil, and wrote a very bitter report to the governor. The governor passed it on to State Engineer McClure and he passed it on to me. I made an investigation and found what I thought were very unfair tactics by the retired army officer and made a report to the state engineer. The governor became very bitter. Dr. Mead was still chairman of the Land Settlement Board, but away, and the governor appointed Mr. Wooster, who had opposed state settlement in the first place, as chairman of the Land

Adams: Settlement Board. That was the beginning of the end.

Baum: Then you think it was poor politics, poor management.

Adams: I don't think that it was a matter of politics with Governor Richardson. He previously had been ardently in favor of the state settlements but had changed his mind following the controversy at Delhi. There is no doubt that many of the settlers were having difficulties. The Delhi area was a hard one in which to get started. The cost of developing the Delhi project was much more than had been anticipated, particularly, I think, the cost of the concrete pipe distributing systems. I know Dr. Mead was very much worried about that feature.

I think that possibly more reliance was placed on underground pipe systems than was merited. I do not recall what the board paid Mr. Wilson for the land, but it undoubtedly was too much. High costs and low income were basic difficulties.

There had been difficulty in obtaining settlers for Delhi due largely to the general situation in land settlement in the country. When Durham was settled there were three or more applicants for each farm available and many were disappointed at not being able to gain acceptance by the board. On the

Adams: other hand, at Delhi the board had to go after settlers and in some cases undoubtedly accepted some who did not have the desirable training, experience, or attitude. There were some settlers there who were capable, sincere, and really getting along, but I felt when I went down to the project for the state engineer that the retired army officer who was in charge of the veteran trainees, as well as the trainees, were very unfair. I felt at the time that if Dr. Mead had not been away in Australia he could have successfully overcome the difficulties, although undoubtedly some adjustments would have had to have been made.

As the controversy at Delhi increased there was disaffection by some of the settlers at Durham. They employed a very able lawyer from Chico to present their case. He attacked the state's handling of the settlement very strongly and took it to court. During the hearings George Kreutzer, the former superintendent of the settlement who was then with the Bureau of Reclamation in Washington, was called to testify. He told me that some of the settlers whom he had gone all out to help had bitterly attacked him. That is what I think brought on his death, because he was so very much hurt at their

[illegible] other hand, at [illegible] could hardly to suffer soldiers and in some cases unfortunately accepted some who did not have the desirable training, [illegible]-lence, or attitude. There was some [illegible] where were [illegible], sincere, and really [illegible] along, but I felt when I went down to see [illegible] for the state evidence that the [illegible] in charge of the veteran training [illegible], were very [illegible]. I felt as the time that if Dr. [illegible] had not [illegible] in another [illegible] he could have success [illegible] difficulties, although [illegible] had to have been made.

As the [illegible] survey [illegible] was dissatisfaction by some of the soldiers [illegible]. They employed a very able lawyer from [illegible] to present their case. He [illegible] of the soldiers very strongly and [illegible]. During the hearings [illegible] superintendent of the [illegible] the Bureau of Reclamation in Washington, [illegible] to testify. He told me that some of the [illegible] whom he [illegible] one all out to help [illegible] stranded [illegible]. That is what [illegible] on his [illegible]. Because he was so [illegible] [illegible]

Adams: attitude. He broke down very shortly after that. He was very able, very sincere and had had long experience.

Baum: Were both colonies to be general agriculture or was some special crop planned?

Adams: The thought was originally that the Durham colony should be made up of general agriculture and animal industries, that the Delhi colony should be largely devoted to horticulture. But when the settlers began to arrive at Delhi most of them wanted to raise alfalfa. It was logical that they should begin with alfalfa because of the long time necessary to bring an orchard into bearing. That's why we put a large portion of our experimental tract at Delhi into alfalfa, demonstrating the different methods of applying water. We put in a little apricot orchard, a small fig orchard, and also a small vineyard.

During the early years the orchards at Delhi did not produce well. The cause of the difficulty was not learned until some years later when Dr. Chandler of the College of Agriculture found that a shortage of zinc in the soil was the cause of the trouble. Recently Professor Huberty told me that it is a wonderfully fine area down at Delhi now and that the orchards are in very fine shape.

Professor Roy Smith of the Department of

Adams: Agricultural Economics at UCLA made a very exhaustive study and report on the history of the Durham and Delhi land settlements. During his investigation I arranged for him to talk with Dr. Mead. We met in a hotel lobby in Sacramento. As we sat down, Dr. Mead put his hand on Roy Smith's knees and said, "Durham should have succeeded, Delhi was a mistake." So that was Dr. Mead's final conclusion on it.

COMMONWEALTH CLUB STUDIES

Baum: To get back to your work with the Commonwealth Club, what further studies did the conservation section take up after they had completed their studies and reports on the Water Commission and Forestry bills?

Adams: In 1915 the conservation section was discontinued but a number of its committees were continued as independent sections. Among these were the committee on forestry and wildlife with Walter Mulford as chairman; the committee on irrigation with Mr. C. E. Grunsky as chairman; the committee on water power which had several chairmen in the succeeding two or three years. Mr. Grunsky continued as chairman of the irrigation section until he was elected president of the club in 1920. I took over then and acted as chairman until about 1924 when I moved to Davis for a year. Fred Tibbetts took over. After a year or two Charles H. Lee took over.

While Mr. Grunsky was chairman the irrigation committee discussed a number of very important subjects which included further strengthening the power of the state engineer over irrigation and other water districts; the possibility of state

Adams: aid to communities in irrigation development; state construction of storage--either separately or in cooperation with the federal government; and the establishment of a State Department of Public Works.

State Investigation of Water Resources: The Marshall Plan

Baum: Was the club interested in the Marshall Plan and the state water and power acts?

Adams: The Club later took up the Water and Power Act, but it did not take up the Marshall Plan as such. There were lots of power problems before the public about 1915, and the last part of that decade. The power section was studying those questions. There was very clearly need for more rapid development of power. During the war the Council of Defense had to set up a power administrator in California to eke out the supply of power. We were just at the point, I think, when the Federal Power Commission had not yet fully developed its policies.

Along about 1920 the board of governors of the club asked the power section to summarize its discussions and views and make a report, and requested that the irrigation section participate with them.

Adams: Two sections came to an agreement on a number of resolutions. Among them was one recommending an appropriation to the state engineer of such an amount as he might designate as usable during the following biennium for making a study of the water resources of the state and so far as possible developing a comprehensive plan for their use. The irrigation section was interested in increasing our information regarding storage.

Baum: A comprehensive plan for the whole state, not just Central Valley?

Adams: We had in mind the whole state. One matter we had chiefly in mind was an investigation of the possibility of moving the surplus of the Sacramento into the San Joaquin. Information about storage on the Sacramento was meager. In fact, one of the most eminent engineers in the country and a man who had had long association with the problem in California made the statement in our section, "There just is no storage of consequence on the Sacramento." That was a shocking statement, but considering the knowledge and ability of the man who made it, it was very impressive.

Some time after this--I think it was in 1918 or 1919--Colonel R. B. Marshall, chief geographer of the U. S. Geological Survey, wrote to the

Adams: governor outlining what was known as the Marshall Plan.

The plan created a great deal of interest throughout the state. A high-powered publicity man, L. C. Davidson, was employed to promote the plan and to bring it to the legislature. A very capable man. He collected money up and down the San Joaquin Valley, small amounts from the farmers. He had quite a fund and there was a very active promotion. Colonel Marshall made many speeches in favor of it.

Baum: Was power a prominent feature of the plan?

Adams: It was primarily a water plan, but also involved income from hydroelectric power.

I heard Colonel Marshall speak on it several times. He spoke at the auditorium of the high school here in Berkeley. He told how he came to conceive that plan. He had come to California some years earlier to take charge of the topographic mapping by the Geological Survey under cooperative agreement with the state. He had an office in the top floor of the old brick civil engineering building on campus. He was looking out over the Golden Gate and thinking of the water that was flowing out of the Golden Gate from the Sacramento and the San Joaquin and this idea came to him, it was an

Adams: [illegible] governor multiplier what was known as the [illegible] plan.

The plan created a great deal of [illegible] throughout the state. A fire-[illegible] multiplier [illegible] L. Lewis, was [illegible] to promote the plan and [illegible] bring it to the level [illegible]. [illegible] collected money in and from the [illegible] small amounts from the people. [illegible] and there was a very [illegible] generally was very cooperative [illegible] like [illegible] a [illegible] it was only [illegible] a water [illegible] income from [illegible].

I heard [illegible] all [illegible] tions. He spoke at the [illegible] born in Berkeley. In [illegible] that plan. He had come to [illegible] multiplier to take [illegible] the political [illegible] with the [illegible]. He had an office in [illegible] the old [illegible] civil engineering [illegible] campus. He was [illegible] and the [illegible] the golden [illegible] from the [illegible] [illegible] and this [illegible] seemed to him [illegible]

Adams: inspiration. Over the years he kept it in mind and finally outlined the plan and proposed it to the governor.

Here is Colonel Marshall's report in full and his map. And also What They Say About the Marshall Plan published by the California Irrigation Association in 1920. That was the promoting agency.

What Colonel Marshall proposed was storage on the Sacramento at the Kennett site and grand canals down the east and west sides of the Sacramento and San Joaquin Valleys to irrigate the entire twelve million acres of land in the two valleys, water for the San Francisco Bay area and diversion of the Kern River through a long tunnel under the Tehachapis "which at a reasonable cost would provide all the water Southern California can reasonably get and perhaps would need for one hundred and fifty years." He recommended appointment by the governor of a commission of five to report on the general practicability of the plan and, if the findings were favorable, that the legislature immediately pass legislation setting the plan in motion.

His idea was that the state should authorize a bond issue of up to a billion dollars if necessary for construction and that the hydroelectric power to

inspiration. Even the year he kept it in mind and finally outlined the plan and proposed it to the governor.

Here is Colonel Marshall's report in full and his map. And also what they had about the Marshall plan published by the Sacramento Democratic Convention in 1920. What was the "protection" among.

That Colonel Marshall proposed at Sacramento and the Sacramento at the Sacramento and canals down the east and west sides of the Sacramento and San Joaquin Valleys to irrigate and reclaim twelve million acres of land in the two valleys, water for the San Francisco Bay area and also a canal of the Kern River through a low mural [illegible] navigable water at a reasonable cost [illegible] all the water [illegible] yet are [illegible] would need [illegible] years." He recommended appointment by the governor of a commission of five to report on the general practicability of the plan and, if the report were favorable, that the legislature [illegible] case legislation getting the plan in motion.

His idea was that the state [illegible] a bond issue of up to a billion dollars [illegible] for construction and that the hydroelectric power [illegible]

Adams: be developed at the various reservoirs would carry the full interest, depreciation, and maintenance on the construction work, leaving only the cost of construction to be paid for by the users of irrigation water and water for industrial and domestic purposes.

Baum: The water users would only have to repay the principal.

Adams: Yes, and that could be done in fifty years.

Colonel Marshall's topographic work had familiarized him with many reservoir sites but there had been no extensive engineering reports on those sites to determine their feasibility. He did say that the stream flow measurements of the Geological Survey and their survey of reservoir sites and his topographic work left no more field work to be done, that all that was necessary was for the state to authorize the project and the people to vote the bonds and construction could begin "tomorrow" and be completed in ten years without one cent of cost to the state or federal government. He certainly was an optimist. Evidently he didn't understand agriculture and how development goes on little by little over a period of years.

The idea of a comprehensive plan had been

be developed at the various reservoirs would cover the full interest, depreciation, and maintenance on the construction work, leaving only the cost of construction to be paid for by the users of irrigation water and under the industrial and commercial supervision.

The water would only be to repay the original.

Yes, and this would be done in fifty years.

Colonel Wheatley: Supposing the work and facilities were kept up with many, many years to come and there had been no exclusive privileges granted on those sites to a company which failed, would you do any that the other [illegible] the Government survey and their survey of the reservoir sites and this topographical work [illegible] would be lost, that will be at the [illegible] for the state to authorize the people [illegible] people to vote the money [illegible] bonds homestead [illegible] to [illegible] the cost of [illegible] to the state or [illegible] work. I am [illegible] an optimist. [illegible] he didn't understand [illegible] and how developments [illegible] on little by little over a period of years.

The idea of a comprehensive plan had been

Adams: advanced by the Alexander Commission in 1874. It proposed to divert the water of the Sierra streams southward, and in this way to irrigate the entire Sacramento and San Joaquin Valleys. It was really only a paper plan because it was not based on any thorough investigation, but rather on hearings and taking testimony in different parts of the valley.

When the Marshall plan was being considered a great deal of attention was being given to what could be done with the returning soldiers after the war. Under Secretary of the Interior Lane, very extensive investigations had been made in the south with reference to settling soldiers there, and also in the western part of the country. The Land Settlement Act in California had been passed. So one of Colonel Marshall's arguments was that his plan would furnish all the construction work they needed to take care of the returning soldiers in California.

Baum: A public works plan?

Adams: Yes, I suppose you could call it that. They would work as long as they wanted to and then they would settle down on the reclaimed land.

(Reads from "Irrigation of Twelve Million Acres" by Colonel Marshall, November 1920.)

Adams: advanced by the Alexander Commission in 1[illegible].
It proposed to divert the waters of the [illegible]
streams southward. In this way to irrigate
the entire Sacramento and San Joaquin Valley.
It was really only a paper plan because it was
not based on [illegible] but
rather on hearings and testimony in
different parts of the valley.

When the Reclamation [illegible]
a great deal of [illegible] given to what
could be done with [illegible] policies
in war. Under [illegible]
very extensive investigations [illegible]
dealt with rate [illegible]
and also in [illegible]
Land Settlement Act in [illegible]
so one of [illegible] dependability [illegible]
it also [illegible] Finally, all [illegible]
they moved in late [illegible] of the [illegible]
in California.

Sam: A public [illegible] [illegible]

Adams: Yes, I suppose you could call it that. [illegible]
work as long as they [illegible] to [illegible]
settle down on the reclamation [illegible].

(Hands [illegible] "[illegible]" [illegible]
by Colonel [illegible], November 1[illegible].)

Adams: Mr. L. C. Davidson endeavored to enlist the support of prominent people by asking them to serve on the advisory board of the California Irrigation Association. I find some very prominent people who agreed. Dr. Elwood Mead, President Wheeler, David Starr Jordan, President Ray Lyman Wilbur of Stanford, City Engineer M. M. O'Shaughnessy of San Francisco, and the president of the Irrigation Districts Association.

Baum: Did these people endorse the Marshall Plan or just the idea of some plan?

Adams: In general, I wouldn't say they endorsed the Marshall Plan, but they showed great interest in Marshall's proposals and generally favored an investigation. A number of newspapers endorsed the idea of the investigation.

Baum: You and others thought the plan had not been adequately worked out.

Adams: It was obvious it hadn't been worked out. The Commonwealth Club sections on power and irrigation wanted the State Department of Engineering to investigate the water resources and develop as far as possible a plan, but not specifically any one proposal such as the Marshall Plan.

Baum: Did the club take any action as a result of this study?

Adams: Mr. L. O. Davidson endeavored to enlist the support of prominent people by asking them to serve on the advisory board of the Californian Irrigation Association. [illegible] very prominent people were named. Mr. [illegible] Senator, President [illegible], David Starr Jordan, President [illegible], Chancellor [illegible], City Engineer [illegible], Commissioner [illegible], and the president of the Irrigation [illegible] Association.

[illegible]: Did these people endorse the [illegible] the [illegible] of the [illegible]?

Adams: [illegible] remember. I think it [illegible] [illegible] laws, but they showed great [illegible] in [illegible] and [illegible]. A number of resolutions [illegible] investigation.

[illegible]: [illegible] other than that the [illegible] been adequately [illegible].

[illegible]: It was obvious it [illegible] [illegible]. The Commonwealth Club was [illegible] and [illegible] [illegible] the State Board of Engineers to investigate the water resources and develop [illegible] as possible a plan, but not specifically [illegible] proposed such as the Marshall Plan.

[illegible]: Did the club take any action as a result of this study?

Adams: Yes. I asked the state engineer how much he thought he could use profitably in the biennium and he said $200,000, so we prepared a bill appropriating that amount to the state engineer's department to make such a study. I took it up to Sacramento and showed it to Mr. Bradford Crittenden--whether he was then senator or assemblyman I don't remember--. The club had already authorized us to promote that legislation. Mr. Crittenden said, "That'll be my bill." There was another bill appropriating $500,000.

Baum: Then your bill was for a general investigation and the other was to investigate the Marshall Plan specifically?

Adams: I do not recall the wording of the bill, but I think that definitely was in the minds of those who were pressing for it. After a few days Mr. Crittenden said he wouldn't promote our bill. Apparently, the pressure had become too great for the other bill. As I recall it, the bill that passed had some of the purposes we had outlined and I think $200,000 rather than half a million dollars.

Baum: What were the reasons why the Commonwealth Club was in favor of a more general type of investigation?

Adams: Perhaps I can best answer your question by quoting from my presentation to the club at the meeting on December 16, 1920, at which our proposals were approved: "So the first thing we are asking in our resolution is that such investigations be made as shall, so far as it is possible, help to work out state policies with the most complete conservation and utilization of these resources.

"Our section, I believe, had kept its mind directly on the facts, and I believe they are not in favor of or do not expect any appropriation that is aimed to be used to present something that is ideal and possibly that might, in the centuries to come, be worked out. We have in mind something very definite and specific, and that only such investigation be made as shall enable the state to go as far as is reasonably practical to go in working out a policy and plan for our water."

Baum: I read something by Franklin Hichborn and he said that in his opinion the public utility companies were trying to prevent the Marshall Plan because it included certain public power features, and that they therefore were trying to get something else, investigations or anything that would prevent the accomplishment of this particular plan.

Perhaps I can best answer your question by quoting from my presentation to the club at the meeting on December 15, 1930, at which my proposals were approved: "So far as this [illegible] resolution [illegible] investigation [illegible] shall, so far as it is possible [illegible] and utilization of these [illegible].

This section, I believe, [illegible] mind directly on the facts. [illegible] not in favor of [illegible] do not expect any [illegible] that is aimed to be used to suggest [illegible] ideal and possibly that [illegible] to come, be worked out. We have [illegible] very definite and [illegible] out a policy [illegible] plan [illegible]."

I [illegible] that in his opinion, the public utilities [illegible] were trying to prevent the Marshall [illegible] included certain public power features, [illegible] they therefore were trying to [illegible] investigations or anything that [illegible] accomplishment of this particular plan.

Adams: I don't recall any pressure on the part of the power interests. Our proposals regarding the investigation were endorsed by the power and irrigation sections, by a combined vote of 47 to 1. The power section included a number of representatives of the power companies. They also included important men not affiliated with power interests.

Baum: As you recall it, hydroelectric power was not an issue, at least in your section?

Adams: Well, what the power companies were interested in primarily at that time was, I think, to overcome the restrictions imposed by both the Federal Power Commission and the State Water Commission. They wanted less interference in the development of power under private auspices. That was their main contention in our sections, as I recall it.

Baum: Did they bring that up with regard to the Marshall Plan?

Adams: Well, we didn't discuss the Marshall Plan as such. We were already embarked on this general study of what we thought was necessary.

Baum: Did Colonel Marshall speak at the Commonwealth Club?

Adams: No.

Baum: Did you know him?

Adams: Oh yes, and he was a very fine gentleman. I wish

Ada [illegible]: I would recall our pressure on the part of the lower interests. Our proposals regarding the unreliability were endorsed by the House and firmly [illegible] section by a combined vote of [illegible] to 1. The power section included a mixture of representatives of the power companies. They also had due [illegible] and affiliated with power interests.

[illegible]: If you recall it, independently [illegible] an issue, at least in your mind.

[illegible]: Well, that the now [illegible] companies [illegible] politically at that time [illegible] the [illegible] distributions [illegible] Democrats [illegible] Democrats [illegible] the [illegible]. They waited less interference in the development of power under private auspices. [illegible] in our auspices, [illegible].

[illegible]: Did [illegible] to [illegible] the [illegible] land?

[illegible]: Well, we didn't change the [illegible] small [illegible] we were already engaged in this [illegible] why what we thought was necessary.

[illegible]: Did [illegible] Roosevelt speak at the [illegible] the [illegible]?

[illegible]: No.

[illegible]: Did you know him?

[illegible]: Oh yes, [illegible] a very fine gentleman. [illegible] with

Adams: some day the California Historical Society would put a marker up at Shasta Dam for Colonel Marshall. He was the man who found the Kennett site. He did that through his topographic mapping, and that was the key to our whole Central Valley development.

Baum: Did you ever discuss with him why he stuck to his plan rather than preferring a more general investigation first?

Adams: No.

I remember one day I got a call from Mr. E. O. McCormick, who was vice president of the Southern Pacific Company. He asked me to come over and talk about the Marshall Plan with him. He was strongly in favor of it. He told me Mr. Davidson had told him that my failure to help out on that plan was hindering him. That may have just been his way of putting the proposition, because I don't think the influence of any one individual was of any great moment at that time. Anyhow, he tried to convince me that I should support it. We talked for an hour or two on it and then I had to leave to keep an appointment in Berkeley. It was a very pleasant meeting, but it didn't change my mind.

Baum: Did it change his mind?

Adams: No, I don't think so. He was very much interested.

Adams: He thought it would develop the state and the Southern Pacific Company has always been anxious to cooperate in work that would increase the agricultural development of the state.

Well, while the Marshall Plan was up the Water and Power Act was up. The Marshall Plan people were very much against the Water and Power Act because they thought it was going to interfere with their proposals.

The first investigation authorized by the legislature was carried out under the immediate direction of Paul Bailey, then assistant state engineer. He developed what was known as the Bailey Plan. When, in about 1928, Edward Hyatt became state engineer the name was changed to the State Water Plan and Colonel Marshall's name gradually became disassociated with what was being done.

Colonel Marshall, of course, was exceedingly disappointed. He later was given a position in the Highway Department, as a landscape engineer in connection with the landscaping of the highways. My last meeting with him, I called on him up at Sacramento just to talk over past history. This was some time later. He had had a very unfortunate illness and had lost his voice. The doctors had to remove his larynx and he couldn't talk. They

Adams:

[illegible] thought it would develop the whole area of Southern Pacific [illegible] company has always been anxious to encourage [illegible] work that would increase the agricultural development of the state.

Well, [illegible] the [illegible] Imperial Valley and lower Salt [illegible]. The [illegible] people were very good [illegible] because they [illegible] with the [illegible] problems.

The first irrigation [illegible] practically [illegible] under [illegible] protection of [illegible] engineer. [illegible] [illegible] Mexicali [illegible]. [illegible] [illegible] Stella Metz [illegible] and Dolores [illegible] [illegible] finally became disassociated with [illegible] [illegible] school [illegible] generally, [illegible] disappointed. [illegible] Bishop's [illegible] [illegible] connection with the Los Angeles [illegible] [illegible]. My last meeting with him, I really [illegible] arrangements just to talk over past times. [illegible] [illegible] some time later. He had lost a [illegible] [illegible] illness [illegible] [illegible]. [illegible] [illegible] to remove his [illegible] and be comfortable. [illegible]

Adams: made a hole in his chest and brought his windpipe up to that hole so he breathed there. The General Electric Company devised an electrical scheme by which by shaping his mouth as he would if he were talking, he could express himself and talk a little.

He had many friends. Everyone liked him, but I don't recall that any of those who were really qualified to pass on the feasibility of that project from an engineering standpoint were in favor of it. It wasn't a plan, it was an idea, but we need inspirations of that kind. As the result of his proposals great sentiment was created for a state study, right in the grass roots up and down the state. So I give credit to Colonel Marshall for that, as well as for finding Kennett Reservoir.

Baum: Was Colonel Marshall the type of man who would modify or change his proposals, or would he stick to his original idea?

Adams: Even before the legislation authorizing an investigation was passed I believe Colonel Marshall must have reconciled himself to the fact that investigation did not specifically relate to the Marshall Plan. He must have endorsed the following statement preceding the description of the plan as published by the California Irrigation Association November

Adams: 20, 1920: "What is primarily desired is an immediate, complete survey by the state of all possible reservoir sites, a determination of the maximum amount of water development practicable, then the necessary legislation to put it into effect."

Baum: Do you think the Commonwealth Club was effective in changing the minds of some of the members of the legislature?

Adams: The irrigation section, throughout the years and especially in the early years, reviewed every bill in the legislature relating to water and made recommendations and transmitted them to the committees. For a time I think we had a great deal of influence, I'm sure we did. In the early years our section did quite a little direct promoting of our legislation at Sacramento by appearance before the committees. On this matter in 1920 when we were asking for a general study of water resources, the Senate and assembly committees on irrigation held a joint meeting in the assembly chambers for us to present our case. Quite a group of the section went up. Mr. Galloway, I think, carried the burden of the argument. He was a very effective speaker and a very able engineer, highly respected.

[illegible]: Q. 1330: "Did it [illegible] decide to [illegible] complete survey [illegible] of all [illegible] voice sites, a determination of the maximum [illegible] of [illegible] development [illegible] legislation to put it into [illegible]?

[illegible]: [illegible] the [illegible] in operation [illegible] the [illegible] Initiative?

[illegible]: The immediate action, [illegible] personally in the early [illegible] in the land [illegible] commercialisations and [illegible] Labour, [illegible] I think we [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] by [illegible] before [illegible]. [illegible] rather in 1920 [illegible] [illegible] study of [illegible] assembly committee on [illegible] meeting in the assembly chamber for [illegible] our area. [illegible] a group of [illegible] Mr. Hallaway, I think, carried the [illegible] amendment. He was a very [illegible] very able [illegible], highly [illegible].

State Water and Power Act

Baum: What was the Commonwealth Club's stand on the State Water and Power Act, which first came up in 1922?

Adams: That was an initiative which authorized the state to develop and distribute the water and power and gave the state rather complete authority to go into the water and power business. Of course, it was immediately objected to by the power agencies. There was a very, very bitter campaign in connection with it. You know that Rudolph Spreckles was the one who chiefly sponsored the act. He was the director of what was, I think, known as the Water and Power League to promote the measure.

The matter was referred to the section on power and the section on irrigation. It was discussed at great length. At the final meeting before the club I moved that the club disapprove the act. The motion carred 101 to 7. (Vol. XVII [June, 1922] p. 269.)

Baum: Why were you against the act?

Adams: I was convinced from our first discussions of it in the club that it was not desirable.

Baum: Why did you first oppose it, and then what caused you to change your mind?

State Water and Power Act

Brown: What was the Commonwealth Club's stand on the State Water and Power Act, which first came up in 1922?

Adams: That was an initiative which authorized the state to develop and distribute the water and power of rivers, the state to employ a [illegible] and power engineer. Of course, it was immediately objected to by [illegible] as a grandiose [illegible] and a very, very bitter [illegible] with [illegible] on behalf of [illegible] the state. [illegible] was, [illegible] because [illegible] the [illegible].

The subject was referred to [illegible] on [illegible]. [illegible] a great [illegible]. At the first [illegible] I recall [illegible] the club discussion [illegible]. The [illegible] passed [illegible] 1917. [illegible]

Brown: By [illegible] against [illegible]?

Adams: I was convinced from our first discussion [illegible] the effort [illegible] it was not desirable.

Brown: Why did you first oppose it, or [illegible] you to change your mind?

Adams: Shortly after that action by the club on my motion, I was asked by the University Club at Los Gatos to talk on the act. It was prior to the election. Wanting to be sure that I'd be entirely objective, I went over all the arguments for and against and wrote out what to me seemed to be the strongest arguments both for and against. I wanted to speak before the University Club there in such a way that they wouldn't know when I got through whether I was for it or against it.

That led me to change my mind. I wrote a letter to Clyde Seavey, then city manager of Sacramento, I think, who was one of the principal proponents of the act and a long-time friend, giving my reasons why I was going to vote for the act. That was the first time I had taken a stand for or against any public issue of that kind. As I look back now I'm surprised that I did it, but I did.

Well, I wrote this letter to Mr. Seavey and he gave it to the San Francisco Examiner. I had long been in favor of state control of our development of water and power. I felt that it was necessary for the state to have the authority to adjust conflicts between power and irrigation in what seemed to be in the highest public interest, to refuse permits to

Adams: appropriate water for projects that would prevent a more complete use of those resources for either power or irrigation. So I liked the power the state was given in the Water and Power Act.

There was already great controversy over the influence the power companies were able to exert in the government, and in the controversy over the permanent or limited licenses for power development. I felt that the authority granted the state wasn't adequate to adjust those differences. That was sort of a basic feeling with me. In that campaign I saw more and more the great influence that could be exerted by the utilities in their favor. I think that had some material influence on me.

There was no great need for the Water and Power Act in matters of water for irrigation or municipal purposes. On the other hand, the state wasn't given sufficient authority in the Water Commission Act to refuse appropriations which the commission might deem not in the best public interest. I had the idea then, as a good many others did, I think, that water should be devoted to the use which was most economic for the state as a whole, that a wasteful use of water should not be permitted, that the state should have authority to prevent such wasteful use.

Adams: In summing up all those arguments as I did in my statement to Mr. Seavey, I said I was going to vote for it. I was roundly condemned, though not to me personally, by some of my engineering friends who had opposed it, and by some of those in the section.

Baum: But I can't see why you opposed it in the first place.

Adams: I can't explain it any more than I have. I just changed my mind.

I had some satisfaction because I received high commendation from two of the men I admired most in those days, Clyde Seavey, and O. K. Cushing, one of the finest men I ever knew and one of the finest public citizens I ever knew. I probably didn't have any influence one way or the other. Anyhow, it didn't pass.

Baum: When did your letter appear in the Examiner?

Adams: (looking in his scrapbook). November 6, 1922.

Baum: That must have been a day or so before the election.

Adams: Yes. In addition to the discussions reported in the Transactions, a Friday luncheon on November 3, 1922 just before the election was devoted to that subject. The principal speaker was Rudolph Spreckles, for, and against it was Allison Ware, then practicing law in Chico. He previously had been very active

[illegible]: In summary to all those arguments as I did in my statement to [illegible] convey, I note I [illegible] to vote for it. I was [illegible] not to be personally, by some of my [illegible] friends who [illegible] opposed it. [illegible] the question.

[illegible]: But I could see [illegible] it in the first [illegible]. I could explain it [illegible] my mind.

I had some satisfaction [illegible] I mentioned [illegible] amendment [illegible] the first [illegible] public [illegible] difference [illegible] it didn't mean.

[illegible]: Did your table appear [illegible]

[illegible]: Looking in the [illegible]

[illegible]: That must have been a [illegible]

[illegible]: Yes. In addition to the [illegible] the Jerry Wilson, a Friday Dunbson on [illegible] 1922 just before the election was [illegible] subject. The principal opinion was [illegible] for, and a [illegible] it was Milton Ware, [illegible] law in Ohio. He previously had been very active

Adams: in the club while at the State Normal School in San Francisco. He went from there to become president of the State Normal School at Chico, then went into the war in 1917, and went into law after that. Present, 779 at that luncheon. That was a hot subject.

It came up again in 1924 and was discussed by the power section in the club, not by the irrigation section. Fred Fowler was then chairman of the power section. He asked me to be present and participate. I didn't make any statement at that time, although I did later submit a brief statement which was included in the Transactions.

Baum: Hasn't the Commonwealth Club spent a lot of time on various water problems?

Adams: Yes. I looked through the record the other day and found some 21 different reports on water, beginning back in 1904. I made a list of them. Here it is. (See Appendix for list.) This list does not include reports on the municipal water supply for San Francisco and the East Bay. I told you earlier about the reports of the section on conservation and of the section on irrigation. About 1929 I was asked to form a new section on water resources and we had a wonderful section. After about two years Charles H. Lee took over as chairman. During the 30's the

Adams: section made three lengthy reports on the Central Valley project. Later there were reports on Central Valley power by the section on public utilities, a very fine report on California water policy fundamentals by the section on agriculture of which Samuel H. Greene was chairman, reports by the sections on mineral resources and on public utilities. About 1950 the present water problems section was organized, of which Sinclair O. Harper, Elmer Stahl, and finally Bert L. Smith have been chairman. The principal subject under consideration by the water problems section has been some phase of state water plan. The section is now (1958) studying the state responsibility in water problems.

Changes in the Commonwealth Club

Baum: How has the Commonwealth Club changed since those early days shortly after your father founded it?

Adams: The basic purposes and ideals of the club have not changed. They are constantly kept before the membership by quotations from the early presidents being published in the weekly bulletin of the club, The Commonwealth. There have, however, been changes which I think have had an important effect on the work of the club. These changes, I think, have

Adams: been evolutionary rather than revolutionary. I might mention a few of these changes.

The first of these, I think, was in reference to the ideas as to membership. The original thought was a group of a few hundred scholarly men who would meet monthly at dinner and discuss the important controversial issues of the day after thorough investigation of all of the facts relating to the issues. As President Wienstock expressed it in one of his early annual addresses, whenever a man was found who had won honorable success in his sphere of life, whose reputation was above reproach, and whose opinions were worth knowing, his membership was invited. To meet the growing financial needs of the club and otherwise to increase its influence, it was found desirable to undertake a more active canvass for membership, while still very carefully screening all applicants or proposals for membership, mainly as to their character and reputation. More money was needed for the promotion work of the club and for its investigational activities. Continued through the years this policy of expansion has brought our present membership to more than 8000.

The weekly luncheons at which emminent speakers

Adams: addressed the membership on important issues of current interest were not included in the original plan. They have enabled members to have contact with the club without participating in the investigational work of the sections, and have had much to do with increasing the membership and otherwise extending the influence of the club over the state. However, they were largely influential late in the second decade in reducing attendance at the monthly dinner meetings and the ultimate elimination of the dinner meetings and the substitution of the monthly luncheon report meetings at which sections present their findings.

Going back to the work of the sections, I think more work was done by the individual members of the sections some years ago than at present. Formerly, sections with which I was connected or which I occasionally visited seldom if ever had a speaker. The sections were generally made up of the men most qualified to discuss the questions and present the facts regarding matters under consideration. Individual members or subcommittees would dig up any information needed. The emphasis was on obtaining the essential facts regarding the issues being discussed and then developing the arguments pro and

[illegible] addressed the membership on important issues of current interest were included in the [illegible] of [illegible]. These have enabled members to [illegible] with the club without participation in the intellectual [illegible] of the society. [illegible] with [illegible] as long the [illegible] extended the influence of the club [illegible] the [illegible]. They were [illegible] in the second [illegible] in [illegible] [illegible] medicine and the [illegible] of [illegible] medicine are the [illegible] [illegible] the [illegible] medicine of [illegible] [illegible].

Since [illegible] to the [illegible] of the society, [illegible] work was done by the individual members of the [illegible] some years ago than at [illegible]. [illegible] sections with which I was [illegible] [illegible] [illegible] violated [illegible] [illegible]. The [illegible] were [illegible] [illegible] [illegible] [illegible] [illegible] discuss the questions [illegible] [illegible] [illegible] [illegible] with [illegible] [illegible].

Individual members or subcommittees [illegible] information [illegible] needed. The emphasis was [illegible] the essential facts regarding the issues [illegible] [illegible] and then developing the [illegible] [illegible]

Adams: con, thus providing a sound basis for later discussions in club meetings. Now, the main feature of section meetings is an address by some speaker invited to present his side of the subject.

In what I have said I do not mean to imply any criticism of the present section of the club except to emphasize my feeling that under the present system the members of the section do less than formerly.

WORK WITH VARIOUS ORGANIZATIONS

U. S. Chamber of Commerce, 1926

Baum: What work did you do with the United States Chamber of Commerce, Western Division?

Adams: That was merely an example of a good many public service contacts. The U. S. Chamber of Commerce, Western Division, wanted a general program on water conservation and control to be presented at their meeting in Seattle in 1926. I don't know how I came to be asked to prepare such a presentation. I, of course, went to the original sources for information on that subject, which were the state engineers of the various western states and the Bureau of Reclamation and one or two others who were brought into it. I wrote to each of these western state engineers and had responses from California, Oregon, Washington, Nevada, New Mexico, Utah, Montana, Idaho, Wyoming, and Colorado. The state engineers or their representatives were present at the meeting to make brief addresses. My particular function was to present a brief introduction to the talks by the others, a general overall picture of water conservation problems in the West. The Bureau of Reclamation sent a representative from Utah.

WORK WITH U.S. DEPT. OF INTERIOR

U. S. Chamber of Commerce, 1929

[illegible]: What work did you do with the United States Chamber of Commerce, Western Division?

[illegible]: The work was merely an example of public service articles. The U. S. Chamber of Commerce, Western Division, worked [illegible] conservation and control [illegible] meeting in Portland in 19[illegible]. [illegible] are to be asked to [illegible] of course, [illegible] information on that subject. [illegible] experience of the various [illegible] reports of reclamation and [illegible] were brought into it. I [illegible] women's [illegible] engineers and [illegible] officials, women, [illegible] Utah, [illegible] Idaho, Oregon, [illegible] can a engineer or [illegible] women [illegible] at the meeting to give brief addresses. [illegible] function was to present a brief introduction [illegible] talks by the others, a report by [illegible] water conservation problems in the West. [illegible] of Reclamation sent a representative from [illegible].

Adams: Mr. W. R. Williams, state superintendent of banks of California, came and discussed the financing of irrigation enterprises through the sale of bonds. I had a letter from Dr. John A. Widtsoe, a former president of the University of Utah and of Utah Agricultural College. All together, we had a fine representation.

Baum: Why was the Chamber of Commerce particularly interested at that time?

Adams: This was 1926. There had been a lot of discussion following the war with reference to extension of reclamation and the functions of the state and federal governments and it was very properly a subject for them to undertake. Conservation and control of water was basic to the industry and economy of the West.

Baum: Was there any opposition from the Chamber of Commerce to further reclamation?

Adams: Not that I remember.

Baum: Why I ask -- I read a whole series of papers from a 1927 meeting of the American Society of Civil Engineers and most of the papers were opposed to any further reclamation because of the agricultural depression. They said we had too much land in production already.

Adams: That subject was one of the important ones discussed

Jones: Dr. R. G. Williams, state superintendent of banks of California, came and discussed the financing of irrigation enterprises through the sale of bonds. I had a letter from Dr. Glenn C. Wilcox, a former president of the University of Utah, and of Utah Agricultural College. All together, it was a fine representation.

Hurt: Why was the chamber of commerce particularly interested at that time?

Jones: This was 1926. There had been a lot of discussion following the war with reference to reclamation projects, and the building of the Boulder Canyon project, and it was very obvious that it was time to undertake. Consequently, the chamber of commerce went to the industry and country [illegible].

Hurt: Was there any opposition from the farmers to irrigation projects?

Adams: Not that I remember.

Hurt: Why not -- I [illegible] a whole series of articles [illegible] 1927 meeting of the American Society of Civil Engineers and most of the papers were devoted to further reclamation because of the agricultural depression. They said we had too much land in production also.

Adams: That article was one of the important ones discussed

Adams: during that period. The eastern people always had a certain amount of opposition to federal reclamation in the West. They were not willing to promote any developments that would compete with them.

Baum: Was any of this opposition, to your knowledge, based on power, private power companies opposing federal dams?

Adams: Over a long period of years while the power policies of the Federal Power Commission were being developed, there was a very decided opposition by the power companies to federal regulation. Under the Federal Power Commission Act, the commission had authority to grant licenses to private industry or public agencies for the development of power. Also, there was control of rights of way for reservoir construction under the regulations of the General Land Office as to lands over which the federal government had jurisdiction.

Baum: I believe I interrupted your telling about the meeting.

Adams: Mr. Paul Shoup, president of the Southern Pacific Company, was chairman of the sessions at which our presentations were made. Our subject occupied one morning. Mr. Shoup was very much pleased with the presentation. He told me he would make every effort to have the record published, but he apparently wasn't able to do that. My overall presentation was published

Adams: during that period. The eastern people always [illegible] a certain amount of opposition to federal regulation in the West. They were not willing to promote any development that would compete with it.

Crum: [illegible] any of this opposition [illegible] based on power, [illegible] were concerned [illegible] federal dams?

Adams: Over a long period of years while the power office of the Federal [illegible] Commission were in development, there was a very decided opposition to the power companies to federal regulation. Under the Federal Power Commission Act, the commission [illegible] grant licenses to private industry [illegible] for the development of [illegible]. Also, there was [illegible] of private [illegible] from preserving [illegible] resources [illegible] which [illegible] Federal government [illegible].

Crum: I believe I interrupted you [illegible].

Adams: Mr. [illegible], president of the [illegible] Company, was obstinate in the case of [illegible] proceedings [illegible]. The subject [illegible] [illegible]. Mr. [illegible] was very much [illegible] [illegible]. He tried [illegible] to have the proposed [illegible], but he [illegible] able to do [illegible]. My overall impression was [illegible]

Adams: in several of the western periodicals. All the addresses were mimeographed.

Baum: Where are they available?

Adams: I'm sure I gave a copy to Gianinni Library. I have one. I have an extra copy which I can give to Bancroft, if desired.

California State Chamber of Commerce

Baum: Did you work with the California State Chamber of Commerce?

Adams: Oh yes. My contact with that organization went back to 1911 or 1912. The organization then was the California Development Association. Mr. Robert Newton Lynch, who was general manager of the California Development Association, told me they were anxious to improve the information they made available for public distribution to interest people in coming to California. There was a strong feeling in those days that with the opening of the Panama Canal there would be a great influx of settlers from southern Europe. The subject was considered at many meetings of the association. I attended a good many of them. Mr. Lynch asked if I wouldn't outline what I thought would be the type of information they should gather and how it should be gathered. I gave the matter a lot of thought and

Adams: talked with Dr. Hilgard, who was then in retirement. I finally wrote Mr. Lynch outlining a procedure which seemed to me would accomplish what they had in mind. He told me a few weeks later that he carried that letter around with him in his pocket and had shown it to many of the members of the association and they were very anxious to proceed along those lines. So he sent his chief assistant, Miss Grace Trumbull, over and we had a number of talks with reference to details.

The association employed two young men, I can't remember the name of one of them, the other was Mr. Sturdevent, a recent graduate of the University of California College of Agriculture. They went to Lassen County and made a survey of conditions, land, water, irrigation, crops, and other matters affecting agricultural and industrial development in that area. Shortly after that Mr. Sturdevent resigned to go into the fruit packing business. The idea was continued for several years, more or less from the California Development Association office. Meanwhile Miss Trumbull had resigned to marry my close friend, Charles Wesley Reed, and was no longer available.

A year or two later the association decided to follow a different procedure. They appointed two recent

Adams: students of Dr. Cottrell, then head of the Department of Political Science at Stanford, and they came over to see me to talk over the whole program. The association organized then a department of research and Mr. Herbert F. Ormsby, one of the two, was placed in charge and he continued in charge of that department until his death last year. He did a very valuable piece of work. Dr. Connolly, who was with him at our meeting, was associated with it. I remember Dr. Connolly told me on several occasions that as the result of our discussions they started out on the right track.

California Economic Research Council

Adams: The California Development Association had a research committee headed by Henry M. Robinson, president of the Security First National Bank in Los Angeles. Dr. David Weeks of the University of California was working with that committee, probably a member of it. That leads us up to the development of the Economic Research Council.

Baum: When was that?

Adams: Well, in 1925 Mr. Robinson called a meeting in Los Angeles to consider the creation of an economic research council to bring together all the public and private agencies in California interested in collection

Adams: students of W. Cottrell, then head of the Department of Political Science at Stanford, and they came over to see me to talk over the whole [illegible]. The association organized then a [illegible] of [illegible]. Herbert E. Hoxby, one of the [illegible], was [illegible] in [illegible] and he continued in charge of the [illegible] until his death last year. [illegible] Cottrell, who was [illegible] [illegible] was associated with it. [illegible] Possibly this was one of a [illegible] [illegible] interests have always [illegible] [illegible].

California Citizens Research Council

Adams: The California Citizens Research Council was a spontaneous feeling by many [illegible] the community that Kathryn [illegible] in Los Angeles [illegible] David Weeks of the University of California worked with that committee, probably [illegible] it. That leads up to the development of the Citizens Research Council.

Adams: When was that?

Weeks: Well, in 1954 Mr. Robinson called a meeting in Los Angeles to consider the organization of an economic research council to bring together all the public and private agencies in California interested in collection

Adams: of statistical data of an economic nature. The thought was this, that all these agencies were proceeding independently, they had no contact with each other. Mr. Robinson thought an economic research council would bring them together and greatly improve the statistical material being gathered by attacking it cooperatively and avoiding duplication. Dr. David Weeks is generally credited with originating the idea of such a council.

Something over 120 representatives of federal, state, business, and commercial interests attended that conference. I think Dr. Weeks had a great deal to do with making up the list of those who came. Stanford, the University of California, the University of Southern California, and Pomona and Claremont Colleges sent representatives.

Baum: Was it largely academic?

Adams: Oh no, chambers of commerce, business organizations, the Forest Service, the director of the State Mining Bureau and other state offices were represented. They decided at that meeting to form a council and appointed a committee to draft a plan of organization.

In due time they set up committees. The committee on agricultural economics was headed by Ralph Taylor of the California Agricultural Legislative Committee;

Adams: Cary Hill was chairman of the committee on natural resources; I don't recall who were chairmen of the industrial economics and business research committees; I had the job of chairman of the irrigation economics committee. Dr. Willard E. Hotchkiss, head of Stanford Graduate School of Business Research, was made chairman of the Council and the chairmen of the various committees with the chairman and vice-chairman consituted the executive committee. Herbert F. Ormsby was secretary of the Council. The procedure was to hold two meetings a year, alternating between San Francisco and Los Angeles. The committees all became very active and each reported at those meetings. Whatever conclusions the committees reached were presented to the board of directors of the State Chamber and they endorsed, I think, most of the recommendations, if not all, of the various committees.

I naturally recall most about my committee on irrigation economics. I won't name all the members of the committee but there were representatives from the University, the Federal Land Bank, the Pacific Gas and Electric Company, the Irrigation Division of the Department of Agriculture, State Engineer McClure, State Reclamation Engineer Barton--Mr. Ormsby always sat in with us. We had frequent meetings. I should

Adams: Yes, I was chairman of the committee on natural resources; I don't recall who were chairmen of the industrial research and business research council; I had the job of chairman of the irrigation [illegible] committee. Mr. [illegible], [illegible], head of [illegible] [illegible] of Southern [illegible], was the chairman of the council and the chairmen of the various committees [illegible] constituted the executive committee. [illegible] was secretary of the council. The [illegible] was [illegible] two [illegible] a year, alternating [illegible]. The committees all [illegible] and reported at the meetings. [illegible] the committees reached were [illegible] to the [illegible] directors of the State Chamber, [illegible] they [illegible], [illegible], most of the recommendations [illegible] the various committees.

I naturally recall most [illegible] irrigation economics. I would [illegible] of the committee but there were representatives [illegible] the University, the Federal [illegible] and Electric Company, the Irrigation District [illegible] Department of Agriculture, State [illegible], State Reclamation Engineer [illegible]-- [illegible] met in with us. We had frequent meetings. I should

Adams: say that the major portion of our meetings was devoted to studying the state water conservation program. I find that I have here An Outline of Factors Governing the Economic Feasibility of the Proposed State Water Conservation Program.

Baum: What date?

Adams: May, 1929. Two or three years after the council was organized.

Dr. Hotchkiss continued as chairman of the council for about two years. Then he left, I believe to go to Harvard as dean of their graduate business school. He was succeeded by G. R. Douglas, who had been vice-chairman. He served for one or two years and then they wished the job on me for a couple of years. At the end of my term Dr. Weeks was made chairman.

I was very enthusiastic about the council. During my chairmanship I made it my business to visit each of the committees during the general sessions of the council and so I kept in contact and,of course, in very close contact with Mr. Ormsby in San Francisco. We got out a mimeographed publication, a sort of practice code for chambers of commerce with the idea of systematizing their work.

Baum: Informational or procedural?

Adams: Procedural more than anything else. We also published

Adams: say that the major [illegible] of our position was to stop [illegible] studying the [illegible] conservation movement.

[illegible] that I have [illegible] definition of [illegible] towards the [illegible] possibilities of the [illegible] state conservation [illegible].

[illegible]: What date?

[illegible]: May, 1952. [illegible] those years after the council was organized.

Dr. [illegible] has [illegible] of the [illegible] about the [illegible]. [illegible] to get [illegible] as [illegible] successful by [illegible]. [illegible] [illegible]. [illegible] they visited the [illegible] on the [illegible] the end of my term [illegible].

I was very enthusiastic [illegible] helping by chairmanship [illegible] believe [illegible] visit each of the committees [illegible] the chairs of the council [illegible] and, of course, in very close contact with [illegible] than that. We got out a newsletter [illegible] publication, [illegible] work or practice [illegible] conference [illegible] the idea of establishing [illegible].

[illegible]: Informal [illegible] or procedural?

Adams: Procedural [illegible] been any [illegible].

Adams: a list of the agencies gathering the data that came within the scope of the council. I don't recall any other publications other than mimeographed publications of some committees.

I was very much disappointed when a year or two later the council ceased to function. Dr. Weeks was first elected chairman in November, 1933. He was reelected a year later. The final meeting was in 1935. Dr. Weeks said this recently with reference to the discontinuance of the council: the multiplicity of federal agencies and state relief agencies growing out of the depression made it difficult to hold meetings. There was a rash of various meetings. I think creation of the State Planning Board had something to do with discontinuance of the Research Council.

Baum: The council just died.

Adams: It died as the organization was set up, but for several years at the annual meetings of the State Chamber a report was made on behalf of the Economic Research Council by Mr. Harrison S. Robertson, who was connected with the Oakland Chamber of Commerce. It was merely a one man report and didn't represent the work of the committees, which had ceased to function.

There's a fairly complete file of the work of the council in Giannini Library. The last minutes are

Adams: for 1935.

I said I was enthusiastic about the council and I was, but I recognized what I considered one difficulty, that is, that we had to report to the state chamber of commerce. At the end of my term as chairman I had reached the tentative conclusion that the work of the council would be stronger if disassociated from the state chamber and continued under the auspices of the universities of the state. But I did not talk this over with anyone except Dr. Joseph E. Davis of the Stanford Research Institute. I might note that the business economics section of the Commonwealth Club has recently proposed establishment of a statewide economic planning agency for fact-gathering and acting as a clearing house for economic information. The report is in volume 53, no. 3, Transactions of the Commonwealth Club.

Publication of Bulletin 21, Irrigation Districts in California, 1929

Baum: What did the Economic Research Council have to do with Bulletin 21?

Adams: I had been planning for some time to prepare a new publication on California irrigation districts to follow up my Bulletin 2 published in 1916. I had,

Adams: in fact, made arrangements with State Engineer McClure to have Mr. E. C. Eaton, one of the assistant engineers, work with me on it and be co-author. The general program and objectives of the Economic Research Council and my contact with it undoubtedly broadened my conception of the idea. I brought it before the Irrigation Economics Committee and they endorsed it. The State Chamber also approved it. I took it before the Irrigation Districts Association as a project of the Economic Research Council and they approved it. So when the work was undertaken and men were sent into the field to gather the material, the districts knew what it was all about. When Paul Bailey succeeded Mr. McClure as state engineer in 1926 he declined to let Mr. Eaton participate as a co-author. I think Mr. Wagner, the secretary and manager of the Irrigation Districts Association, was not very much in favor of it. I think he had in mind preparing some kind of a report himself on irrigation districts.

One reason for broadening the scope of the inquiry was this. Irrigation districts were constantly besieged by financial institutions and others making inquiry as to the status of the district. The financial interests, of course, had in mind the purchase of bonds. It was obvious the situation would be greatly improved

In fact, Dade [illegible] with [illegible]
to have Mr. F. O. [illegible], one of the assistant engineers.
[illegible] it and he co-author. The general
program and objectives of the economic research [illegible]
and my contact with it [illegible] and my cor-
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[illegible] and they [illegible] it. The [illegible]
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Economic Research Council [illegible]
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The reason for [illegible]
inquiry was this. [illegible] Districts was [illegible]
[illegible] financial institutions [illegible]
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interests, [illegible]
[illegible]

Adams: if the state would have in its possession all essential information so those interested could go to the state for the information rather than to the various districts.

The idea was to make the report complete for all the districts as of the date of preparation of this report, 1928, and that there should then be an annual compilation by the state engineer and the Bond Certification Commission and publication of supplemental bulletins. That was done, as you know, and those bulletins--the 21a, -b, -c, and so forth series--have been very valuable.

Baum: In Bulletin 21 you had a lot of information as to crops, etc. and historical information. I don't believe the supplemental bulletins are nearly as complete.

Adams: The Bond Certification Commission, as it developed in later years, chiefly I think due to the attitude of Harmon Bonté, the secretary, became less interested in the general agricultural data, crops, use of water, quantities of water, than in the financial data. The general data seemed to me exceedingly desirable because it was the background for the financial soundness of the enterprise. About a year or two before my retirement I proposed that we, jointly with the state

Adams: engineer and the Irrigation Division of the Department of Agriculture, bring this publication down to date. The matter was approved by the dean and by State Engineer Hyatt. Mr. Ewing was to be joint author. We prepared a prospectus and the dean and the state engineer tentatively allocated the necessary funds. Then it went to Mr. Bonté of the Bond Certification Commission and he wanted us instead to prepare a report on reclamation districts. Mr. Hyatt wasn't willing to go ahead with the project unless he had Mr. Bonté's approval.

Baum: Complete information, or just financial on reclamation districts?

Adams: I don't recall. Probably just financial. Neither Mr. Ewing nor I was willing to undertake that project.

Baum: You were more interested in irrigation districts.

Adams: Yes.

Irrigation Districts Association

Baum: Did you attend Irrigation District Association meetings?

Adams: It was my general practice to attend all the meetings as a visitor. As far as I know, I was in on the earliest of the meetings. I enjoyed those meetings very much. I was not only interested in irrigation districts but I was interested in the people involved

Adams: in these districts and knew so many of them intimately.

Baum: You must have known Mr. A. L. Cowell then.

Adams: Mr. Cowell and I were very close friends. He and I together worked on drafting irrigation district legislation in the early years. I think I told you that he was a newspaper man and he had to do with the organization of South San Joaquin and Oakdale irrigation districts. He was on the Stockton Mail, I think it was. He had earlier studied for the ministry in a little school north of Stockton, Woodbridge.

Baum: He was an attorney, wasn't he?

Adams: His interest in this irrigation legislation led him to study for the bar and pass the examinations. He went then into the practice of law.

Baum: He was first a minister?

Adams: He never finished with the ministry. He spent some years at the school and then switched to newspaper work and then to law. He was a very, very fine man, very active, and always one of the leaders in the Irrigation District Association.

Baum: I heard that he never made much money because he spent so much time on irrigation district work, much of which he did free.

Adams: I wouldn't be surprised. The attorneys for districts

Adams: who attended those meetings were always very helpful. The newer districts always had questions for the attorneys to answer. They got a lot of help and guidance from the lawyers. There was always an attorneys' committee to deal with questions that came up.

Baum: Was that one of the major functions of the Irrigation Districts Association?

Adams: There were a lot of questions beside legal questions. Some districts would come upon a problem which they didn't see how they could solve under the law. The revisions of the act to meet these special needs from time to time were some of the things the attorneys gave attention to.

Baum: Did you ever work on that kind of problem?

Adams: To some extent in the early days, not later.

The Irrigation District Association dealt with lots of problems: matters of assessment, of handling delinquent taxes, of operation, ditch management, relations of the water users, records, bookkeeping. During sessions of the legislature the secretary of the association was at Sacramento and followed legislation. During each legislative session the Irrigation District Association held its meeting at Sacramento and went over in detail each bill affecting

[illegible]: who attended the meetings were always very [illegible]. The newer districts [illegible] had questions [illegible] attorneys to [illegible]. There got a lot of [illegible] guidance from the [illegible]. There was also a [illegible] committee to deal with [illegible] that [illegible].

[illegible]: [illegible] the major functions of the Legislative District Association?

[illegible]: There is a lot of [illegible] legislation. Some districts would [illegible] [illegible] they [illegible] [illegible]. The revival [illegible] to deal [illegible] [illegible] to blame [illegible] or the things [illegible] have [illegible] to.

[illegible]: [illegible] ever [illegible] on that kind of [illegible]?

[illegible]: [illegible] without [illegible] the [illegible].

The Implementation Legislative [illegible]

Lots of problems: [illegible] of [illegible], [illegible] delinquent taxes, [illegible] of [illegible], [illegible] [illegible] relations of the [illegible] [illegible], [illegible]. During [illegible] the Legislature [illegible] the association was at [illegible] and [illegible] legislation. During each legislative session [illegible] Implementing Legislative Association [illegible] Tomasello and went over in detail each bill affecting

Adams: irrigation districts before the legislature and approved or disapproved it or suggested amendments. The executive committee used to meet prior to the general meetings. I used to attend those meetings because that's where the real work of the association was done.

Gradually the work of the association branched out and it became a representative of practically all irrigation interests in the state. New types of water districts came in, and then reclamation districts came in, and mutual water companies. Some of those organizations had their independent association, but they met with the Irrigation Districts Association. Gradually the association took up general questions of federal-state relationships brought on by the Central Valley Project. They took up the question of the 160-acre limitation, and of contracts with the Bureau of Reclamation. I think their opposition to the 160-acre limitation was primarily the reason for the organization of the Water Economics Committee which is now publishing Western Water News.

Baum: Does the money for the Water Economics Committee come from the regular assessment on districts?

Adams: It was my understanding that there was some question when the committee was organized whether it should

Adams: be separate from the Irrigation Districts Association. I think the association makes some contribution to it. Forrest Frick of Bakersfield assumes leadership in raising funds and those who provide the funds usually guide the policies.

Baum: Did you feel that the Irrigation Districts Association under Mr. Wagner represented the irrigation districts or did Wagner control the policies more than the representatives of the districts.

Adams: Mr. Wagner was very active, had his own ideas, and certainly was influential in the policies of the association, but the irrigation district directors were men of ideas and they were not led around by Mr. Wagner.

California Water Council

Baum: What was the California Water Council?

Adams: That was organized independently of the Irrigation Districts Association. It met every year, or even more frequently, and still meets, and takes up questions of general policy in the whole field of reclamation, and also matters of representation at meetings of the National Reclamation Association. Milton Kidd, the president of the Irrigation District Association at the time the council was organized,

Ada [illegible]: be separate from the Irrigation District Association. I think the association [illegible] should [illegible] Forest Fields or [illegible] assume a leadership relation from [illegible] provide the [illegible] guide the [illegible].

Sum: [illegible] the problem [illegible] Water District [illegible] under it. [illegible] represent [illegible] District or [illegible] control the [illegible] represent [illegible] of the District.

[illegible]: [illegible] very active, [illegible] certainly was influential in [illegible] a social [illegible], but the [illegible] activities [illegible] were [illegible] and they [illegible] [illegible].

California Water [illegible]

Sum: [illegible] the California Water [illegible]:

Answer: [illegible] association [illegible] California Irrigation [illegible]. It was very [illegible] type of [illegible], and [illegible] meets [illegible] occasions [illegible] activity in the water [illegible] reclamation, and also matters of [illegible] meetings of the National Irrigation Association. William [illegible], the president of the [illegible] Association [illegible] the time [illegible] was [illegible].

Adams: was made president, and still is president. The most active men in most of the districts attend the meetings. Until a few years ago I usually attended the meetings. In fact I attended the last meeting held in San Francisco in October of this year. I found there were a lot of men present whom I did not know. This has been true at other water meetings I have attended in recent years. Although a number of the old standbys were present, it was evident a new generation is taking over.

Baum: But it had other than district representatives?

Adams: Oh yes.

American Society of Agricultural Engineers

Baum: You joined the American Society of Agricultural Engineers in 1925 and were immediately made chairman of the Pacific Coast section. What does that society do?

Adams: It is made up of workers in agricultural engineering and allied subjects at the universities and colleges of the country and members of the agricultural machinery industry. They are to have their national meeting in Santa Barbara this month.

Baum: And are you planning to go?

Adams: I wish I could, but I'm afraid to tackle it. I find

Adams: those meetings rather fatiguing.

Baum: Was the American Society of Agricultural Engineers a large organization in 1925 or was it just beginning?

Adams: The society was organized a number of years before 1925, and must have had a membership of perhaps a thousand or more--I do not have the figures at hand. The Pacific Coast section was just beginning at the time I was elected chairman. Dr. David Weeks had been active in it. He was in engineering at that time and Leonard Fletcher, head of Agricultural Engineering at Davis, was also active in it. We had a meeting in Los Angeles. That was my first contact with it. We had coming up the next year the job of acting as hosts for the annual meeting of the society in California. One of our main activities for that first year was to organize for that meeting which was held at Tahoe. We were not involved in the program, but rather in arrangements for the meeting, matters of entertainment, housing, excursions to points of interest, and so forth. It was the highlight, the society said, of all their meetings. It was a beautiful place and we had a large attendance. We organized committees to work out the details of all pha ses of the meeting except the professional program and

Adams: it worked out very successfully. Then about a dozen years ago we had the meeting at Asilomar. We were hosts for the annual meeting there.

Baum: Where is the society located mainly--where is their central office?

Adams: Their headquarters are at St. Joseph, Michigan.

Baum: Is that because that is the center of the machinery industry?

Adams: No, I think because it was the home of the secretary. Originally it was St. Thomas, I believe, but then they moved over to St. Joseph, but really it is not far away. It was convenient and as good a place as any for it. It was in the central part of the country.

Baum: Did you carry on any research or study for them?

Adams: I put in quite a little time as chairman of the Land Settlement Committee, that was in 1931. We got out quite a lengthy report, which was merely mimeographed.

Baum: That was 1931. Were people still as interested in land settlement? Was this the idea of colony land settlement or was it just private, individual settlement?

Adams: The subject of land settlement was still very much alive throughout the country. There were still many projects that were suffering because of a lack of settlers.

Baum: Was your section interested in encouraging people to

Baum: come in on their own or were there thoughts of some kind of government settlements?

Adams: Our committee was not concerned at all with promotion, but merely with bringing the subject factually down to date. We were interested 1) in activities in which the states were participating; 2) the Bureau of Reclamation and its activities; 3) activities in Canada; 4) activities in Mexico; 5) activities of the western railroads; 6) activities of private colonization agencies. As to the railroad, they wanted to build up the country and increase their transportation income. In Mexico it was largely connected with their social program.

Baum: Is settlement still a problem?

Adams: I haven't heard any discussion of it in recent years. The Bureau of Reclamation, of course, is very interested in promoting settlement on its projects.

Baum: Do you think that on the Bureau of Reclamation projects the 160-acre limitation was a deterrent to settlement?

Adams: No, I think not. There have been some modifications of that on some projects, including Imperial Valley.

State Farm Bureau and the State Grange

Baum: Didn't you work pretty closely with the Farm Bureau in connection with the University?

Adams: We were always on friendly relations. We worked very closely with farm advisors and used to attend meetings of the State Farm Bureau Federation and keep in touch with what they were doing. Members of the Farm Bureau staff were active in our Commonwealth Club studies and still are. Of course, members of our group attended many farm center meetings where the farm advisor would be present.

Baum: Were these meetings mainly on better growing methods?

Adams: All phases of agriculture in which the community was interested.

Baum: Did they call on your organization for water studies?

Adams: Oh, as previously explained, much of my early work with local communities in connection with the organization of irrigation districts started through the activity of the farm advisor. The local people would want to do something and the farm advisor would come to me for help. They'd also call on other members of our staff. For instance, Professor Veihmeyer would go and discuss irrigation structures or methods of application of water or preparation of land, or some other subject on which the members of our staff were

Adams: working. When the Agricultural Extension Service appointed an irrigation specialist he took over much of the work of contact with the farm centers and with the individual farmers. The theory was that he was responsible to the Extension Service for his activities and to our division for subject matter. However, although not a member of our staff, he had his office with us and was in constant contact with the work we were doing. This is still the situation.

Baum: Did you work with the Associated Farmers?

Adams: No. They were an independent organization, concerned primarily with labor problems.

Baum: They had nothing to do with water.

Adams: No, nothing whatever.

Baum: Did you work with the Grange?

Adams: I don't recall ever going to any Grange meetings in connection with irrigation; I was a member of Highland Grange in the early years, and San Jose Grange for a time. The Grange is an entirely different type of organization from the Farm Bureau. Members of the Grange with whom I have come in contact in recent years have been more on the very liberal side. Those in the Farm Bureau are generally more conservative.

Baum: With regard to legislation on agriculture?

Adams: The National Grange has been over the years a very substantial organization. In the early days it was, I think, tied in with opposition to the railroads.

I have met only one master of the National Grange. We got him and the president of the National Farm Bureau and the president of the National Farmers Union to meet with our agricultural section of the Commonwealth Club. They were having some kind of meeting in San Francisco. The master of the Grange at that time was a very substantial man. The head of the National Farmers Union has been a very radical man from the start, very strong on the New Deal side. The National Farm Bureau Federation can certainly not be classed as radical or extra-liberal. In some states the Grange is still strong. We have a good many granges in California.

Baum: Are they very strong though?

Adams: They are active locally but I do not know how effective they are. You hear of the state grange when their annual meetings are held and George Sehlmeyer is elected state master over and over again. I think he spends most if not all his time on grange work, and occasionally I see in the newspapers pronouncements by him on matters of public policy, especially in the

[illegible]: [illegible] proposed to [illegible] [illegible]

[illegible]: The National [illegible] over the [illegible] substantial [illegible]. [illegible] was, I think, time [illegible] position [illegible]

[illegible]

[illegible]: [illegible]

[illegible]: They are [illegible] Lon [illegible] [illegible] they are. [illegible] [illegible] [illegible] field and [illegible] elected [illegible] water over [illegible] over again. [illegible] be [illegible] if not [illegible] time [illegible] and [illegible] I see in [illegible] [illegible] by [illegible] of public policy, [illegible]

Adams: field of public power and reclamation.

Baum: Liberal on what issues?

Adams: Well, everything the New Deal stood for. I doubt that you could say that of the National Grange. When the Grange was the only farm organization, before the Farm Bureau was started, they had some very strong granges. The San Jose Grange, for instance. The top men in agriculture in the Santa Clara Valley were members of San Jose Grange, and I think it's still a very strong organization. There was a strong grange up at Petaluma in the early days, and I presume there were and are other local granges that are effective in California. I've talked with George Sehlmeyer about granges in California and he thinks they are very important.

Institute of Irrigation Agriculture

Baum: What was your work with the Institute of Irrigation Agriculture?

Adams: In the days preceding or during the depression of the '30's, there were many differences of opinion in the country as to policies the nation should take with reference to building new irrigation projects or financing projects, terms of payment, relations of the government and water users on federal projects,

[illegible]

Adams: the extent to which state and federal credit should be used, in aiding distressed districts, both private and community, as irrigation districts; many problems of that type were before Congress and before the states.

Mr. R. W. Blackburn, who was then president of the California Farm Bureau Federation and a member of the board of directors of the National Farm Bureau Federation, used to talk with me very frequently about those questions. He induced the board of directors of the National Farm Bureau Federation to set up an Institute of Irrigation Agriculture to obtain a reflection of the attitudes of the members of the Farm Bureau in different parts of the West as to what these policies should be. It was more or less a grass roots organization. Mr. Blackburn had the same feeling many of us had that people in the West should have some say in all the planning that was going on.

Baum: Who belonged to the Institute of Irrigation Agriculture?

Adams: The Institute had no specific membership other than the executive council. The president of the New Mexico Farm Bureau Federation, Louis Fruedenthal, was made president of it, or chairman. An executive council was set up, Mr. Blackburn, Mr. W. W. McLaughlin, Mr.

Adams: Fruedenthal, I was on it; I don't recall the others. We held a number of regional meetings. Who attended was largely determined by the location where the meeting was held.

Baum: You mentioned a study you did for the Institute of the problems of irrigation organizations.

Adams: Many districts or projects were being refinanced under the Reconstruction Finance Corporation. We felt that a lot of the enterprises that couldn't qualify for emergency assistance still had a right to consideration in connection with problems they might have. So we made a questionnaire inquiry covering all the far western states and we got a fairly good return. We asked a series of seventeen or eighteen questions on financial conditions, need for further works, need for settlement, extent of water right conflicts if any, and other questions. Some federal projects wanted a revision of their contracts to extend their payments, some wanted a different method of determining their payments such as the average income rather than a flat acreage charge, some districts wanted financial help--there was talk in those days of both state and federal governments participating in assisting projects that needed help that didn't qualify under the national

Adams: recovery legislation. There were practically no requests for settling water right problems although there were some difficulties on interstate streams.

We made a general report, I have it here. You can't draw any clear-cut conclusions from it but it was of value as representing the opinion of a substantial cross section of developments in the West. All this information was available to Mr. Blackburn in his dealings with the directors of the National Farm Bureau Federation and the development of their reclamation policy.

Baum: How long did the institute continue to meet?

Adams: The last meeting we held while I was active was at Corvallis. That must have been around 1937. We had many farmers there from federal reclamation projects, some farmers from the surrounding valley, a number of western railroads were represented because they were always interested in that policy, especially John W. Haw, director of the Agricultural Development Department of the Northern Pacific Railway, with whom I'd had frequent contact previously. There was a rather radical element at that meeting. Mr. Fruedenthal was not present and I was chairman. The situation seemed to be getting more or less out of hand. I don't

Adams: remember the issues involved, but I asked someone to take the chair so I could express myself more definitely. My ideas must have coincided with the attitude of some of the o thers present because in the last afternoon several of them came to my room and thanked me for the position I had taken. What the position was I don't remember.

After that Corvallis meeting I asked to be relieved because I was overburdened with the other work. Mr. McLaughlin took over and they met for several years after that.

"Winning of the West Conference"

Baum: You mentioned a conference you attended in connection with a movie, "The Winning of Barbara Worth." What was that?

Adams: In September, 1926, I received a letter from Mr. Arthur S. Bent, then president of the Los Angeles Chamber of Commerce, inviting me to serve on a sponsoring committee for a proposed "Winning of the West Conference" to be held in Los Angeles. The purpose of the conference as Mr. Bent explained in his letter was to bring again before the public, not only of the West, but all over the United States, the question of reclamation and irrigation in such a subtle

Adams: remember the issue involved, but I worked [illegible] to take the chair so I could express myself more [illegible]. My ideas must have coincided with the attitude of some of the others. I went because in the last [illegible] several of them came to my room and talked to me for the position I was taken. [illegible] the meeting was a dramatic occasion.

After that [illegible] to be [illegible] conference [illegible] other work. Mr. [illegible] with [illegible] and [illegible] for several years after that.

"Winning of the Ideas [illegible]"

Adams: You mentioned a conference [illegible] in connection with a movie, "The Winning of [illegible]." What was that?

Ross: In September, 1[illegible], I received a letter from [illegible] Arthur [illegible], then president of the [illegible] Chamber of Commerce, inviting [illegible] to attend a proposed "Industrial [illegible] Conference" to be held in Los Angeles. The purpose of the conference was [illegible]. [illegible] explained in his letter was to bring [illegible] not only of the West, but all over the United States, [illegible] question of regulation and [illegible] such [illegible]

Adams: way as would assist the West in developing certain projects which would be considered at the next session of Congress, the most important of these projects being control of the Colorado River by storage at Boulder Canyon.

It was proposed to hold this conference concurrently with the premiere of the new film, "The Winning of Barbara Worth," which dramatized the reclamation of Imperial Valley. The thought was that this picture was probably the greatest picture ever produced showing the romance and grandeur of the winning of the West, and that its showing all over the country would assist in the dramatization of western reclamation problems.

It was desired to bring together in this conference the leaders of the western states and, to quote from Mr. Bent's letter, to "incidentally again bring Los Angeles into prominence and leadership with regard to the problems of this whole western territory."

After receiving Mr. Bent's invitation I called on him in his office in Los Angeles and he gave me this background: Mr. Sam Goldwyn had produced the film, "The Winning of Barbara Worth," and when they came to look it over they found it was a dud. Mr.

[illegible] the West [illegible]

projects which could be considered at [illegible]

session of Congress, [illegible] most important [illegible]

projects [illegible]

[illegible] Canyon.

It was proposed to [illegible]

generally [illegible] moment [illegible] film, "The

Winning of [illegible] North," [illegible] the

released [illegible]

[illegible] problem [illegible]

produced [illegible] the [illegible]

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the [illegible] remarkable [illegible]

[illegible] problems.

[illegible] desired to bring [illegible]

[illegible] leaders of the western [illegible]

[illegible] Booth's letter, [illegible]

[illegible] into prominence and [illegible]

with regard to the problems of this [illegible]

[illegible] territory."

After receiving [illegible]

on him in his office in [illegible]

this background: Mr. [illegible]

Film, "The [illegible]

came to look it over though it was [illegible].

Adams: Goldwyn was very much discouraged. He had spent a million dollars producing the picture. He went to Mr. Harry Chandler of the Los Angeles Times for advice. Mr. Chandler offered to let him have Mr. Harry Clark, his manager of properties in Lower California, to spend several months on location helping to take the kinks out of the picture. This had been done and the picture was then ready for its premiere.

Well, it was entirely appropriate that the Los Angeles Chamber of Commerce should have such a conference, and Mr. Bent assured me that it was entirely a bona-fide enterprise. The list of those invited to serve on the committee included many very prominent men, among them a number of leaders in the moving picture industry. The conference met on October 14, 1926, and was presided over by former Governor Campbell of Arizona. After a warm-up breakfast at the Breakfast Club, I think in Griffith Park, the conference assembled in the Biltmore Hotel and continued throughout the day. There was an elaborate luncheon at the Biltmore. Members of the committee were seated at the head table, and I had the honor of sitting next to Mary Pickford, then known as "America's Sweetheart." I remember that Douglas Fairbanks was

Adams: one of the speakers at the luncheon.

In the evening members of the committee were guests at the premiere. I sat with Mr. Harry Clark who had helped in working over the picture and whom I had known very well in studies I had made in the Imperial Valley. As nearly as I can remember the principal resolutions adopted related to support of large western storage projects then under consideration, and support of the recommendations by Secretary of Commerce Herbert Hoover for federal aid in construction of the storage. As I remember it Mr. Hoover had recently made several speeches in the northwest favoring such federal aid.

I don't remember what, if any, influence the conference had, but what makes it worth remembering was the effort to glamorize western reclamation through the medium of a rather glamorous moving picture.

SURVEY IN PALESTINE

Baum: Was your Palestinian trip an outgrowth of your interest in land settlement?

Adams: Well, my background with the land settlement movement in California undoubtedly had to do with my participation in that work. The way that came about, Dr. Mead had been asked to head a commission to study Zionist colonization in Palestine. He told me Knowles Ryerson was going over to look into the agriculture and A. T. Strahorn the soils and could I suggest someone to make a study of the colonies. I suggested myself.

Baum: You wanted to go.

Adams: I though I'd like to do that.

Baum: Under whose auspices was this trip?

Adams: The Zionist movement, following World War I and the Balfour Declaration proposing establishment of a national home for the Jews in Palestine, had carried on a great drive for funds to carry out the ideas of that mandate. One of the most important activities was establishment of agricultural colonies. There had been agricultural settlement in Palestine prior to that, some by Jews, some by non-Jews. Baron Edmond de Rothschild of Paris had come to the rescue

Adams: of a number of Jews from Russia and Austria, I think, who had become stranded down there. He helped them through as a matter of charity rather than any ideas of colonization. After his death the matter was taken over by the Rothschild Foundation and put on more of a business basis. Settlers were financed much along the lines that had been successful in Australia and many European countries.

The larger part of the funds raised for work of the Zionist organization in Palestine came from American Jews. The American Jews, headed by Louis Marshall, a very noted attorney in New York, had reached the conclusion that the Zionists were wasting the money on social projects and they didn't want to give any more money until they had a thorough study of what the situation was. So about 1926 or 1927 the Zionists and the non-Zionists, under Louis Marshall, agreed on a joint investigation under the auspices of what they called the Joint Palestine Survey Commission. Dr. Mead was asked to head a group to make the investigation.

Baum: What did you think of the colonies when you were there?

Adams: Here's the report, except for the appendices which were the reports of those of us who had made the field studies. Dr. Mead, as chairman of the group, was

Adams: mainly responsible for the main report, although the rest of us had some part in it.

Baum: (reading) Reports of the Experts Submitted to the Joint Palestine Survey Commission. Boston, October 1, 1928.

Adams: My specific job was to visit the colonies and study their financial condition over the years, learn what I could as to their attitude and the character of the people. All records regarding the colonies were in Hebrew. Fortunately, the chief accountant of the Zionist organization in Jerusalem was an American and he read off to me the headings of their records and I selected what I wanted and he compiled the data for me for each of the colonies. So I had this background material when I talked with the settlers.

Baum: I suppose you had to talk through an interpreter mainly.

Adams: Yes, except occasionally there were Americans there. I remember one very bright young woman of about twenty, the daughter of a New York rabbi, who was in one of the colonies down in the Jordon Valley. She illustrated the enthusiasm which had led many of the settlers to go there. She said she went down there just for a visit and was so enraptured by the beauty of the ideals and their plans that she became a colonist.

Adams: I spoke of the Rothschild colonies which were organized on a business basis with the idea that definite obligations were being assumed by the settlers and financial arrangements similar to those being used in that type of aid by governments in Europe and Australia.

The Zionist colonies were of two kinds, the collective or "communistic" colonies, and the small holders' colonies in which each colonist had his own piece of land and his own home in the village. They followed the European pattern of village settlement and surrounding or outlying farms. That type of group settlement was necessary because of the constant danger of Bedouin raids. They always had lookouts day and night.

In the communistic colonies the settlers lived in dormitories and the work was parceled out by committees. Each one had equal shares as to anything obtained. They had large barns for their stock and heavy investments in that type of buildings. In the dormitories, one room for each family. The children were kept in nurseries and supervised and educated by the teachers or nurses. They were allowed to visit their families every evening for an hour.

There were three main areas in Palestine where

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These were three main areas [illegible]

Adams: land had been purchased by the Jews for colonization. One was the coastal plain of varying widths and it was in about the central part of that area that the Rothschild colonies had been mainly settled and in which there were quite a number of Zionist colonies. The principal agriculture was growing citrus and grapes. The Rothschilds had built a large winery which provided a market for grapes. The Palestine oranges are recognized as some of the finest grown anywhere. The second general area was the Emek, or the Plain of Esdraelon as mentioned in the Bible. That lay midway between the coast and the Jordan Valley, a large area eight or ten miles across with very scant water supply, only springs, no streams. Then there was the Jordan Valley and lands adjacent to the Sea of Galilee. There were also a number of colonies in the hill country.

Well, we found that generally speaking the hill colonies were unsuccessful financially. There were a number of reasons. In the first place, the hill areas were not suitable for very profitable agriculture. Their methods of organization were entirely lacking in sound business principles. Let me illustrate. Not far from Jerusalem was a colony of 75 acres, largely shallow, barren land, worn-out terraces, and some of

Adams: it very heavy land. Twenty families were on that project and they expected to make a living out of it. The total population as I recall was about 75, including children. Dairying and poultry were their principal sources of income. Alfalfa for the dairy cows could not be raised in the colony. It had to be trucked in from the coastal area. I remember in the interviews one of the settlers said he had only two cows to milk and had nothing to do between seven o'clock in the morning and five o'clock at night except argue social theories and politics. They couldn't possibly make a living. It was an extreme case, but there were others that approached that. The coastal colonies and those along the Jordan River directly below the Sea of Galilee had greater agricultural possibilities.

The great difficulty over there was that the Zionist movement as carried out in Palestine was largely founded on achieving a new social order and the colonization was very largely controlled by the labor organizations. They had complete say as to who should be selected as colonists and they kept very careful track of their activities. There was a very stringent rule against exploiting labor. No outside labor should be hired. Occasionally there was some easing of that by allowing relatives to help. In many of the colonies

Adams: the area of land was so small they couldn't possibly make a living, let alone keep themselves occupied. The labor organizations also influenced their community cooperative movements and industrial development and so forth. Their emphasis was in a new social order and to get away from the evils of the capitalistic system.

At one of the hearings, one of the labor leaders who had principal responsibility in their main organization said in reference to the constant deficits that the need for more assistance didn't worry them at all. The greater the need over there, the greater the amount they could get from the Jews of the world.

Baum: Did you feel that these ideas were detrimental to their economy or was it that the situation was so difficult due to natural conditions that it wouldn't have been improved any other way anyhow?

Adams: We, of course, were not primarily concerned with the social theories of the Zionists of Palestine, but only with their effect on the economic success of the colonies. Nevertheless, we had to take these theories into account, as well as the control exercised by the labor organizations. In the communistic colonies the individual was of course subordinated to the group. In the small holders' colonies there was

Adams: greater individual freedom but the colonists were not obligated by a contract with the Zionist organization by which they would be financially responsible to it--no incentive to individual effort to complete a definite obligation as in the Rothschild colonies and in publicly-sponsored land settlements in Australia, Europe, and in the settlements in California. The Rothschild colonies by this time were generally successful. Incidentally, on one of those colonies we visited there were seven graduates of the University of California College of Agriculture, and they gave us a luncheon there.

Baum: Of course, you, and I suppose all the members of the commission, were by your personal experience committed to a different type of life, but perhaps that communistic type of life was satisfactory for those people who had come from a different background.

Adams: Oh yes. On the other hand, we could only give our conclusions on what we thought would be the ultimate effect and to raise the question of whether the people wanted to support that type of thing.

Baum: That must have been a very interesting trip for you.

Adams: Oh yes.

Baum: Mrs. Adams didn't get to go along?

Adams: No, she had four children to take care of. It wasn't

Adams: fair to go on that trip, and that trip to France back in 1919 and leave her at home, as I look back on it.

Baum: Was the report generally approved?

Adams: I think our report was rather generally approved by American Jews. When the report was completed, Dr. Mead and I went up to see Louis Marshall in his office and give him the report. Mr. Marshall was a most remarkable man, a great ponderous head, a tremendous mind, he reminded me very much of David Lubin, whom I had seen over at the Fairmont Hotel with Dean Hunt and listened to him talk for about an hour on affairs in which he was interested. I must describe Mr. Marshall's desk. He had a big double desk about seven feet long and five feet wide. He had it piled up all around, three sides of it, so high, with briefs and documents, and an area about the size of this card table on which he could work. He read the report through right there, except for the individual reports included as appendices, and he was quite pleased with it.

I should have mentioned earlier that our group included Dr. Mead as chairman; Dr. Jacob G. Lipman, director of the Agricultural Experiment Station at the New Jersey College of Agriculture; Arthur T. Strahorn, who had done a lot of soil survey work for

Adams: the Bureau of Reclamation and had formerly been attached to the Bureau of Soils; Mr. Cyril Q. Henriques, a former English irrigation engineer in India, then connected with the Zionist organization in Palestine, who joined us to study especially the irrigation features, Knowles A. Ryerson, who is now Dean of Agriculture here, and I was the last one.

Mr. and Mrs. Ryerson, Mr. and Mrs. Strahorn and I went over together about March or April of 1927 to carry through our field assignments. We were joined about two months later by Dr. and Mrs. Mead and Dr. and Mrs. Lipman. Then the entire group, accompanied by one or more of the Zionist officials held what might be called hearings in a number of important colonies, and also visited several of the enterprises of the Zionists, including the agricultural experiment station. Later Dr. Mead and Dr. Lipman interviewed a number of the leaders in the Zionist movement and the British high commissioner for Palestine and others who were responsible for the control of the British mandate over Palestine.

Two or three weeks were devoted to this study by Dr. Mead and Dr. Lipman. Then the group returned home except for Mr. Strahorn who stayed on to complete his soil survey of Palestine.

Adams: What I've said about our opinion regarding the colonies has been mainly critical. The report also contained much that was commendatory regarding the Zionist movement and its various aspects. Laying the foundations for what was to be a new nation was a tremendous undertaking. Great progress had been made in what they call amelioration of the land: that is, making it ready for settlement. The agricultural experiment station had developed a very able group of workers. A very effective system of cooperative credit had been built up under the able leadership of Mr. Harry Vitteles. I personally was greatly impressed by the devotion and zeal of the colonists in their effort to build up a Jewish national home. They were willing to undergo great hardships in their daily lives.

WORK ON INTERNATIONAL AND INTERSTATE WATER RIGHTS

Attempted Compact Between the United States and Mexico, 1928-1930

Baum: You had worked on the compact between the United States and Mexico. When was that?

Adams: Some time in the middle of the 1920's Congress appointed a commission to study the use of Rio Grande water below Fort Quitman in Texas and to reach an agreement with Mexico in connection with the use of the waters there. Mexico appointed a commission and at the same time requested that the two commissions also consider the Colorado and the Tia Juana. The Tia Juana is a small stream that flows from Mexico into California along the border south of San Diego. The American commission was headed by Dr. Mead, Commissioner of Reclamation, and it had on it also Major General Lansing H. Beach, retired, and Mr. W. E. Anderson from the lower Rio Grande area.

When that plan was adopted of including the Colorado and the Tia Juana, Dr. Mead felt they didn't have adequate information about what was going on along the Colorado in Imperial Valley in California and in Mexico and asked me to make a special study of that. I did that in 1926 and 1927. That was preliminary to any joint meetings of the Mexican and American commissions. I prepared a report--roughly it dealt with stream flow, irrigated and irrigable lands, use

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Adams: of water, the various irrigation developments, and water rights that had been established. That was in the United States as far up as Cottonwood Island in Nevada, it didn't include the upper tributaries of the Colorado. My report is in Appendix B of this report of the International Water Commission, United States and Mexico, 1930.

Baum: You didn't do any work in Mexico?

Adams: Yes, I made a special report on the use of Colorado River water in Mexico. That was covered in Appendix 4 of the report. Then I made a third report, Appendix 5, entitled "An Inspection Trip over the Colorado River Levee Systems Below Yuma, Arizona, December 17, 18, and 19, 1929". The river was in high flood stage at that time. There had been great devastation of the levee systems in Mexico. The course of the river in Mexico had changed again. The flood stage down there was important in reaching an understanding with Mexico.

Baum: How much field work did you have to do on these reports?

Adams: I was in the field several months at least. I had to take leave from the University when I did that.

The first joint meeting of the commission was held in El Paso in February of 1928. I was not present. I got a wire asking me to come to their second meeting which was held in Mexico City beginning August 20, 1929.

Adams: The third session was held later in Washington. My particular job in those meetings was to go over with the representative of the Mexican commission, Mr. J. L. Favela, all the data we had collected and attempt to reach an agreement as to the facts and report disagreement where we weren't able to reconcile our facts. About three weeks were devoted to that work in Mexico City and probably a week in Washington.

The situation along the Rio Grande, the Colorado and the Tia Juana was quite different in the two countries. The Colorado water supply comes entirely from the United States. Some 70% of the water in the lower Rio Grande comes from Mexico. On the Tia Juana important tributaries rise in the United States, pass into Mexico, join the main Tia Juana and flow back into the United States. The commission was faced with the situation that Mexico was in a position to hold out the supply along the Rio Grande for a larger supply from the Colorado and the Tia Juana. There was some feeling among the people along the lower Rio Grande and also in California that the interests of one area might be sacrificed by the commission for the interests of the other, so they watched the proceedings of the commission very carefully.

Baum: I presume that is why Mexico insisted on considering

Baum: all three rivers at once, for better bargaining.

Adams: Undoubtedly. I had nothing to do with the lower Rio Grande so I won't discuss it.

One of my findings on the use of Colorado River water in Mexico was that the maximum amount of water they used in any one year up to 1928 was some 750,000 acre-feet. The American section proposed that that be the allowance to Mexico from the Colorado. The Mexican government had an entirely different idea. When reclamation of Imperial Valley was started back in the early 1900's it was necessary to reach an agreement with Mexico as to the conveyance of water through Mexico from the Colorado through an old natural channel back into the Imperial Valley in California. The high range of sand hills between the Colorado River and Imperial Valley made it necessary at that time to go through Mexico. The concession granted by Mexico provided that of the water so diverted, sufficient should be supplied to Mexico to water the lands there, but not exceeding half of the total supply diverted. On that basis Mexico claimed about three and a half million acre-feet against the 750,000 acre-feet the American section was willing to concede to Mexico.

Mexico had still another criterion for deciding

Adams: the amount they were entitled to, that is, the relative areas of irrigable land. On that basis their claim was also about three and a half million acre-feet.

Well, with such wide differences needless to say they didn't reach agreement. They reported that disagreement and the commission concluded its labors. Some years later an agreement was negotiated and a treaty signed by which Mexico was given, I think, about twice the amount the American section of the earlier commission offered. It was negotiated by Lawrence M. Lawson for the United States. Mr. Lawson had been boundary commissioner on the changing boundary between Mexico and the United States due to the meandering of the river during floods. He had made an exhaustive investigation of the Colorado River system for the Bureau of Reclamation in earlier days. He was present at the meetings of the commission at El Paso, Mexico City, and Washington. He and I were in college together, a man I knew very well.

Some years after the American commission filed its report, and prior to the negotiation of the final treaty, I met Mr. Lawson and I asked, "What's the status of the situation down there?" "Well," he said, (he was rather droll), "We're just waiting for that old report to be forgotten."

Adams: California was never satisfied with what was finally negotiated.

Rio Grande Joint Investigation, 1935-1938

Baum: You were a member of the consulting board of the Rio Grande Joint Investigation for the National Resources Committee from 1935-1938. I believe that investigation resulted in an interstate compact between Colorado, New Mexico, and Texas on the use of Rio Grande waters. How did that investigation come about?

Adams: In the replies from the various governors to the inquiry sent out in connection with a study I made in '34 for the National Resources Planning Board on water rights and legal aspects of water resources in the arid and semi-arid regions, the need for agreements on a number of interstate streams was mentioned. That may have had something to do with the National Resources Board having us undertake the Rio Grande Joint Investigation.

The first I knew of the proposed investigation was a wire asking me if I would serve with Professor Harlan H. Barrows of the University of Chicago.Department of Geography in arranging an investigation on the Rio Grande working toward an agreement and ultimate compact. I was very glad to undertake that, it was a fine

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Adams: opportunity. So a meeting was called in Santa Fe in the summer of 1936 at which the interstate commissioners who had tried to work out a compact on the Rio Grande but had not succeeded were brought together along with representatives of major interests along the Rio Grande and its tributaries in Colorado and New Mexico and Texas. We had a large conference. Sinclair O. Harper, who was then assistant chief engineer of the Bureau of Reclamation and later chief engineer had been appointed by the President as the federal representative on the compact commission.

We had a very interesting meeting. It was preliminary in nature. Professor Barrows and I were feeling out what was possible or desirable. At the end of the conference, which lasted about three days, we were told by some of the state representatives that more progress had been made toward reaching agreement than at any time since the interstate compact commission had been established.

With that meeting back of us we planned an investigation, outlined an organization, solicited the cooperation of the Geological Survey and the Department of Agriculture, and the federal wildlife agency which had large game preserve interests on the Rio Grande. We outlined a plan of procedure which

Adams: was perhaps rather more elaborate than was necessary, but we took the job very seriously.

We got Mr. Walter W. McLaughlin to come over in order to interest him and members of his irrigation staff of the Department of Agriculture in the studies of use of water and related questions. Mr. N. C. Grover, head of the Water Resources Branch of the Geological Survey, gave his hearty cooperation. He was so interested he met with us every conference we held for the next two years. I had the opportunity to meet in him one of the finest men I've ever known.

After we had worked out a plan of organization and obtained the cooperation of the various agencies we submitted our plan to the National Social Planning Board in Chicago and got their approval and authorization necessary to carry it out. Each state, of course, paid its own expenses. The Department of Agriculture and the Geologic Survey undoubtedly paid the salaries of their representatives, but we had a large fund for expenses, for technical assistants, for preparation of maps, clerical help, etc.--something around $100,000 or more, I don't know for sure. In any event, it was an expensive investigation.

We appointed Harlowe M. Stafford, of the staff of the state engineer of California, to head up the

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Adams: investigation. Mr. Fred C. Scobey of Mr. McLaughlin's staff was associate engineer. The investigation went on for the next two years and here is the rather voluminous report.

Baum: When were you working on this?

Adams: In 1936 and 1937. We transmitted our report on August 10, 1937. Mr. Barrows and I were the consulting board responsible for the planning and conduct of the investigation. We held, I think, twelve or thirteen conferences in Santa Fe in which all these various interests were brought together. The representatives from the states accompanied us over the entire basin, along the Rio Grande as far as Fort Quitman some eighty miles below El Paso up through New Mexico into the headwaters of the Rio Grande in the San Luis Valley in Colorado. So we became very familiar with the terrain.

I have almost a complete record of the proceedings of the conferences which I plan to turn over to Bancroft Library and possibly all my correspondence with Professor Barrows relating to it.

The final drafting of the compact was accomplished on the basis of our report under the leadership of Mr. Harper who was the federal representative on the compact commission. That came after we had completed

Adams: our report.

Baum: Was everyone who worked on this report objective about dividing up the water or were they partisan?

Adams: It was entirely an objective investigation--a practical study of the situation. There were sharp differences of opinion between the states and their representatives from time to time, but a fine spirit was exhibited throughout the period in which we were working on the project.

Baum: Do you feel that such an elaborate investigation was necessary?

Adams: It was a broad question and needed broad treatment. I've never regretted that we undertook it in the way we did. In such a complicated situation as we were dealing with you cannot tell in advance what particular facts will have influence. We therefore sought to include all important phases of the situation which might be of help, and which might turn out to be of historical significance.

Baum: What was Professor Barrow's background?

Adams: He was head of geography at the University of Chicago. He was a member of the water committee of the National Resources Planning Board and had been active in that work from the beginning of the planning efforts of the federal government after the Roosevelt administration.

Adams: took over. The first organization was, I believe, the Mississippi Valley Committee. Out of it was developed the braoder title of the National Resources Planning Board.

Baum: How would youdescribe Professor Barrows?

Adams: He was a man of great ability, very fine personality, a commanding figure, about six feet four, very articulate, and with a remarkable memory for detail. Geographers had a very broad point of view about such work. Incidentally, Professor Barrows and Professor Carl Sauer of the University of California represented two very opposite points of view in geography.

Baum: Did you do any further work for the National Resources Planning Board?

Adams: A couple of years after the completion of the Rio Grande investigation the National Resources Planning Board had an idea there ought to be a standardization of the water laws of the western states. That was a feeling that came from people in Washington looking out to the West. So they organized a subcommittee of the Water Resources Committee of the National Resources Planning Board with Mr. A. E. Chandler, my old California friend whom I have mentioned a number of times previously, as chairman, and Duane E. Minard, a prominent lawyer from New Jersey, A. W. McHendrie from

Adams: Colorado who was primarily interested in underground waters, Mr. Phil Glick of the Solicitor's Office of the Department of Agriculture in Washington, and myself. We held meetings in Washington and Berkeley. The work finally terminated because, I believe, of Mr. Chandler's rigid antagonism to any federal effort to bring about changes in the western water laws. He and I and the representative from Colorado were asked to prepare special reports.

My special report was on principles relating to rights to water from surface streams. This was mimeographed by the National Resources Planning Board. I do not recall the subject of Mr. Chandler's special report, if he wrote one, but that written by Mr. McHendrie was on underground water law. That's the last we had to do with it. They decided the work would be continued entirely by representatives of the federal government. I was sorry our group was not allowed to complete the study, but I was anxious to see what conclusions would be reached. I feel sure that the committee would have advised against any attempt to standardize these western laws because nothing could be gained by that, and there really was no need for it. We might have been able to make suggestions that would have been helpful to some of the states or that would have clarified the functions and responsibilities of both the federal government and the states in matters of water rights. I do not recall whether a federal group continued the study.

COMMENTS ON CALIFORNIA STATE ENGINEERS AND OTHER LEADERS IDENTIFIED WITH CALIFORNIA IRRIGATION AND WATER DEVELOPMENT

State Engineers

Baum: Was it State Engineer McClure you worked with so closely?

Adams: My first contact was with Mr. Nathaniel Ellery. That lasted for only about two years. He was state engineer when I took over in California in 1910. He was succeeded by Mr. McClure. I think at that time Mr. McClure was the engineer member of the Berkeley city commission. I worked with Mr. McClure until he died in 1926 and it was a very close association. At one time he had been a lay minister and his work was primarily over in Owens Valley.

He was an ideal man for contact between the state and the irrigation districts. He was very heartily sympathetic to the legislation which brought the districts under more and more control of the state. He personally went over in the field most proposals for formation of districts, and most of the districts in the planning or construction stage.

Wilbur F. McClure

State Engineer, 1912 - 1926

Baum: I take it he was quite favorable to irrigation districts.

Adams: Oh yes, he was. He was on an irrigation district inspection trip when he died. Later, in recognition of his work with irrigation districts and especially Merced District, Merced District named their large reservoir back of Exchequer Dam Lake McClure. I had the privilege of being on the committee that arranged for placing a bronze plaque at the dam site.

When he died he was director of public works and state engineer. Paul Bailey, then assistant state engineer, was immediately made acting and a little later was given the full title of director of public works and state engineer. My contact with him was very brief, just to keep him informed of what we were doing. His ideas about administration were shomewhat different from mine and a number of other people's.

Baum: Did Mr. Bailey go out to the irrigation districts and give them the assistance that Mr. McClure had?

Adams: I never knew of his doing so. By that time the state engineer had assistant engineers who took over the work that Mr. McClure personally undertook. Mr. Bailey was in charge, under Mr. McClure, of the water resources studies made as an outcome of the campaign for the Marshall Plan and the appropriation of $200,000

Adams: by the legislature for that purpose. Mr. McClure asked me what part I would like to have in the investigations under that appropriation. My reply was that I didn't want to have any part in it except to be interested in it and help in any way I could, but that I thought it would be advantageous to the work if they took Mr. Scobey of the Irrigations Investigations staff in as office engineer, which they did.

When Mr. C. C. Young became governor, Mr. Hyatt was made state engineer. Mr. Hyatt was at that time chief of the Water Rights Division.

Baum: Did you work with Mr. Hyatt much?

Adams: Very closely. A wonderful man, a man of unusual ability, unusual political sense. He knew how to deal with people. He had their confidence. He had the loyalty of every man in the department. They had an affection for him, respected him. He knew how to deal with committees in Congress on matters of appropriations. He knew how to deal with delegations of congressmen who came out here. He knew how to plan big undertakings and knew how to have a group of men in his department to whom he could assign responsibilities and who were all men of fine ability.

A. D. (Bob) Edmonston was assistant state engineer, mainly responsible for technical activities

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Adams: of the department. Others on the senior staff as I remember them included Harold Conkling, who was chief of the Division of Water Rights, until he resigned to enter private consulting practice, T. B. Waddell, Raymond Mathew, Carl Meyer, P. H. Van Etten, Russell Simpson, Harlowe Stafford, Everett N. Bryan, Gordon Sander, Spencer Burroughs and Henry Holtzinger, attorneys for the department. Three very capable engineers were in the dam division: George Hawley, Bill Holmes, and Mr. Perkins. I knew all of these men very well, most of them intimately.

Baum: It sounds like Mr. Hyatt was excellent at the political part of the job, and that's very important.

Adams: He was much more than that. He was a great administrator of his department.

Both he and the state were fortunate in having as assistant state engineer a man with the great ability and devotion to the state service as Bob Edmonston. Mr. Edmonston was jointly responsible with Mr. Hyatt in developing the original state water plan of 1930 out of which grew legislative authorization of state construction of the Central Valley Project. As state engineer in succession to Mr. Hyatt he personally was responsible for the concept of the Feather River Project and the extension of the state water

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I remember that [illegible] Mr. Justice Douglas, [illegible] author of the [illegible] to enter private [illegible] Second Vatican [illegible] Mr. [illegible] Supreme Court [illegible] attorneys for [illegible] department [illegible] engineers [illegible] in the dam [illegible] Holmes, and Mr. Perkins [illegible] very well, [illegible]

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Adams: plan to Southern California. He was a strong advocate of state taking over the entire Central Valley Project. He made an exhaustive report in favor of that. It was basic with him that the water resources of the state should be controlled by the state, and he was therefore opposed to any situation being developed which would result in that control passing to the federal government.

California has produced many able engineers who worked in the irrigation field. Of course, the attorneys who have been involved have been outstanding.

Outstanding Engineers

Baum: Would you care to mention a few of the engineers?

Adams: It would be almost unfair because I would be sure to omit so many men. I will do the best I can. The first, of course, was William Ham Hall, state engineer from the late 1870's to the early 1880's. He got together a tremendous amount of information about the water and lands and irrigation development possibilities and soils and water rights in his numerous publications.

One of his assistant engineers in his investigations was C. E. Grunsky. Mr. Grunsky's interests and experience covered a very broad field. He was city engineer of San Francisco when I first met him, and then after serving on the first Panama Canal Commission, by appointment of President Theodore Roosevelt, he was

Adams: consulting engineer for the Secretary of the Interior on projects of the Reclamation Service. I would say that his main contributions to irrigation came through his thorough understanding of water problems of California, and his statesman-like approach to the solution of major irrigation and other water problems of the state.

There was John D. Galloway, a highly-respected civil engineer. As far as I know, his only direct connection with irrigation projects was in planning and directing construction of the system of Merced Irrigation District, including directing construction of Exchequer Dam and hydroelectric system. He was always active and forceful in discussions of irrigation and water problems in the Commonwealth Club.

Fred H. Tibbetts was one of the most active engineers in irrigation development, notable for Nevada Irrigation District, Glenn-Colusa Irrigation District, and the Santa Clara Valley Water Conservation District.

I always considered Harry L. Haehl one of the ablest and finest of the engineers engaged in irrigation work. In early days he was associated with Edwin Duryea but I think his main work in irrigation was in guiding development for the Kern County Land Company. Whenever I heard him express himself in

Adams: water meetings he seemed to show sound judgment and good sense.

Charles H. Lee was another engineer whose work has been notable. He made early contributions to underground water problems and undoubtedly many other important matters relating to water but his practice went far beyond that field. He made important contributions to the discussion of irrigation and water problems in the Commonwealth Club.

One cannot think of the Imperial Valley reclamation without recalling the fine work of the original engineer, W. L. Rockwell, Mr. C. L. Cory, who finally turned back the Colorado River out of the Imperial Valley, and M. J. Dowd, who for many years was chief engineer and is now consulting engineer of the Imperial Irrigation District. He has been a very important member of the district's security commission, and very important in matters pertaining to California's claims to water from the Colorado River.

Very prominent in directing the early work of the Reclamation Service in California and later in general practice was J. B. Lippincott. A Reclamation Service engineer whom I respected very highly was Louis C. Hill. His son, Raymond Hill, a very able

Adams: engineer, has had a large part in consulting work on some involved problems of irrigation and water development.

In the field of university instruction and consulting work Professor B. A. Etcheverry and Professor S. T. Harding have of course been outstanding. (I've already spoken sufficiently about Professors Veihmeyer and Huberty.)

Among those previously frequently mentioned I cannot of course omit including here state engineers McClure, Bailey, Hyatt, and Edmonston--Mr. McClure for his great help to irrigation districts; Paul Bailey for directing the general study of water resources made in the early 1920's; and Mr. Hyatt and Mr. Edmonston for their great contributions to the Central Valley Project and the state water plan, now taken over under the very able direction of Harvey O. Banks. I have previously referred to the many able engineers working under Mr. Hyatt in the state engineer's office. They continued under Mr. Edmonston along with others.

Of course many very able Bureau of Reclamation engineers had part in California irrigation development, but I'll add only Walker Young, who was in charge of construction of Hoover Dam and initially

Adams: of the Central Valley Project.

I could mention many able engineers of irrigation districts. Among them, Edwin Duryea, Oakdale and South San Joaquin irrigation districts engineer, I think; R. E. Hartley of Oakdale Irrigation District; Roy V. Meikle of Turlock; A. Griffin of both Modesto and South San Joaquin districts; Harry Barnes of Madera District; Stephen E. Kieffer, I think, built both Lindsey-Stratford and Terrabella districts; Fred D. Pyle of Vista District; William Durbrow of Glenn-Colusa and Nevada districts; and A. N. Burch, long in charge of the Orland Project and the first engineer of Hollister Irrigation District.

Let me mention just two more. Arthur L. Adams built the first system of successive lifts from the San Joaquin Delta to westside lands. This was the Balfour-Guthrie Project, now in Brentwood Irrigation District. There was Fred Hermann, who for a time was in charge of development in Imperial Valley, also for a brief period engineer for Modesto Irrigation District. Of course, I'll have to add Charles L. Kaupke, previously mentioned in connection with Kings River, whose fine book you have.

Two of the most thoughtful engineers who have

Adams: of the Central Valley Project.

I could mention many able engineers of irrigation district. Among them, Robin Lewis, Jaddale and Jack [illegible] San Joaquin Irrigation District engineer, I think. [illegible] Irrigation District: Ray [illegible] [illegible] Griffith of both Modesto [illegible] Irrigation District; Henry [illegible] [illegible] Modesto. Elmira, I think, [illegible] Turlock and Merced District; [illegible] [illegible] Water District; [illegible] [illegible] Nevada District; and A. [illegible] [illegible] of the Grand Project [illegible] engineer of Oliver [illegible].

Let me mention just [illegible] [illegible] loans to fill the first [illegible] of [illegible] the San Joaquin Valley to [illegible] the Friant-Kern Project, [illegible] Irrigation District. There was [illegible] for a time was in charge [illegible] District, also for a brief period [illegible] Irrigation District. Of course, Lloyd [illegible] Lowell B. Hague, previously [illegible] with Iona Livers, [illegible] fine [illegible].

Two of the most thoughtful engineers [illegible]

Adams: contributed to the thinking about California water problems have been Samuel B. Morris, for a number of years Dean of Engineering at Stanford, and long in charge of the Department of Water Power in Los Angeles, and Professor Eugene L. Grant of Stanford.

I'm sorry I've left out so many. I find I have not mentioned any of those in the Irrigation Investigation staff of the Department of Agriculture. Of course I have frequently mentioned Dr. Mead, Dr. Samuel Fortier and Mr. Walter W. McGovern. I do not want to omit Mr. C. E. Tait who was in charge of our cooperative investigations in Southern California. He made memorable contributions in his investigational activities. On his death, I think in the 1920's, he was succeeded by Harry F. Blaney, who is still active. Finally, and this must be the last, I must mention Fred C. Scobey, whose basic work in flow of water in pipes and other conduits earned him more than national reputation.

Wells A. Hutchins

Baum: You mentioned a number of lawyers who were prominent in the irrigation field in California.

Adams: That is true. I have already referred to a number of those whom I knew best. I won't attempt to make a list

Adams: contributed to the thinking about [illegible] a problems have been [illegible] . Morris. [illegible] years been of [illegible] in Stanford. [illegible] chairman of the [illegible] of labor [illegible] and problems [illegible] . [illegible]

[illegible] . [illegible] Inf [illegible] . [illegible] have not [illegible] by them. [illegible] Industrial Relations [illegible] staff of the Department [illegible] . [illegible] have [illegible] . [illegible] Samuel Gompers [illegible] . Gibson . [illegible] [illegible] by staff . . . [illegible] [illegible] . [illegible] [illegible] . [illegible] [illegible] activities. [illegible] in death. [illegible] [illegible] succeeded by Harry . [illegible] [illegible] . Flore , and [illegible] [illegible] . Today, [illegible] [illegible] and other [illegible] [illegible] [illegible] .

File A. Atlas

Gum: Don [illegible] number [illegible] [illegible] in the [illegible] Union field in California.

Ada: That is [illegible] . I have [illegible] [illegible] who [illegible] her boss. I don't [illegible] [illegible] [illegible]

Adams: of them but I do want to pay personal tribute to Wells A. Hutchins, who was an early member of our group in the cooperative irrigation investigations in California. Although he already had obtained a law degree from George Washington University, he joined us originally about 1911 as an office worker. He was soon given various field assignments in our California investigations and joined with me in early irrigation district studies in the western states, finally finishing a study he and I had begun.

Then for a number of years he made field studies and prepared Department of Agriculture bulletins on various types of irrigation organizations in the West and in the 1930's began his major life-work: authoritative research and publication in the field of western water law with particular reference to states water rights. His first volume, issued in 1940, was: "Selected Problems in the Law of Water Rights in the West", published as U. S. Department of Agriculture miscellaneous publication No. 418. For at least the past ten years he has been engaged in preparing publications on the water right laws of the individual states and has completed most of them, all of which have been published by the states. His work on California, "The California Law of Water Rights," is

Adams: [illegible] of them but I do want to say a word about that to the [illegible] Willis A. Hutchins, who was an early member of the [illegible] group in the conservative irrigation investigations in California. [illegible] though he finished a law degree from Harvard University, he [illegible] joined me as an [illegible] and [illegible] he was soon given very responsibility in the [illegible] California [illegible] studies [illegible] irrigation, diversion studies [illegible] finally [illegible] a study [illegible].

[illegible] for a number of [illegible] which [illegible] were [illegible] development of [illegible] [illegible] various [illegible] use of irrigation [illegible] in [illegible] and [illegible] California began [illegible] [illegible] publication [illegible] water law with particular [illegible] [illegible] studies. In [illegible] volume, issued in [illegible], was "Selected Problems in the Law of Water Rights in the West", published by U. S. Department of Agriculture [illegible] miscellaneous publication [illegible]. [illegible] the past ten years he has been engaged in [illegible] publications on the water right laws of [illegible] states and has completed some of these, all of [illegible] have been published by the states. His work on California, "The California Law of Water Rights", is

Adams: a volume of some 600 pages and is recognized as a masterpiece. He is currently completing publications for the remaining states and will finish the series with a summary covering all of the western states, which will be published by the Department of Agriculture. He has performed all of this work with distinction.

In 1958 the Department of Agriculture cited him "for outstanding performance in conducting research and providing consultation on western water laws and the administration of water resource districts." The National Reclamation Association recently conferred an honorary life membership "in appreciation for long and unselfish service to the National Reclamation Association, and devotion to the cause of Reclamation in the seventeen western states."

Wells Hutchins has always displayed an infinite capacity for taking pains, and nothing short of the best he could possibly do ever satisfied him.

SOIL CONSERVATION DISTRICTS

Baum: I understand you were quite active in redrafting the Soil Conservation Act as it applied to California.

Adams: Early in the New Deal the Soil Erosion Service was set up. The people in the agricultural department in Washington drafted a law which they wanted all the states to pass and which most of the states did. The Secretary of Agriculture transmitted it to the governor of each state. From the governor it came to the president of the University and then to Dean Hutchinson and then to Walter Wier and me to comment on. It was very advanced legislation and proposed to give soil conservation districts very extended power over land use.

Dean Hutchinson asked us what we thought of it. We told him we didn't like it. He said, "Well, you write a better act." So we did. We eliminated those land use regulations. They went far beyond any thought any of us had had on regulations of land use. Furthermore, we felt that any soil conservation district act passed in California should take into consideration our irrigation district experience. So we drafted a law and set up a procedure for organization and the work of the districts and also for financing the work.

Adams: The great cry then was that the government and the state were going to do everything. Well, Walter and I thought they were not going to do everything. Irrigation districts had paid their own bills, so why shouldn't soil conservation districts pay their own bills, with help if necessary from other sources. The federal people thought the state should put up a lot of money. Well, we thought they'd never put up much money. We had enough background on our districts to feel rather safe on that ground. So we made provision for assessments. What we had in mind was that the principal expenditures would be for such physical measures as terracing, structures and conduits to control runoff.

Well, we submitted the bill and it passed. Walter and I were asked to appear before the legislative committees and explain it and we did. There was some little constitutional question in the title so it had to be repassed. But the Department of Agriculture people didn't like it. The department wanted to rapidly multiply soil conservation districts. Our idea was that when there was a need for districts, they should be organized.

We put a limit on assessments, but our provision for assessments was a stumbling block to the soil

Adams: conservation service in organizing new districts. We had a lot of discussions. Mr. Phil Glick of the Solicitors Office of the Department of Agriculture, was out here. We had lots of discussions with him. He said we had the best bill of any of the states except for our assessments and our absence of land use regulations. I finally worked out in my mind a short paragraph relating to land use, a very much modified form of land use regulation. Alex Johnson, secretary of the California Farm Bureau, was interested in getting something of the kind in, and the bill was amended the next session of the legislature to provide that. Later the Soil Conservation Commission got the provision regarding assessments eliminated.

In our bill we set up a State Soil Conservation Commission composed of the state engineer, the dean of the College of Agriculture, and the director of Agricultural Extension. We felt that the work should be done largely in cooperation with the farm advisors, that the state engineer's long connection with irrigation districts made it appropriate that he be connected with the soil conservation districts because we had anticipated assessments, and that the dean of agriculture should be on there because it was largely

Adams: [illegible]

Adams: an agricultural question. We anticipated that the state would exert dynamic control of the organization of districts and the general district policy.

At Dean Hutchinson's suggestion, he was the chairman of the commission, I attended the meetings of the commission. Walter Wier was secretary of the commission, and he and Lloyd Brown made all investigations of proposed districts prior to action by the commission. They were very conservative in their reports, and would not recommend formation of a district if they did not think one was needed. The Soil Conservation Service did not like this. It was evident that Dean Hutchinson, Director Crocheron, and State Engineer Hyatt were getting tired of the controversy, and were disposed to yield, as they later did by appointing a new secretary suggested by the Soil Conservation Service, and withdrew Walter Wier and Lloyd Brown from any connection with the activity. By that time, through the impulse undoubtedly of the Soil Conservation Service, the act had been changed to add two members of soil conservation districts to the commission.

I think I ought to explain how the situation had changed since our original act was adopted. The early work of the Soil Conservation Service involved

[illegible]

Adams: the type of work we had in mind when the original act was written; that is, measures to prevent soil erosion through physical control by structures and conduits. What was now being done went a lot beyond that and included many cultural practices including, for instance, fertilization--practices with which the farm advisors were concerned.

Baum: Why did you favor state control over federal control?

Adams: We believed the state people should control activities in the states. Our assumption was that the districts themselves would construct these works and at least partly pay for them through district assessments. We also thought some measure of state control was necessary in guiding policy. Some of the states in the middle west--I think Michigan was one of them--had been rather emphatic in favor of such control for that purpose.

Baum: Why?

Adams: Well, I'll take an example. The Agricultural Extension Service had a very fine staff and had built up strong farm advisors in the counties. The Soil Conservation Service here in California, which had control of a large staff of workers out in the various counties, sometimes paid no attention to the work of the Agricultural Extension Service. They

Adams: went ahead and gave advice which in the opinions of some of the farm advisors was not sound advice. Many of the soil conservation workers were not experienced, the farm advisors had been there for years. In some instances the soil conservation workers would lay out programs which either failed to take into consideration information that the farm advisors already had, or which contraverted the judgment of the farm advisors.

I remember that when our College of Agriculture Flood Control Committee was going over the program for San Fernando Valley suggested by the Soil Conservation Service we found that the Soil Conservation Service did not even know the farm advisor in that county. That seemed to us all wrong.

Baum: You felt that under state control there would have been a lot more cooperation?

Adams: Yes, sufficient state control of the programs to insure complete coordination with the established work already under way. Such a spirit of cooperation existed in some of the counties and very fine progress was made. I have in mind, for instance, work in Santa Barbara County on the Hollister ranch which seemed to us to be excellent. There were other examples of excellent work. On the other hand, in some of the counties there was much antagonism between the soil

Adams: conservation workers and the farm advisors there. I doubt if that persists any longer.

Baum: Wouldn't it have been possible to get them to cooperate?

Adams: It was largely a matter of personalities.

Baum: You think the whole service was attached to the idea of more rapid change than might have been possible?

Adams: I don't say that. When the soil conservation work started here, they employed many workers who had had no experience in that particular field necessarily because they couldn't find experienced people. They started out to do the best they knew how. In our estimation they didn't take advantage of the opportunities to use all the help they could from local sources. They did some things that they themselves found to be unwise. It's a matter of learning through experience.

You might conclude from what I have said that I personally am not very enthusiastic about soil conservation. That is entirely erroneous. No one in the state is more interested in it than I am. For a number of years I followed the work in the field of the soil conservation districts, and would like nothing better than to do it over again. Every time I see a muddy stream after a storm I realize more and more the need for such work. The present leader of the soil

Adams: conservation service in California, John Barnes, is my near neighbor, and I frequently have opportunity to inquire from him as to the progress of the work.

Their principal activity, as I understand it, is to lay out land use programs for individual farmers within soil conservation districts, and to render the individual farmers some assistance, some financial assistance, in carrying out the suggested programs. That's all to the good, and I presume the Soil Conservation Service now has very experienced men on the job.

As a result of the controversy referred to earlier Dean Hutchinson, Director Crocheron, and State Engineer Hyatt recommended that the law be changed to eliminate them from the state commission, and the commission is now made up entirely of members of soil conservation districts. They have a state association of conservation districts which is active in promotion.

A few years ago they were successful in getting the state of California to set up a fund of $1,000,000 to purchase equipment which would be loaned to the soil conservation districts. There was some difficulty in connection with that shortly after the fund was established but it probably is all straightened out now.

CONSULTING WORK

CENTRAL VALLEY PROJECT

Baum: You have already referred to your consulting work with the Bureau of Reclamation and the Natural Resources Planning Board and the International Water Commission, United States and Mexico. I believe you did some work on the Central Valley Project.

Adams: At the request of the state the Bureau of Reclamation in 1930 began a study of the Central Valley Project with a view to federal assistance in carrying it through. This study was made under the direction of C. A. Bissell, a bureau engineer. Dr. Mead, who was commissioner of reclamation, looked upon the project at that time as a relief project for areas in the upper San Joaquin Valley which were running out of water due to depletion of the underground supply.

Baum: What was your part in that study?

Adams: Mr. Bissell asked me to make a study of the economic situation in the areas involved. I did this with the assistance of David M. Morgan and Walter E. Packard. Our report was included as one of the appendices to Mr. Bissell's voluminous report.

Water Charges Study, 1938

Baum: What is this report you have here?

Adams: This is a report prepared by Mr. R. V. Meikle, chief engineer of Turlock Irrigation District, and myself, "A Study of Water Charges in the Central Valley Project, California." That was done in 1938. It came about this way. Mr. Meikle had been a consulting engineer with the Bureau of Reclamation and the state for a number of years and as the bureau was progressing with the construction of the Central Valley Project they became concerned with the matter of water charges. They asked Mr. Meikle if he would make a study and he said he would if I would join with him. So the bureau asked me to join with him.

Baum: You had worked with him on other projects, hadn't you?

Adams: I had been in contact with him as chief engineer of Turlock District. He had participated in our Irrigation Census in 1910 and in our irrigation resources study in 1912.

We outlined a rather elaborate study. Mr. R. F. Walter was then chief engineer and Mr. E. B. Debler was the Bureau engineer in charge of investigations. Mr. Walker Young was in charge of construction of the Central Valley Project. We met with them in Sacramento and obtained their approval of our plan and then we

Adams: went to it. It was a very laborious piece of work.

In the first place, we had to decide what approach we would take to water charges. The procedures Professor Huberty and I had used on several previous reports were back of us as a basis. We went quite a step further in attempting to determine what would be proper charges for water. We made an economic classification of the soils in each of the prospective water service areas, twelve or thirteen of them. For each group of crops, for instance taking alfalfa as a basis, we determined as best we could the production on each of these various soils for that particular crop. The most productive soil for alfalfa was given a rating of 100 and it was scaled down as it was less productive. Our citrus areas down in the Valley were scaled from about 90 down to 40. We based our water charges only partly on the income on the various classifications of soil.

Baum: So the charges would be based on what the soil could produce rather than on what the water cost.

Adams: That was just one of the criteria used. David N. Morgan helped on the classification of soils a good deal. Professor Huberty went out in the field with us several times to go over the classification. All the areas were gone over by Mr. Meikle and myself after

Adams: the original fieldwork. (Look at maps of various service areas and discuss soils in each.)

Baum: This must have taken a long time.

Adams: The work was done during a period of five or six months, including the field and office work by assistants in preparation of our report. I won't go into the other criteria we used in the classifications.

Then we took each prospective area and Mr. Meikle figured the capital cost of distribution systems and maintenance, operations, and retirement costs. He had the assistance of Carl Holley, an engineer of Visalia very familiar with the local situation in that part of the valley.

We talked the situation over with the water committee in each county and made the best estimate we could as to the rate each of these areas would develop and utilize the water.

Mr. Walter Young was anxious to have the report finished as soon as possible, so we sent our manuscript to Sacramento for final typing in installments. Our main forte was all typed before we made our final summary and conclusions. So until these were completed we had no idea how it would turn out. The final table indicated that on the basis of the computed farm

Adams: costs and income and other factors considered the estimated average amount available to pay for water in the tenth year after construction was completed ranged from nothing to $6.84 per acre-foot with an average of only 97¢.

When we transmitted the report to Mr. Young, the engineer in charge of the project, we called attention to the fact that we'd had no opportunity to review the manuscript after our conclusions and final summary were prepared. We requested that they give us their comments and we would have them available when we reviewed the manuscript. Well, nothing came. I happened to be in Washington a month later and I called to see John Page, who was then commissioner of reclamation and whom I had known, a very good friend. He said, "Well, we're very glad to have the report, but we're disappointed on how it came out."

I was riding with Mr. Debler about three months later, we were going to San Diego for a meeting, and I said, "You've never given us your ideas on our report." He said, "Oh, I don't think it's been given very much consideration." Well, if you knew Mr. Debler you'd understand a remark of that kind. A year later I was told that if ever a report came into the bureau that was considered, this was one of them. That was

Adams: the other side of the question. I rather think our report was influential in the bureau's decision to operate the project as a utility rather than enter into repayment contracts as had always been the custom under other projects of the Reclamation Service. However, before our report was completed Walter Young indicated that the bureau might have to operate the project as a utility.

Another thing, I think, it had influence in having the bureau undertake the construction of distribution systems. That was done on an interest-free basis. Mr. Meikle, in figuring the cost of construction, had included interest.

The bureau never released our report. Mr. Debler made another kind of study, and the bureau decided on a charge of $3.00 or $3.50 per acre-foot for first-class water, and $1.50 per acre-foot for second-class water, and decided on operating the project as a utility.

Baum: Do you know where any copies of your study are available?

Adams: None available, they did not distribute them. Well, when the Central Valley Project Studies were undertaken under Professor Barrows some years later, he got copies of the report less the maps and released

Volma: [illegible]

Sam: [illegible]

Volma: [illegible]

Adams: them to members of some of the committees. They were all supposed to be returned to the bureau.

Baum: So your copy is the only one you know of.

Adams: Yes, and Mr. Meikle has a copy. Of course, the bureau has copies.

Solano Unit Studies, 1948

Baum: Did you make any further studies on the Central Valley Project?

Adams: Yes, in 1948, I reported on "Some Economic and Agricultural Aspects of the Proposed Solano Unit, Central Valley Irrigation Development," dated March 1948. The question of whether Berryessa Valley should be flooded for storage for the Solano Project was a very live question. There were a number of alternative upper sites. Mr. Edmonston asked me to include in my investigation the estimated annual loss of income in the principal proposed sites if flooded.

Baum: Do you recall your conclusions?

Adams: I was gathering facts. I went to every farm that would be flooded and got the best record I could of the farm income for a number of years, sometimes from records, largely from memory. Most of the people in Berryessa Valley preferred to stay there, but they were reconciled to going elsewhere if the Bureau of Reclamation would set them up equally well. I found

Adams: only one case where there was real bitterness. It was a rather elderly widow lady with two sons. She had lived most of her life in that valley, all her relatives were buried in a little cemetery which was to be flooded, and she was extremely bitter.

Baum: Naturally. Did you usually try to avoid making any recommendations as to which was a better policy?

Adams: Policy recommendations were not one of my functions. My job was merely to get the data together and present the facts.

Baum: But you must have had some ideas as to what you thought was the best policy.

Adams: I did not like to think of Berryessa Valley being flooded if the other sites would prove satisfactory. Berryessa Valley was an important area in Napa County. However, this was relatively a minor part of my study.

Before my report was completed Governor Warren had committed himself to the flooding of Berryessa Valley and the part of my report related to the various valleys was deleted from the report distributed by the state engineer. The more important part of my investigation had to do with the area in the Solano unit, including among others such questions as land classification, irrigation methods, water requirements, water costs and probable rates of irrigation development

Adams: if the Solano unit were constructed. The Bureau of Reclamation and the Department of Agriculture had made previous studies. I felt they were too optimistic in their land classification in the probable income to be derived from the lands irrigated, and as to the possibilities of future orchard development.

Comments on the Central Valley Project

Baum: There have been many differences of opinion as to the proper role for the federal and state governments with regard to the Central Valley Project.

Adams: Yes. The Central Valley Project was, as you well know, devised as a project to be built by the state. The first contract between the state and the Bureau of Reclamation providing for construction of the project by the bureau. There was a provision that the contract anticipated later agreement for state operation. I'm sure Mr. Hyatt was in favor of that, but the bureau would not include that provision in their contracts, and shortly after that, the bureau announced that the project would be a bureau project exclusively.

So far as I know there was no difference of opinion between Mr. Hyatt and Dr. Mead as to the relationships that would exist between the Federal Reclamation Bureau and the states. I think if Dr.

Adams: Mead had been younger and had lived and continued as commissioner of reclamation--he stayed in that position several years beyond his age limit of 70--I think the differences between the federal government and the state would not have arisen as they did. But new policies came to dominate in the Reclamation Bureau which involved a larger measure of federal control and with emphasis on distribution of so-called "low-cost power". This was very much regretted by many of the Reclamation Bureau people in the field and gradually some of them left. One of my best friends in the Reclamation Bureau was the assistant chief engineer and later the chief engineer, Mr. S. O. Harper, who finally resigned. He, like many of us, didn't approve of the policies that were governing the bureau. He's in Oakland now as a consulting engineer. He's earned many, many times in consulting work what he would have earned in the Reclamation Bureau.

Finally, fortunately, there was a complete reorganization when the present administration went in and the Reclamation Bureau came under administration again of engineers, although I have been told there's some complaint in the West regarding present administration of the bureau.

Baum: Wasn't State Engineer Hyatt in favor of the state taking over the Central Valley Project?

Adams: I believe he was at one time, although I am not sure. I think in later years he began to doubt the political practicability of it, about the time he retired. Mr. Edmonston, who succeeded him, was very strongly committed to the state taking over.

Baum: Do you think the 160-acre limitation has been detrimental or advantageous to the development of the country, especially California?

Adams: In general I think it has been justified, especially when the lands were government lands. I question whether it was suitable here in California under the Central Valley Project, all private lands. I think a modified type of restriction might have been a satisfactory procedure, perhaps letting excess lands (over 160 acres) pay a larger price for water.

Baum: Oh, pay the non-subsidized price?

Adams: Yes. Of course such an arrangement would fail to meet the objective of the 160-acre limitation, which was to restrict the benefits of federal aid to areas large enough to support a family, and prevent speculation by owners of large holdings, including those who by some means had obtained control of large areas of public land.

Adams: What was chiefly in mind was land still unirrigated. The fact that the original aim of the Central Valley Project was in the main to supply supplemental water to lands already irrigated and being farmed presented a situation not contemplated when the 160-acre limitation was adopted.

The justification for federal aid is that it increases the wealth of the country by adding to the productive capacity of the land. I would agree with some acreage limitation but where agriculture is so varied, as in California, 160 acres is altogether too arbitrary, or even 320 acres in the case of a husband and wife.

Baum: I believe the Engle bill introduced this year provided that excess water be paid for at a price that did not include the government subsidy.

Adams: Nothing has been enacted along that line yet.

Baum: If excess lands were required to pay a higher price for their water, could those farmers continue to operate profitably in competition with their neighbors who were getting the lower-priced water?

Adams: Oh, I think so.

Baum: Do you think that would be a satisfactory solution to the large landowner?

Adams: Oh, they're going to fight for the elimination of the limitation entirely. (This interview preceded the decision by the United States Supreme Court, upholding application of the 160-acre limitation to the Central Valley Project - Baum).

Baum: I believe there is an effort now to get an initiative on the ballot to make the 160-acre limitation state law. What would you think of that?

Adams: I think I should vote against it. I think the federal law is sufficient to cover it.

OTHER WORK

Tri-Counties Project in Nebraska, 1935

Baum: You previously said you had some contact with the Tri-Counties Project in Nebraska.

Adams: My contact with that project was brief, but very interesting. It was in 1935. Earlier I spoke of Major Stout having begun a study of this project for the Bureau of Reclamation and that he had died before the work was completed. I was in Denver at the time of his death and being on the ground was asked by Mr. Walter, chief engineer of the bureau, to complete it. I spent several weeks reviewing Major Stout's notes and going over the project in

Adams: the field.

The project had been started in the early days of the New Deal, under the Works Project or Works Progress Administration with an allocation of funds by the President, and the question of Congressional authorization was pending. It involved diverting waters of the North Platte River to a reservoir and power plant above North Platte and then over the divide separating the Platte and Republican rivers for irrigation in the Republican River watershed in the general vicinity of Holdrege.

I was on a field trip when a wire came from the Denver office to return, because Dr. Mead had called for a report by the Denver office. We had only two days to prepare a telegram summing up conclusions. The haste was due to a demand by Senator George Norris for a prompt report because he wanted to obtain the Congressional authorization. As father of the Tennessee Valley Authority, Senator Norris was in a position to get about what he wanted. He was a resident of Holdrege or some nearby town. With some misgiving I joined in the telegram to Dr. Mead giving general approval, although my part in the study had been a very small one. My misgivings were due to my feeling that the farmers in the Holdrege

Adams: and nearby areas did not seem to be willing to commit themselves to paying for water to the extent that would make the irrigation features of the project self-sustaining.

Central and eastern Nebraska are about on the generally-recognized dividing line between the arid and humid portions of the country. The value of supplemental irrigation in dry periods had been fully demonstrated but was not yet fully recognized by many of the farmers in the Holdrege area, as I found out by personal interviews and replies to a questionnaire Major Stout had circulated. So after the telegram sent to Dr. Mead, I wrote him of my misgivings. The project was authorized, but I do not know in just what form. It was largely a public power project tied in with other public power development in Platte River Valley. I do not know what was done with the irrigation features. There was a good deal of opposition along the Platte River to water being diverted out of that watershed to the Holdrege area.

Brush-burning Studies, 1947

Adams: Here's another study we did, "Hydrologic Aspects of Burning Brush and Woodland-Grass Ranges in California." 1947.

Baum: This was after you retired?

Adams: Yes, this was made at the request of DeWitt Nelson, the state forester, by Paul Ewing, Martin Huberty, and myself. I would not have liked to undertake any of the studies I did with Mr. Huberty without his help.

Baum: Wasn't this somewhat out of your line?

Adams: I was of course familiar with the work Professor Veihmeyer had been doing in brush-burning experiments and for a number of years I had been chairman of a College of Agriculture committee for review of flood control studies of the Department of Agriculture under the Federal Flood Control Act. The Flood Control Act passed by Congress authorized the Department of Agriculture to participate in investigations of flood control in aid of water conservation and soil erosion control. Whenever Congress authorized a flood control investigation or survey by the Army Engineers, the Department of Agriculture was authorized automatically to make a study of flood control in the area as to water conservation and soil erosion control. Those studies were made by three bureaus of the Department of Agriculture, the Bureau of Agricultural Economics, the Soil Conservation Service, and the Bureau of Forestry.

Adams: When those studies were about to be made, the extent to which the state should cooperate came up. The state had been cooperating with the Army Engineers previously in their flood control studies in California. So the state engineer, Mr. Hyatt, wrote to the Secretary of Agriculture soliciting the cooperation of the Department of Agriculture with the state engineer in those new studies authorized in the flood control act. The Secretary of Agriculture replied that the department's cooperation in such matters was always with the land-grant colleges. Mr. Hyatt was referred to Dean Hutchison for consideration of the question.

One afternoon I was called down to the dean's office. There was Mr. Hyatt, the chairman or principal officer of the State Planning Board, and the dean. I was informed of the correspondence I just told you about. The dean had been asked by Mr. Hyatt to participate in these studies in cooperation with the state engineer. The dean asked me to be chairman of the committee to cooperate with the state engineer and he appointed the following committee to work with me: Professor Walter Mulford and Professor J. Kittredge of forestry, Professor Bodman of soils, Professor Weir of drainage and soil conservation, Professors Veihmeyer and Huberty of our own department,

Adams: Professor Wantrup of agricultural economics, and Professor Harry B. Walker, head of agricultural engineering, and J. B. Brown of Agriculture Extension.

So we had the task of reviewing these reports by the Department of Agriculture. Those reports were made for all the major streams of the Sacramento and the San Joaquin Valleys, Salinas Valley, Ventura County, Santa Barbara County, the Santa Ana, the Los Angeles River, in fact, all the major streams in the state. Our committee went very carefully over all those reports. We took them into the field and studied the reports in the field, covered the ground with the authors of the reports, and then got together and made our own comments on the measures and expenditures. The state engineer's representative participated with us at all our meetings and all our field trips. They made their own reports.

These studies covered a period of perhaps three or four years and involved a lot of hard work. As a preliminary in that work, we did this separate background report, "Forests and Other Vegetative Cover as Related to Run-off Retardation and Soil Erosion Prevention in Flood Control," in 1939, mimeographed.

After I retired Professor Huberty took over the chairmanship and the activities continued for another

Adams: year or two until the reports were discontinued by the Department of Agriculture.

American River Studies, 1947

Adams: The next consulting work was with the state engineer, on "Some Irrigation Aspects of the Proposed American River Development," 1947. I took up matters that primarily concerned development of agricultural areas to be served by the American River, some lying north of the river as far as Lincoln in Placer County and the areas in Sacramento and San Joaquin counties which would be served by canals from Folsom Reservoir. Matters of soil conditions, crops grown, extent of irrigation, types and costs of irrigation enterprises already existent, mainly private pumping plants, suggestions regarding organization for taking over the handling of the water, the amounts it would seem equitable for the farmers to pay for the water...

The report I prepared is included in the appendices to "Supplemental Report with Reference to the Site of Folsom Reservoir of American River Development," published by the State Department of Public Works August 8, 1947.

After that I worked on the Solano Unit studies already mentioned.

Other Studies

Adams: The last report I made was this, "Community Organization for Irrigation in the United States," 1952. Professor Huberty at that time, for a period of about two years, was in charge of the irrigation work for the Food and Agricultural Organization of the United Nations with headquarters in Rome. He wrote to me that the people in the various areas in which the F.A.O. was working, the Middle East and elsewhere, had no idea of the extent to which farmers cooperated in irrigation in this country. He asked that I personally or with Mr. Ewing and Mr. Hutchins prepare a summary of what is being done. It was sort of a one-man job so I got into it.

Baum: It looks like you had to condense a lot of material into a short booklet.

Adams: I did. I had to go back and review a lot of material I had forgotten all about. That took time, more time than when I was younger. One of things they asked me to do was to prepare a selected list of legislation in the western states governing cooperation in irrigation. That involved a lot of close work in the law library.

Baum: That looks like a valuable compilation.

Adams: I think we can wind this up by merely referring to work Paul Ewing and I did for the State Water Resources Board. The main job was as editorial consultants on the 500-page report of the state engineer for the Water Resources Board on water resources of California, Bulletin No.1. We worked on and off for several months on that. We also did similar work on three cooperative regional reports the state engineer made for local areas.

That about winds up all my consulting work. Some of that was preparing reports, some was consulting work.

Baum: It was always for some government or public agency?

Adams: Yes. There was one study I made for a semi-public agency, the Palestine Economic Corporation. It was a short time before the British mandate was discontinued and Israel was formed into a separate nation. The British government had prepared an underground water law for Palestine which the people in Palestine did not like. The Palestine Economic Corporation, which generally guided and financed development in Palestine asked me to review the proposed law, which I did. I made such suggestions which occurred to me and summarized the general procedure in underground water law in the western United States.

Baum: When did you retire from the University?

Adams: 1945, thirteen years ago.

Baum: Much of this work was done after that?

Adams: Yes.

Baum: It sounds like you retired in name only.

Adams: Well, that was true. I contined working in the office every day up until three or four years ago.

CONCLUSION

Baum: What part of your work did you find most satisfying?

Adams: I couldn't say. It's been so varied. I've enjoyed every bit of it. When working exclusively for the Department of Agriculture my range of interests was irrigation in all its phases throughout the western United States. My principal field work then was in California, Utah, Wyoming, Colorado, and Nebraska, but I had opportunity for some contacts in all the other western irrigation states except the Dakotas, Kansas and Oklahoma.

When I returned to the irrigation work in 1910 after an absence of four years my main responsibility was, of course, irrigation in California. This did not prevent my retaining my interest in irrigation in other areas in the West. It was possible to do this through my association with the other members of Dr. Fortier's irrigation staff, through various conferences and meetings, through irrigation district studies in other states, through my association, over a number of years, with the Bureau of Reclamation, and my association in later years with the National Resources Planning Board.

I don't believe I could enjoy anything more than

Adams: the work in the cooperative investigations in California which lasted from 1910 to 1924 or 1925. Out of that work grew the gratifying privilege of organizing and heading for nearly 25 years the Irrigation Division of the College of Agriculture, which has since grown into a department with the finest facilities for research and teaching of any irrigation organization in the country, not surpassed, if equaled, anywhere. An offshoot of the original Irrigation Division is the Department of Irrigation and Soils at Los Angeles. One of my greatest satisfactions is that the two men who built up these departments and have exercised such effective leadership--Professor Veihmeyer at Davis and Professor Huberty at Los Angeles--came into the Irrigation Division during my period of responsibility. Professor Veihmeyer retired several years ago, but is still active. Professor Huberty continues in the department at Los Angeles but gave up the chairmanship to become director of the recently established Water Resources Center in the University.

Baum: I take it that much of your work, both in the old cooperative irrigation investigations and in the University, has been in the nature of public service. Was it the opportunity to be of public service that

Professor Martin R. Huberty

Baum: was most rewarding to you, or the finding of solutions to problems?

Adams: I would say that investigation, research, and instruction at Davis were our primary responsibilities, but we could not overlook our responsibility in public service. I was the one in the organization most free to engage in public service and I thoroughly enjoyed it--the work in legislation in the early days, assistance to communities considering organization of irrigation districts, work with the Commonwealth Club, chambers of commerce, the California Economic Research Council, the Farm Bureau, and other organizations.

Baum: With all these studies you were making, it sounds like you must have spent every night working.

Adams: Oh no, I didn't work nights much. I put in long days at the office and in the field, but I worked no harder than other members of our group.

Baum: You must have been on the road a good bit, when traveling was slower than it is now.

Adams: Oh yes, there was a good deal of traveling. I couldn't exercise leadership unless I knew what was going on in the state, knew the people who were involved. If there was an important conference involving some phase of irrigation, I made it a point to be there

Adams: if I could. You have to have prospective when you work on these things and you only get it by thinking things out in the environment of your subject.

Baum: Do you feel that the type of life you led left you time for your personal life?

Adams: Oh, I neglected my family, there's no doubt about that. That work in France in 1919, my work in Palestine, my absence from home so much of the time wasn't fair to Mrs. Adams and the children. Just one of those things when you undertake to do so many things. But I had lots of fun and came to know a great many people and acquired a good many friends over the years. One of the things I miss now is that I don't get over the state; I'd give anything to get in the car and go over every section of it. I miss the contact with the people in the field.

Baum: What other things have you undertaken since your retirement besides the studies you mentioned already.

Adams: I participated actively in several of the Commonwealth Club studies on the general water problem.

Preparation of this paper, "Some Policy Issues in the Central Valley Project", took a lot of time and thought. I did that as a paper for the Commonwealth Club.

Baum: I see it's dated June 29, 1949.

Adams: There were others of that type. Another was this.

Baum: (Reading) California Farm Bureau Monthly, March 1953, "Irrigation in California as Viewed from the Sidelines". Sort of a brief history. I don't know how you can say "from the sidelines."

Adams: Well, I wasn't in it anymore.

Baum: Did they ask you to do this?

Adams: Yes. Here's another thing, a lot of fun.

Baum: (Reading) "Water for the Land in California's Central Valley," script for film, April 1953.

Adams: I worked on that off and on for a couple of years, not in writing the script, in making the film. The idea of the film was that it should be helpful educationally among those not familiar with the subject. I wanted to give some prospective, show what had already been accomplished and just where the Central Valley Projects fitted in. But I took it sixteen frames per second and you can't fit a sound tract to that, so the thing didn't take very well.

Baum: Did you take the films yourself?

Adams: Yes, most of them.

Baum: I've certainly been impressed with the still photographs you have included in your reports.

Adams: Well, I've been taking pictures all my life. It always seemed to me that reports and papers are

Adams: livened up with pictures, so I always included them. All of us in the irrigation division of the College of Agriculture, and in the Department of Agriculture, took pictures, not only to illustrate reports but to have a file for instruction and other general purposes.

The main project I've had on hand began about 1953 and is not yet completed, that biography of my father.

Baum: What stage are you at with that?

Adams: I have a good deal more to do.

Baum: I'm afraid I interrupted that work.

Adams: Yes, you did. When these interviews began I was working on the founding and early history of the Commonwealth Club. I haven't given any attention to Father's newspaper career yet. I have in scrapbooks every editorial he wrote for the Chronicle for a period of about twenty-five years. I have the Weekly Chronicle, of which he was agricultural editor for four or five years. I also have many special articles on economic, financial, and agricultural questions he wrote for the Chronicle, many manuscript articles on cooperation in agriculture, and miscellaneous public issues, correspondence, articles in periodicals, monthly financial letters for the Anglo-California Bank over a period of several years.

Adams: When Dr. Monroe Deutsch was president of the Commonwealth Club he requested me to prepare a paper about Father's connection with the Commonwealth Club and telling about his early life. I prepared this. I mislaid Dr. Deutsch's letter and went into matters in which they were not so concerned and I left out matters they were more concerned with. I more or less missed the boat. So in my chapter in father's biography dealing with the Commonwealth Club I plan to cover what I should have covered before and to give a copy to the Commonwealth Club.

Baum: Well, I guess we've about reached the end of this interview. We've covered a lot of ground.

Adams: Yes, that's true. I think we've gone far enough. I hope I have not overemphasized my own part in things. I've been just one of many in the work. I can't speak too highly of the members of our University group and my associates in the irrigation work of the Department of Agriculture. I mentioned many of them in the little history I prepared of the irrigation division. I certainly appreciate your great patience in these interviews and your sympathetic understanding of my difficulties in trying to recall matters many of which happened so many years ago.

A P P E N D I X

Copy of Memorandum of Plan to Utilize and Reclaim the Arid Public Domain, by George H. Maxwell

The demand of the West for its share of River and Harbor Appropriations to build storage reservoirs cannot be satisfied by any cession of lands to the States. If every acre of the public lands were ceded to the States, the West would still insist on its demand for a just share of River and Harbor Appropriations for Reservoirs, and the demand is one which under any circumstances will be steadily urged until conceded.

Any objection to the appropriation of money through the River and Harbor Bill to build storage Reservoirs on the ground that the expenditure would be without adequate return to the Government, is removed by the fact that the Conservation of the water would make possible the reclamation and sale of vast areas of the public lands, which would return to the government a much larger sum than would be expended for reservoirs and such return would be assured by the adoption of the following plan to utilize the public grazing lands and to reclaim and sell the public irrigable lands.

The adoption of this plan would yield a new return of more than ONE HUNDRED MILLION DOLLARS to the federal government and would require no expenditure except for the necessary

surveys:

1. The public lands to be surveyed by the Geological Survey, so as to segregate and show the irrigable lands, and the water supplies available for their reclamation; and each tract of irrigable land susceptible of reclamation by irrigation from a common source of water supply and by the same system of works to be separately platted with plan of system of works;

2. The Secretary of the Interior to be authorized to lease the grazing lands, under rules and regulations to be established by him, and to exchange lands of equal value when desirable or necessary to consolidate areas for advantageous leasing or reclamation, Provided: That each owner and occupant of cultivated land shall have a preferred right to lease a proportional area of grazing land, and that no lease shall be for longer than five years or for more than five thousand one hundred and twenty acres of land;

3. The entire net rentals in each state and territory to be used to build irrigation works therein for the reclamation of the irrigable lands, which shall be thereafter sold to actual settlers only at not less than one dollar and a quarter per acre in tracts of not more than one hundred and sixty acres to any one settler with a proportional interest in the water supply and irrigation system which shall be perpetually appurtenant to the land;

4. The Secretary of the Interior to be authorized to delegate to appropriate State officials in any state the power to carry out the provisions of this section relating to leasing and building irrigation works under such rules and regulations as he may from time to time establish.

Copy of Substitute for Memorandum of Plan to Utilize and Reclaim the Arid Public Domain

1. A leasing system to be inaugurated for all of the public grazing lands: Title to said lands to remain in the General Government; but, in those States having an Engineering Bureau, and complying with the conditions of the United States laws, the States to have the right to control the leasing of said lands, and to expend the rentals derived therefrom for the construction of irrigation works; The rate of rental to be low, and to be uniform; The total acreage which one individual can lease, not to exceed eight (8) sections; Settlers on irrigable lands having the preference right to leases.

2. The construction of important storage reservoirs by the Federal Government, as recommended in the Chittenden report.

Approved,

Copy of Draft of Letter Prepared by Elwood Mead for Mr. H. G. Burt, President of Union Pacific Railroad, to be Submitted to Board of Directors

Gentlemen:

A short time ago there was presented to the managers of five railroads, which cross the arid states, a confidential proposal called "A Plan of Campaign for Federal Storage Reservoirs, Irrigation Development and Reclamation of Public Lands." It was prepared by Mr. George H. Maxwell, an Attorney of San Francisco, who wishes to devote his services to arousing public sentiment in support of certain irrigation legislation by Congress. In return he asks that each of the railroads approached contribute $500 per month for one year to pay the expenses of this educational movement, and urges in support of this that the present unsatisfactory situation and the need of a change therein will justify the effort he wishes to make and the outlay on the part of the railroads. I am informed that all the roads approached except the Union Pacific have agreed to contribute the amount asked for.

There is no question that the present situation is in many ways unsatisfactory, nor that the obstacles which now prevent canal building or the coming of settlers can be removed by wise laws, but I am not satisfied that the

measures proposed by Mr. Maxwell are the ones needed and before action desire to be informed of your views.

Without going into a general discussion of irrigation questions I will first give the evils which beset irrigation in the arid states tributary to the Union Pacific railroad, and the measures which seem to me best calculated to remove them, and will then consider Mr. Maxwell's program.

In the five states of Colorado, Wyoming, Utah, Idaho and Nevada we are confronted by the following conditions: The large rivers are at present almost unused. More water runs to waste in Snake and Green rivers alone than is used in irrigation in all these five states. If we can have these rivers diverted and used it will quadruple the population and local traffic of the railroads. It takes fifty acres of unirrigated land to support a steer; the same number of acres irrigated will support a settler, his family and fifty steers.

At present but little is being done. Canal building is at a standstill. Nearly all the large works built to water public land have been losing investments. Settlement is slow. Only about one-half per cent of the public land is filed on in a year. The causes for this are as follows:

1st. Burdensome taxation.

In the five states above referred to less than twenty per cent of their area is taxed, the remainder being public land. The cost of local and state government over the eighty per cent of unproductive territory falls heavily on the interests which can be reached. Irrigated lands and railroads are two of the principal suffers.

2nd. Opposition of the range livestock interests.

The greater part of the public land is now used as a free pasture ground by range livestock men. The owners of these migratory flocks and herds range from Oregon to Nebraska. Having no settled habitation they make no improvements and do nothing to develop the country. On the contrary, the free range is the one great obstacle to agricultural development. So long as it costs no more to feed over one hundred thousand acres than it does over a single acre so long will the men who enjoy this privilege oppose irrigation. What the owners of range stock want is an open water front and as few men to use the public land as possible. Every canal means fencing for streams and more settlers to dispute for the use of the range.

3rd. The grazing land should be leased.

More than ninety per cent of the remaining public land has no value except as grazing land. It will never be farmed and it cannot be left perpetually as an

If, however, the irrigator of 160 acres could have the right to lease a few thousand acres of the contiguous grazing land and have such control over it as would warrant its improvement, he would be in a position to engage in growing live stock with a security and profit not now possible. The adoption of such a leasing system would double the value of irrigated land because it would bring a new class of purchasers--the range stockmen--into competition for its possession and improvement.

5th. Rentals from grazing land should be used for canal building.

The chief argument for a leasing system is to give security of control and to make it to the interest of stockmen to protect and improve the grazing lands; to make them canal builders and irrigators instead of enemies of settlers. But those lands can be made productive of a large income. Wyoming is leasing the 700,000 acres of grazing land, donated when admitted to Statehood, for five cents an acre and there are applications on file offering to rent at the same rate <u>two million</u> acres more. Montana is receiving $125,000 a year from leases of state pasture lands, the annual rentals ranging from 2-½ to 12 cents per acre. Colorado has sold a large percentage of the lands given the state and has an income from both interest on money received for land sold and from rentals.

The latter alone amounts to over $200,000 per year. The state leases no land for less than five cents an acre and has applications to rent aggregating hundreds of thousands of acres which they cannot meet.

The people who are leasing these lands find that the security of tenure is worth more than the privilege of free range and the uncertainties and controversies which go with it. The paying of two, five or twelve cents an acre is not regarded as a burden but is being clamored for as the only means by which farms already irrigated can be cultivated with profit. Those familiar with the situation believe that if a low rental was adopted there would be no difficulty in securing an immediate rental of every acre of pasture land in the states I am considering. At one cent an acre the income to the State of Wyoming would be over $400,000. In Colorado it would be nearly as much. In Idaho fully as great, and in the five states the lands which now bring nothing to either the State or Nation could be made to produce an annual income of over two million dollars. It is probable that the loss in cattle last winter was more than that much. The adoption of a leasing system would put an end to such calamities.

I have referred to the fact that thus far the building of large canals has proven unprofitable. We have about reached the end of cheap ditches. Most of the work of the

future must be of an expensive character. In order to secure its rapid prosecution the conditions for investment must be made more favorable than in the past. The rentals which could be obtained from the leasing of the pasture lands would permit of this. If the rentals for these lands are collected by the states, as I believe they should be, they could either build canals and sell them to settlers at nominal cost or they could subsidize associations of settlers or canal companies paying part of the expenses of construction and requiring that water rights be sold at a correspondingly reduced price.

THE RESERVOIR PROBLEM

The cheapest form of irrigation is the building of ditches to take water directly from streams. But there comes a time when the low water discharge is all utilized while large volumes run to waste during the flood season. On many streams this condition has been reached. Settlers find that they have water for a part of the season but not for sufficient time to bring crops to maturity. The needed water runs to waste before it can be used. They desire to have it stored for later use.

There are several obstacles to the building of reservoirs by private enterprise. In many cases the outlay is more than settlers can afford. In others the location

of the reservoir on the head of a stream makes it difficult for those who build to reap the benefits of its construction or prevent others from doing so. It is found difficult if not impossible to get all the settlers along a stream to join in the construction of storage works at the head. The earlier appropriators prefer to depend on the natural flow. Many others are so located that if the reservoir is built they can steal all the water they need and hence refuse to contribute. These difficulties in the way of private enterprise have led to a demand that the Government take charge of reservoir construction and build these works for the promotion of the general good. There is no question that if the leasing system as previously outlined was put into effect that a considerable portion of the money derived from leases would be expended in the construction of reservoirs, nor is there doubt that the agricultural importance of the western states would be enormously increased thereby. On a majority of streams the storing of the flood waters will increase the acreage which can be irrigated from two to five times over what is possible from the natural flow alone.

There is one class of reservoirs which it can be properly and justly urged should be built by the National Government. Those which are an aid to commerce. There has already been expended on the headwaters of the Missouri

over a million and a half dollars to protect the banks of that stream from the ravages of the floods which come down each year from the mountains at its head. The estimates for further work of this kind amount to nearly two million dollars. All these measures are simply palliative. They seek to mitigate the effect rather than remove the cause. The investigations of government engineers, and of others well qualified to pass upon this question, are unanimous that the only enduring and effective solution both of the problem of flood protection and improved navigation on this stream is to store the flood waters at the head. The remarkably favorable sites for storage makes it possible to hold back the floods within reasonable limits at moderate cost. It is also probably true that there are reservoir projects whose magnitude puts them out of the domain of private enterprise and where the special interests of the government are of sufficient importance to render their construction as a public enterprise entirely justifiable. But on the whole, I believe that the problem of irrigation development is a matter of state rather than National aid and that the means for carrying it out can be found in a reform in our land laws which will provide for the management of the grazing lands and the right use of the proceeds arising from their rental.

Mr. Maxwell's program, I regret to say, is based on an entirely different conception. In his memoranda of plan he makes Government reservoirs the principal feature and Governmental control of irrigation an ultimate possibility. He justifies the building of storage reservoirs by Federal appropriation on the ground that the sales of public land reclaimed would return to the Government a much larger sum than would be expended thereon, his estimate of the net return being more than $100,000,000. I do not see how such a result can be anticipated. The demand for storage reservoirs does not come from those who desire to occupy public land, but from those who already own land for which there is not a sufficient water supply. Irrigation from streams is cheaper than irrigation from reservoirs but the building of canals by private enterprise has not proved remunerative. It is difficult to see how the building of reservoirs by the more costly and dilatory procedure of the National Government could produce a different result. Experience and the judgement of engineers who have made a special study of this problem do not sustain Mr. Maxwell's anticipations. Col. Chittenden, who investigated the reservoir problem for the National Government, held that storage reservoirs would not pay and ought not to be expected to pay. That on the contrary the correct policy for the Government,

if it built them, was to build them for the public welfare and turn them over to the free use of the states exactly as it permits the harbors which it improves to be used without any charge of toll. The last report of Elwood Mead, State Engineer of Wyoming, states that the majority of reservoirs are to be considered exactly as street lamps in a city, an important public utility but one which private enterprise alone cannot profitably construct or operate. The State of Colorado has appropriated money for several reservoirs, but in no case was there an effort made to derive a direct return therefrom. They were built like public roads or bridges for the general good. If storage reservoirs can be built at a profit private enterprise can be depended upon to do the work and there is no necessity for the Government entering upon this work. Hence, I should regard this portion of Mr. Maxwell's plan as being calculated to defeat rather than promote legislation.

The other features of Mr. Maxwell's plan are as follows:

First. The public lands to be surveyed by a Bureau of the General Government, the land to be reclaimed to be plotted and plans for all works to be made by this bureau.

Second. The Secretary of the Interior to be authorized to lease the grazing lands.

Third. The net rentals for each state to be used to build irrigation works therein.

Fourth. The Secretary of the Interior to be authorized to delegate to state officials the power to lease the grazing lands.

I am only able to indorse the last of these. Concerning the first it is open to the objection that it would involve a large appropriation which might defeat other legislation of far greater importance. If the money to build canals is to come from either private pockets or from the rentals of lands leased by the states those parties ought to be permitted to select the place for its expenditure and prepare the plans. In addition there are grave objections to such a sweeping measure of Federal control at the outset. Each of the five states in which the Union Pacific has a special interest has a State Engineer whose business it is to supervise irrigation development. In each of those states all titles to water come from the state. The General Government has recognized state laws and customs in respect to irrigation matters and has surrendered to two of the states, in the act of admission, the ownership and control of the waters within their borders. However wise it might have been in the beginning to have had a general plan of irrigation works, the attempt now to interfere with the rights acquired under state laws, or with state supervision, through the laying out and direction of new works by the General Government would result in a conflict

with the holders of existing water rights and in a local opposition which would be fatal to all irrigation legislation.

I believe, therefore, that in place of the elaborate plan submitted the proper course to adopt is to urge first of all a leasing system for the public grazing land. Next the construction of reservoirs by the General Government wherever public interests will justify appropriations therefor, but the refusal of such appropriations where the principal object is to provide a free water supply to lands already in private hands. In order to obviate the objections which might be urged to a cession of the absolute title of these lands to the states it might be well to simply give to the states the right to lease these lands, leaving the title thereto in the General Government, while to forestall any fear that the ulterior motive is to keep these lands out of settlers' hands the leased lands might be left open to settlement exactly as they now are with two limitations: The repeal of the commutation clause in the homestead law and requiring any settler on leased land to pay for any improvements placed thereon by the lessee. In other words to make a campaign for the development of the west based solely on public considerations and where no claims are made which will not bear the most searching scrutiny.

Copy of Letter from Elwood Mead to Mr. H. G. Burt Regarding George Maxwell's Plan, April 21, 1899

Cheyenne, Wyo., April 21, 1899.

Mr. H. G. Burt,
Prest. U. P. Ry.,
Omaha, Nebr.

Dear Sir:

I regret not meeting you on my way home from St. Paul in order to thank you personally for the pleasant acquaintances which the trip enabled me to form.

I have already given Mr. McAllister my views on the proposed educational campaign, but it may prove convenient for you to have me repeat them in this letter.

At our conference we discussed two propositions: (1) The securing of a leasing system for the public grazing lands. (2) National appropriations for the construction of irrigation reservoirs.

Of the two, I believe the first is of the most importance. I also believe that it can be more readily secured. Leasing these vacant lands makes it to the interest of whoever secures control to improve them. The adoption of a general leasing system will mean the beginning of fence

building and small reservoir construction all over the west. As you know I have advocated the cession of these lands to the States in order to get these lands under laws, which would invite private capital to improve them, but I see no reason why a leasing law which leaves the title in the General Government, but gives to the States their management and the rentals derived therefrom will not answer every purpose of an outright cession.

I do not favor leaving the leasing of these lands to the Interior Department. I would rather risk the wisdom and fairness of state officials, who will at least act promptly, than to subject settlers to the delay and red tape at Washington.

I regard the advocacy of national appropriations for reservoirs as a valuable feature of this educational program. The construction of many reservoirs can be justified on the ground that they are a legitimate part of river and harbor improvement for the benefit of commerce. Reservoirs at the head of the Missouri to impound its waters is the only effective, and, in the end the most economical way of preventing floods along its course. It is possible to accomplish this result within reasonable limits of cost and water stored will be worth more than the outlay in extending the area which can be irrigated.

Aside, however from the merits of national appropriations, about which there may be a difference of opinion,

there is no doubt that the advocacy of their construction has done more to make eastern congressmen look with favor on liberal legislation in other directions than all other influences combined and the agitation in their behalf will aid rather than retard the adoption of a leasing system.

These were the only matters discussed at the conference, but among the papers which were handed me from you was a "Memorandum of a Plan to Utilize and Reclaim the Public Domain," one feature of which seems to me of doubtful expediency.

I refer to the paragraph advocating a government survey to segregate the irrigable lands and the preparation of plans for the works to reclaim them. My reasons for this doubt are as follows: We are not suffering from a lack of knowledge as to where such lands are or how they can be irrigated, but from an inability to secure money to reclaim them.

Such surveys would mean large appropriations. I fear this would prove an obstacle to legislation in other directions and might delay the establishment of a leasing system until the survey was completed. Moreover, the principle is wrong. Individuals or corporations who build ditches prefer to make their own locations and to spend money on plans of their own creation. The engineers in charge of river and harbor improvements will, beyond

question, insist on making the plans for any reservoirs for whose safety they may become responsible. If the lands are leased the state should direct the expenditure of the rentals. They now control the water and should plan the works for its diversion and use.

There would be danger of opposition from the state irrigation authorities and from appropriators of water under state laws, of which your railroad is a large one in this state. A similar measure was passed about ten years ago. To resume its advocacy would be to array against this legislation many western senators, like Senator Teller, who will oppose any sort of national legislation which looks to interference with state control of water supply.

It may be that I misunderstand this paragraph and that some of my objections are founded on misconception of its purpose, but in any event, I think the chances of success will be greatly increased if we confine our campaign to the fewest and simplest objects possible, leaving out all issues not material or likely to provoke opposition.

As Mr. Maxwell has explained to me personally that he has no opposition to this part of the plan being retired I would suggest that you recommend this to be done in case you join in the proposed arrangement.

Sincerely yours,

(Signed) Elwood Mead.

Copy of Letter from Frank Adams to Edward F. Adams Regarding Appropriations for Irrigation Investigations, December 14, 1901

UNITED STATES DEPARTMENT OF AGRICULTURE, A.B.H.
OFFICE OF EXPERIMENT STATIONS,
A. C. TRUE, DIRECTOR

IRRIGATION INVESTIGATIONS,
Elwood Mead,
Irrigation Expert in Charge.

Washington, D. C. Dec. 14, 1901.

(Personal.)

Mr. EDWARD F. ADAMS,
Editorial Rooms, Chronicle,
San Francisco, California.

Dear Father:

As soon as we know anything definite of the way we are going to take Congress, we will let you know so that you can work all the wires possible at that end. Just at present both the questions of a bureau and our appropriation for next year are held in abeyance and it is not likely that anything will be done about either of them until Congress is convened after the holidays. In fact, we are lying low about the bureau until we see if any other bureaus are going to be asked for, because it seems the best plan to wait until the pie is cut before asking for a piece. It

may be that we shall not ask for it at all this year. The agricultural committee of the House is so far an unknown quantity, not a single man from the arid region being on it. Mr. Wadsworth, the chairman, has never been very favorable to our work but thinks it should be under the geological survey. The Secretary has not yet taken any stand one way or the other in the matter and does not seem disposed to for the present. It might considerably injure the cause to present the matter to such a committee as the House committee on agriculture is, unless the Secretary were with us heart and soul and ready to fight for what we are after.

As regards the appropriation, we are going to ask for $100,000.00, some of which we want immediately available to enable us to finish out the work of the year as now planned, including the publication of the reports now in progress and also Mr. Mead's European investigations. I think I wrote you that Mr. Johnston is now in Egypt making an investigation and that Mr. Mead hopes to go to Egypt and Italy as soon as the matters in connection with the office requiring attention before Congress are settled, which will undoubtedly not be until the late Spring or early Summer. Mr. Mead also wants to strengthen the investigation at home by adding a man to look into pumping and also one to study drainage, the idea being to broaden

the work of the office on the basis of the proposed bureau of rural engineering. With what is left of last year's appropriation, nothing effective could be done in this line unless aid comes from congress in the way of the increased appropriation, part of which to become immediately available.

The California congressional delegation seems to be quite interested in the work of the office, and with the exception of Mr. Coombs of Napa, who is non-committal, those whom we have seen of the delegation say that they will support us in whatever we ask for. Mr. Mead has had a talk with Mr. Bark and was very favorably impressed with his attitude, and we are counting on substantial support from the whole delegation. Yesterday Senator Perkins telephoned over to ask how many copies of the California report Congress ought to print. This was done without any solicitation whatever and shows that he is interested in the work. So far as the general question of government aid is concerned, it does not seem likely at present that any plan of real value will be carried out. The western congressmen have been endeavoring to agree on some bill, but they have not yet completed it. The pressure for national control if national aid is extended, is very strong. Mr. Maxwell and his followers continue to misrepresent the attitude of those who favor merely

supplementing state aid by such regulations as will conform to state laws where satisfactory, or encouraging them where unsatisfactory. The President in his message and the Secretary in his annual report took the right stand simply because Mr. Mead wrote those portions of their documents which have to do with national aid. This, of course, is not generally known.

I will send you a copy of the Secretary's report and would suggest that wherever you can get a meeting or an organization to indorse his stand, it would help the cause if that fact could be communicated to the Secretary.

My Chronicle has run out and I have not renewed it so I did not see the account of the meeting of the fruit growers and their resolutions in favor of our work. We are supposed to get all clippings referring to irrigation from all over the country but have not yet succeeded in getting many from San Francisco papers. We will jog the clipping bureau up and try to get a little better service.

Affectionately,

(Signed) Frank.

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Frank Adams, Prof Emeritus, Dies at 91, Irrigation Expert

Frank Adams, professor emeritus of irrigation, died Wednesday at the age of 91 at his home in Berkeley.

He retired in 1945 after spending 29 years here and at the Davis campus.

From 1916 to 1936 Adams was head of the Division of Irrigation Investigations and Practice in the University College of Agriculture.

He also served as irrigation economist both in the University's Agricultural Experiment Station and in the Giannini Foundation of Agriculture Economics.

In 1947 Adams received the John Deere Gold Medal for outstanding achievement in agriculture awarded by the American Society of Agricultural Engineers.

He was awarded an honorary degree of Doctor of Laws by the University at the 1949 Charter Day exercises here.

Adams was characterized at that time by University President Robert Gordon Sproul as "a pioneer in the application of engineering and economics to the problems of agriculture on semi-arid lands" and as "skillful in organizing farmers and drafting legislation for the development, distribution, and use of water in the West."

He is survived by four children, Mrs. Helen A. Barr of Berkeley, Francis E. Adams of Monte Sereno, David H. Adams of Los Gatos, and Thomas C. Adams of Portland, ten grandchildren, and two great grandchildren.

Memorial services will be held at 11:00 a.m. this Monday at the Chapel of the First Congregational Church of Berkeley, Dana and Durant Avenue.

Professor Frank Adams Dies at 91

Frank Adams, emeritus professor of irrigation at the University of California at Berkeley and onetime agricultural advisor to the Palestinian Government, died in his Berkeley home yesterday. He was 91.

A memorial service will be held at 11 a.m. Monday in the First Congregational Church of Berkeley, Dana and Durant avenues.

Professor Adams, a native of Illinois, was a son of Edward F. Adams, onetime editorial writer for The San Francisco Chronicle and a founder of the Commonwealth Club of California.

He was a 1901 graduate of Stanford University and was awarded a master's degree from the University of Nebraska in 1906.

Professor Adams joined the UC faculty in 1916 as head of the Division of Irrigation Investigations and Practice in the university's College of Agriculture.

He served as consulting engineer and economist for the Federal Bureau of Reclamation between 1926 and 1940, and in 1927 went to Palestine as a member of that country's Advisory Committee on Agricultural Colonization.

Professor Adams was the recipient in 1947 of the John Deere Gold Medal for achievments in agriculture. He was awarded an honorary degree of doctor of laws and letters by UC in 1949.

He is survived by a daughter, Helen A. Barr of Berkeley; by three sons, Francis E. Adams of Monte Sereno, David H. Adams of Los Gatos, and Thomas C. Adams of Portland, Ore.; by ten grandchildren and by two great grandchildren.