

"Charles A. Lory and the Challenges of Colorado's Semi-Arid Frontier"

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Approximately eight miles directly west of Fort Collins, the home of Colorado State University, is Charles A. Lory State Park. Encompassing 2,600 acres of the Rocky Mountain foothills, the park's eastern boundary overlook Horsetooth Reservoir, largest in a network of water storage facilities that comprise the Colorado-Big Thompson Project.¹ The existence of this significant reclamation endeavor was appreciably influenced by the efforts of Charles Alfred Lory (1872-1969)--a man committed to meeting the challenges of Colorado's semi-arid frontier.

Charles Lory was born in Sardis, Ohio, a small town on the west bank of the Ohio River about forty miles southwest of Wheeling, West Virginia. There, he grew to adolescence in a region characterized by abundant rainfall, lush vegetation, and harsh winters. In 1888 his parents, believing that Mrs. Lory's tenuous health would benefit from a western climate, decided to move their family to Colorado.² Charles vividly recalled the arrival of his family at the Loveland, Colorado, depot on May 11, 1888:

We were met at the train by an uncle of Mother by marriage, Christian Koenig, and rode to his farm in a lumber wagon drawn by "Nellie" and "Nance." We wondered who had spilled so much flour on the road when we saw the alkali in the Big Thompson Bottom, why people used Barb Wire for fences instead of boards, marveled at the mountains and the green grain and alfalfa fields.³

Lory's wonderment at barbed wire and alkali presaged what would become for him a profound involvement with Colorado's environmental uniqueness. His journey from the East had taken him across America's Great Plains where less than twenty inches of rain falls annually. Brown, treeless grasslands, once called the "Great American Desert" by explorer Stephen H. Long, dominate this area unless man can bring irrigation water to the soil. The mountains that Lory had observed are part of the Front Range, one of many mountain ranges clustered through the center of the state that trap moisture-laden winds and provide watersheds for a network of major river systems. West of the mountains extends a region of high plateaus, slashed by deep river canyons, yet characteristically barren and dry. Colorado possesses vast geographical diversity but its population since the discovery of gold in 1858 has concentrated east of the Front Range; thus, it

is here that the challenges of a semi-arid frontier have exerted their greatest impact.⁴ And it was here that Charles Lory's perceptions of Colorado were fundamentally molded.

Not long after their arrival, the Lory family filed on a homestead four-and-a-half miles south of Windsor. "Homesteading," Charles Lory later observed, "is always the most expensive way to get land because it's such hard work."⁵ To easterners, ignorant of the West, the prospect of 160 acres of free government land might have seemed highly attractive. Soon, however, the problems of growing crops on soil where trees could not thrive became evident. Rainfall did not suffice. The "green grain and alfalfa fields" that Lory had seen in May of 1888 could be sustained only by the artificial diversion of water from existing rivers and streams.

Earlier Colorado agriculturalists had come to recognize this reality and accordingly devised a new legal system governing the use of water. The traditional Anglo-American doctrine of riparian rights reflected the conditions of a humid environment where hydraulic power and navigation represented the major value of stream or river water, legally precluding any usage that reduced or altered the flow of such water. This legal principle was clearly ill-suited to the semi-arid West where settlers quickly discovered that "every drop of water that runs into the sea without rendering a commercial return, is a public waste." Obviously a new system was required, one that would safeguard the rights of the person who invested capital and labor in diverting water for irrigation, industrial or domestic purposes.⁶ Adopting a practice common to western mining camps, Coloradans came to sanction the diversion of water by granting priority of right to the individual who had made the earliest productive diversion or appropriation. In essence, "first in time" meant "first in use." Moreover, the state instituted an administrative system to enforce this concept by establishing irrigation districts, corresponding geographically to Colorado's main river systems, and designated officials to register water rights claims, oversee equitable water distribution, and adjudicate disputes.⁷

Prior to settling his homestead, Lory's father rented land that received only a marginal supply of irrigation water. Charles assisted his father and recalled: "Both of us . . . learned the hard way that crops can not be grown on seeped bottom land whose most prolific crop is 'alkali grass'" Therefore, in developing their own land, the Lorys joined a group of neighboring families in establishing a mutual water users association. Known as the Big Cut Lateral and Reservoir Company, this organization acquired rights to water from the Big Thompson River conveyed by the Loveland and Greeley Canal. However, nearly a mile of land separated the canal from the homesteads, necessitating the construction of a diversion ditch and storage reservoir.⁸

Young Charles took a leading part in this work, manning a plow hitched to a six-horse team in order to make a "Big Cut" through a hill that blocked the desired water. This was grueling manual labor--hot, dirty, and exhausting. It instilled the youth with an acute appreciation of water's preciousness. In later years, when professional duties required him to travel frequently, often despite blizzards or heavy rain storms, he never complained. From his perspective there could never be enough moisture.⁹ The experience gained in canal and reservoir construction work led directly to Lory's employment as a ditch rider. In the spring of 1893 he was hired by the Hillsboro Irrigation Company and, mounted on horseback, spent the summer months inspecting the canal for breaks, opening headgates to provide each farmer with an allotted share, and gauging the water's velocity. The practical lessons of this activity were innumerable-

I soon learned not to expect a man whose crop is "burning" to be reasonable, that gossiping causes trouble, and it is foolish to tell men on the upper section of the canal what some on the lower section think of them--especially in a dry year. Eighteen hundred and [ninety-] three was a very poor water year and crop losses, due to lack of water, severe.

He also learned that consuming "ditch water for domestic purposes" could have dire consequences. On a parchingly hot July day, the temptation to take a drink proved irresistible,

and he contracted a serious case of typhoid fever.¹⁰

The following year Lory accepted a similar position with the Big Cut Lateral and Reservoir Company, and each summer for nearly a decade found this to be a convenient way of earning money. In his opinion, it was time well spent:

My experience as a ditchrider gave me broad knowledge of the difficulties confronting farmers growing crops under irrigation, of the importance of water in the semiarid and arid regions of the West, of the urgent need of better methods of measurement and distribution of irrigation water, of improved methods of irrigation, and the value of storage and of conservation of our water resources.¹¹

Despite his agricultural background and an apparent aptitude for irrigation work, Charles Lory's professional ambitions lay beyond the farm. In 1894 he enrolled at the State Normal in Greeley for the purpose of becoming a teacher. Completing his pedagogical program in 1898, he entered the University of Colorado, and after earning bachelor's and master's degrees in science and engineering, launched his professional career as a high school principal at Cripple Creek, Colorado, a turbulent gold mining community. From there, he accepted a brief teaching assignment at the University of Colorado, then in 1905 took charge of work in physics at the State Agricultural College, Colorado's Morrill-Act institution.¹²

Lory's arrival at Fort Collins coincided with a divisive yet significant struggle over the school's institutional purpose. One faction, backed by the state's stockmen, advocated a "narrow-gauge" educational philosophy, insisting that the college's primary mission entailed vocational instruction in agriculture. The opposing "broad gauge" side contended that applied knowledge required a foundation of basic principles and underlying theories and that courses of study should encompass fields besides agriculture. Leader of the latter position was Louis G. Carpenter, head of the school's civil and irrigation program, director of the Agricultural Experiment Station and

Colorado state engineer from 1902 to 1908.¹³

Carpenter's involvement in this conflict reflected not only his own convictions, but a long-standing commitment of the college to irrigation work pioneered by Elwood G. Mead. Mead had joined the faculty of Colorado's State Agriculture College in 1883 and subsequently established the first course of study in irrigation engineering to be offered at an American academic institution. Although he left Fort Collins in 1888 and achieved international renown for work related to irrigation and reclamation, his impact remained--in the school's emergence as something more than a "cow college" and in Mead's continuing interest in the people and problems of Colorado.¹⁴

Charles Lory, who sided with the ultimately victorious "broad gauge" position, was directly influenced by this interest when in 1907 Mead invited him to accept a summer appointment with the U.S. Department of Agriculture's Division of Irrigation and Drainage Investigations. Mead had headed this agency since its creation in 1889 and direct it mainly to problems related to the management of irrigation activity.¹⁵ Throughout late nineteenth-century western America, the status of so-called water rights under the doctrine of prior appropriation remained patently ambiguous. As Elwood Mead's principal assistant Ray P. Teel observed, "In almost no case were the decrees based on any exact knowledge of the capacities of ditches, the quantities actually diverted, or the needs of the lands served." The Division of Irrigation and Drainage Investigations, therefore, sought to conduct a scientific evaluation of laws governing water rights, practices affecting water distribution, and the actual water requirements for efficient agricultural production. Its ultimate goal was to inspire a more equitable and less wasteful utilization of the West's water resources.¹⁶

Charles Lory's role in this enterprise involved compiling information pertaining to water

use in the Big Horn Basin area of north central Wyoming. There, he met innumerable farmers, observed the crops they planted, and offered advice on how best to apply water to their fields. He studied the rules and financial arrangements that characterized operations of canal companies. He also examined local methods for measuring water and evaluated the impact of government-sponsored reclamation projects.¹⁷ Lory was assisted in the Wyoming work by Mead's son, Tom. It was perhaps this association, as well as common professional interests, that fostered a sense of mutual esteem between Lory and the elder Mead. Shortly after arriving in Australia to assume his position as chairman of the State Rivers and Water Supply Commission in 1907, Elwood Mead wrote to Lory describing the new position and expressing a high regard for the younger man's potential.

As you know, I am the Professor of Irrigation Institutions and Practice in the University of California. The last mail brought a request from the President that I would write him about my successor. I have written, that among the men whom I have reason to believe would be available I would place you first; partly because of what you already know and partly because you are young and have capacity for growth. I do not know that anything will come of this, and you will understand that the information I am giving you is confidential as I have been asked to recommend other men for the position.

In addition, Mead endorsed Lory for the office of Wyoming State Engineer.¹⁸ The two men continued regular contact through the years and would eventually collaborate on one of the most important reclamation endeavors to affect the Rocky Mountain West, the Colorado-Big Thompson Project.¹⁹

Influential patronage and invaluable practical experience might have moved Charles Lory's career fundamentally in the direction of irrigation engineering. In 1909, however, an opportunity arose that proved irresistible--the presidency of the State Agricultural College. The protracted struggle over institutional purpose had been resolved in favor of the "broad gauge" philosophy, but an aftermath of ill will lingered. Highly unflattering publicity, a divided faculty, and dissatisfaction among the college's traditional supporters indicated an urgent need for strong

yet conciliatory leadership.

Charles Lory seemed singularly equipped to meet this challenge. Although definitely identified with the "broad gauge" position, he had managed to take his stand without offending anyone. His success in this regard undoubtedly stemmed from distinctive personal qualities. Although kind and modest, Lory possessed an inherent toughness and determination to excel. Moreover, as a former homesteader and ditch rider he had tangibly experienced hardships of the nonacademic world. Charles Lory knew Colorado, cared about it, and could speak the language of its people. "It is an old but true saying," he once asserted, "that there is as much culture in a beet root as in a Greek root." Although he believed that the college should provide a broad range of programs built upon a foundation of fundamental scientific training, his advocacy was tempered by a shrewd understanding of rural prejudices. In his opinion, the school's primary mission should involve the creation and transmission of useful knowledge.²⁰

Charles Lory possessed an astute political sense and knew how to mobilize support for his programs. "My father seemed to know everyone," observed his son Earl.²¹ He traveled constantly, renewing old contacts and establishing new ones. In Colorado he organized a presidents' association to provide the state-supported institutions of higher learning with a united front in dealing with the legislature and for many years served on the Executive Committee of the Association of Land Grant Colleges and Universities, which lobbied effectively on behalf of Morrill-Act education. This position, and other college-related business, necessitated frequent trips to Washington. When visiting the nation's capital, he habitually made the effort to call on politicians and influential federal administrators. A February 15, 1937, excerpt from his diary is both illuminating and representative in this regard:

Had breakfast with Dir. Creel. Together we called on Congressman Cummings. I then called on Congressman Taylor and Senators Adams and Johnson. Heard part of the Investigation of General Motors by Sen. La Follette and Sen. Thomas and committee. Saw Col. Clark, PWA, on Ft. Lewis Library. Called on Asst. Secy. Chapman. Found Dir.

Page out of town.²²

Throughout his thirty-one year tenure as president of Colorado's land grant college, Charles Lory remained actively concerned about water, its availability and use. In part, this involvement was mandated by the school's obligation to assist agriculturalists in coping with a semi-arid environment. Of equal importance, however, was Lory's own interest in the subject and appreciation of its importance. His family continued to operate the farm south of Windsor where irrigation water represented the difference between success or failure--a situation shared by most Colorado farmers. The challenge of providing sufficient water and using it with maximal efficiency held a singular fascination for him. It was, perhaps, his principal avocation.²³

Consequently, while president, Lory supported a strong instructional program in irrigation engineering which, under the direction of Professor Edward House, retained the reputation for quality established by Elwood Mead and Louis G. Carpenter.²⁴ He also lent enthusiastic backing to research- This was especially evident in cooperative projects involving the college's Agricultural Experiment Station and various federal agencies, such as the Bureau of Reclamation, the Bureau of Public Roads, and the Division of Irrigation Investigations. Beneficial information related to measuring, pumping, using, and storing irrigation water resulted from this work, in addition to independent research conducted by college personnel.²⁵

Among the engineers assigned to Fort Collins by the Department of Agriculture was Ralph L. Parshall. A graduate of the State Agricultural College and a member of its faculty from 1904 to 1913, Parshall was a man of remarkable inventive genius. In 1912 he helped to design and construct a hydraulics laboratory that became a vital facility for experimental work. More than a decade later, after considerable trial and error, he developed a water flow measuring device, the Parshall flume, which subsequently became a standard

instrument for irrigation engineers throughout the world. He also designed a series of devices for keeping irrigation canals free of sand, participated in pioneering mountain snow surveys to forecast the availability of irrigation water, and assisted in planning engineering aspects of the Colorado-Big Thompson Project. Over the years, Lory and Parshall developed a close personal and professional relationship, and the president derived considerable vicarious satisfaction from his friend's achievements.²⁶

Lory consistently devoted himself to projects involving irrigation. After World War I he was among the first to advocate construction of a coordinated system of storage reservoirs along the Cache la Poudre River.²⁷ He also took a leading role in a campaign to supplement northern Colorado's supply by diverting water from the Laramie River in Wyoming. This effort was essentially negated, however, when the U.S. Supreme Court upheld Wyoming's "prior appropriation" even though the river flowed through both states and much of its water emanated in Colorado.²⁸ A later attempt, this time to divert water from the North Platte River in Wyoming, proved equally frustrating to Lory and other Coloradans. For many years Colorado had tried to negotiate an interstate compact regarding the use of this water, but in 1933 Congress authorized construction of the Casper-Alcova Reclamation Project, which effectively sanctioned Wyoming's prior claim by providing the means for "beneficial use."²⁹

These setbacks troubled Lory and other advocates of water diversion for northern Colorado. By 1933 the effects of the Great Depression and a prolonged drought had become serious problems. Additional water was urgently needed, yet the courts and Congress had essentially precluded the possibility of obtaining new supplies from Wyoming. An obvious question presented itself: if not from Wyoming, then where might water be found?

For many years the idea of bringing water from Grand Lake and the Colorado River to the

Eastern Slope had attracted considerable interest. During the 1880s the State Engineer's Office had explored the possibility, and in 1905 students at the State Agricultural College under the direction of Louis G. Carpenter had begun highly promising feasibility studies. When Rocky Mountain National Park was established in 1915, Governor Elias M. Ammons and irrigation leaders in Larimer and Weld counties managed the inclusion of a proviso permitting the United States Reclamation Service to develop irrigation projects on park lands. Lory became directly involved four years later when he recommended to the Colorado State Board of Agriculture that the college "make a study of the water supplies on the upper Colorado and the possibility of diverting such water to the Eastern Slope."³⁰

A truly significant impetus for promoting this concept, however, was the Colorado River Compact of 1922. The agreement provided for an equal division of the river's waters between four upper basin and three lower basin states, with an unspecified amount to be reserved for Mexico. Future appropriations would be strongly influenced by the use made of existing allotments. Thus, a substantial transmountain diversion project, confirming Colorado's prior rights, offered both immediate and long-term benefits. Charles Lory assessed the situation bluntly: if Colorado failed to act, some other state most certainly would.³¹

On August 17, 1933, Charles Lory was invited to join other irrigation leaders at a meeting in Greeley, Colorado, to organize support for a "Grand Lake Project." The objective was a major enterprise to divert water from the Colorado River to northern Colorado--a concept that he had long favored. At the meeting Lory was among those who spoke on behalf of the project, and local money was raised quickly to undertake a preliminary feasibility study.³²

Behind this activity lay the hope that the federal government would recognize the project's merits and underwrite the major planning and construction costs. New Deal programs for combating the depression included the field of reclamation; therefore, it seemed reasonable to assume that Colorado might qualify for a share of the largess.³³ Appeals to public opinion and persuasive political lobbying thus assumed vital importance in the "Grand Lake Project" campaign, and in both respects Charles Lory made notable contributions.

Following the August 17 meeting at Greeley, a locally funded feasibility study was conducted, in cooperation with the office of the Colorado State Engineer. The results proved to be highly encouraging for it was deemed practical to divert water by tunnel through the Continental Divide and "distribute it through existing irrigation systems." Moreover, income derived from the sale of irrigation water and resulting hydroelectric power would apparently justify federal financial investment in the project.³⁴

In February 1934 Moses E. Smith, representing northern Colorado irrigationists, traveled to Washington to discuss the matter with Bureau of Reclamation Commissioner Elwood Mead. Several months later Mead visited Denver and met with promoters of the diversion project. Among this group was Charles Lory who provided the commissioner with a thorough explanation of the proposed undertaking. Shortly thereafter, Mead went on record as favoring the project and eventually became an enthusiastic supporter. William R. Kelly, a leader of northern Colorado irrigation interests, believes that Lory's influence did much to ensure Mead's active involvement.³⁵

The next major step involved obtaining a \$150,000 Works Progress Administration Grant to support a detailed survey of the project. Members of Colorado's congressional delegation, particularly Senator Alva Adams and Lory's close friend, Representative Fred Cummings, worked diligently to secure this appropriation. In January 1935 Cummings arranged a conference in Washington between Lory and Secretary of the Interior Harold L. Ickes. The secretary, who was developing a positive interest in reclamation work and administering funds being sought for the survey, greeted Lory cordially and, after some discussions, assured him that the money would be provided.³⁶

After returning to Colorado Lory prepared and submitted, in the name of the State Agricultural College, a formal application for the desired W.P.A. grant. This was a difficult process, requiring frequent consultations with interested irrigationists, local politicians, and engineers such as Ralph Parshall. In Lory's opinion, however, the objective was well worth the effort. Months later, upon learning that the funds had been made available, he declared: "I look

upon this as the most important and promising of our W.P.A. projects.”³⁷

As the campaign for diverting Colorado River waters moved forward, President Lory found himself assuming additional responsibilities. With increasing frequency he began speaking before civic and agricultural groups, such as the Boulder Rotary Club and the Weld County Farmers Institute, in an effort to elicit popular backing for the project.³⁸ In February 1935 he was called upon to serve on the Board of Directors of the Northern Colorado Water Users Association, an incorporated entity composed of representatives from numerous irrigation organizations. Empowered to issue stock and led by the most prominent irrigationists in northern Colorado, the Association possessed the unity and resources to conduct a prolonged promotional effort.³⁹

This capability was definitely required as serious opposition had begun to develop, threatening the success of the water diversion plan. Two issues dominated: the concern of Western Slope residents that the project would jeopardize their water rights and the fear by conservationists that the projected reclamation activity would adversely affect the national park system?⁴⁰ Lory became actively involved in each of these controversies.

The first was perhaps the most difficult because of the political power wielded by Congressman Edward T. Taylor of Glenwood Springs. As chairman of the House Appropriations Committee, Taylor could sidetrack legislation authorizing funds for the project and from the outset insisted that for each foot of water diverted to the Eastern Slope, a like amount be guaranteed to the West.⁴¹

Less than three weeks after the formation of the Northern Colorado Water Users Association, Lory left Fort Collins for a meeting of factious irrigation groups at Grand Junction. His trip aboard the Denver and Rio Grande Railroad under the Continental Divide took him through the recently completed Moffat Tunnel. However, a snow slide east of Hot Sulphur Springs blocked the train, nullifying an anticipated shortcut. As subsequent events demonstrated, this was a sign of things to come.⁴²

On the opening day of the conference President Lory delivered a long and earnest address

reviewing the history of irrigation development in Colorado, noting the legal battles waged with other states over the use of water, and stressing the importance of a united front in this time of economic uncertainty.⁴³ Later he met with individual leaders of the Western Slope faction, such as D. W. Aupperle, president of the Western Slope Protective Association. These efforts were unavailing, and more than a year passed before the conflict was resolved--by an agreement to construct a special storage reservoir for the exclusive use of Western Slope residents.⁴⁴ Shortcuts had been impossible, but once an accord was reached the two regions closed ranks behind the diversion project. Lory, who had participated in many months of frustrating negotiations, was among the first to emphasize the importance of this harmony. Impediments to the success of the project remained, and he definitely sensed that the cooperation of all Coloradans would be needed to overcome them.⁴⁵

This assumption definitely applied to the opposition mounted by the National Park Service and various conservation groups, such as the Wilderness Society, the National Parks Association, and the American Forestry Association.⁴⁶ Plans concerning the diversion of Colorado River water to the Eastern Slope called for the construction of a tunnel that would pass under the grounds of Rocky Mountain National Park. Critics argued that the project would establish a precedent that might encourage subsequent exploitation of America's parks; that tunnel construction would adversely affect the natural landscape and that alternate routes outside of park boundaries might be used instead.⁴⁷ Charles Lory was well acquainted with many prominent foresters and conservationists by virtue of the significant forestry program developed at the college during his presidency.⁴⁸ As a result, he became actively involved in trying to justify the Colorado-Big Thompson Project to these individuals and was, perhaps, the leading spokesman for the Colorado Water Users Association in this respect.

On April 15, 1935, the Association hosted a meeting attended by Edmund B. Rogers, superintendent of Rocky Mountain National Park, and James Harvey, president of the Colorado Mountain Climbers Club and a 1924 graduate of the college. Lory presented the case for the

irrigationists. He described northern Colorado's desperate need for Colorado River water, emphasizing that without this resource further development of the region would be impossible and that existing development would be endangered. He also explained in detail that the "progress" resulting from the water would not "mar the scenery of the National Park." Rogers heard Lory out, but would not commit himself to supporting the project.⁴⁹

For more than two years this problem regularly commanded Lory's attention. It was a continuing matter of discussion before the Water Users Association, and on occasion Lory prepared formal statements for the edification of conservationists, such as George H. Collingwood and Herman H. Chapman.⁵⁰ When former National Park Service Director Horace M. Albright issued a lengthy statement in the July 11, 1937, edition of the New York Times condemning the project, Congressman Cummings called upon Lory to supply information for refuting the forester's criticisms.⁵¹

The culmination of this effort occurred on November 12, 1937, at the Department of the Interior Building in Washington, D.C. This was the showdown: a final opportunity for each side to present its case before Secretary Ickes. Those appearing on behalf of the project included President Lory, Reclamation Commissioner John Page, and virtually the entire Colorado congressional delegation. Although Senator Alva Adams and Congressman Edward Taylor did most of the speaking, Lory, representing northern Colorado irrigationists, was also called upon to make a presentation. Project opponents were led by National Park Service Director Arno Cammerer.

Despite a personal dislike for Cammerer, whom he once criticized for sitting "by my desk vigorously chewing gum in an openmouthed manner," Secretary Ickes opposed in principle project construction on park lands. Nevertheless, proponents of the project prevailed. Lory observed that "Secretary Ickes presided to 1 P.M. Before leaving he stated /that/ those opposed had not helped him, that he had to obey the law."⁵² A \$900,000 appropriation was thereby released, and construction on the Colorado Big Thompson Project could begin.⁵³

Besides promoting the idea of a Colorado River diversion and combating resistance to it, Charles Lory was also instrumental in establishing the Northern Colorado Water Conservancy District. This unprecedented legal entity, charged with administering the irrigation aspects of the Colorado-Big Thompson Project came into being only after much hard work and careful preparation. Because the concept was new to the state and had to be explained with great care, Lory discussed it in frequent public lectures. He conferred regularly with state politicians, such as Moses Smith, James R. Miller, and Governor Teller Ammons, providing basic information and refining the bill that ultimately became the Colorado Water Conservancy Act of 1937. In addition, he helped to plan an essential petition drive and define the specific functions of the proposed district's governing board.⁵⁴

Charles Lory's contributions on behalf of irrigation were significant and his work did not go unnoticed. In November 1937 he was invited by Secretary of the Interior Ickes to chair a special three-man Repayment Commission for the purpose of rectifying problems related to the financing of federally supported reclamation projects.⁵⁵ The Reclamation Service had been created by Congress in 1902 with the assumption that reclamation projects would be funded by the sale of public lands and that project beneficiaries would repay all costs within a period of ten years. Almost immediately, however, practical considerations altered these arrangements. Inadequate revenue from land sales necessitated congressional supplements to the reclamation fund. Furthermore, persons using water from federal reclamation projects tended to default on their payments. During the first years of settlement on newly irrigated land, farmers usually struggled to get a crop planted and meet current expenses with the result that reclamation debts seemed intolerable. Hard pressed irrigators appealed to their political representatives for relief and eventually repayment terms were liberalized. Unfortunately, the post World War I era brought a serious agricultural recession and again defaulting became rampant, much to the detriment of the Bureau of Reclamation's reputation. In 1924 Elwood Mead, the new commissioner of Reclamation, acting upon the recommendations of his famous Fact Finders Committee, made several admirable efforts to set matters right. Before a lasting remedy could be

devised, however, Mead's reforms were engulfed by the overwhelming tide of the Great Depression. Desperate demands for congressional moratoriums or "leniency acts" resumed.

New Deal programs to combat the depression through federally funded economic activity benefited the Bureau of Reclamation. Increasingly, projects were financed by general appropriations instead of the Reclamation Fund. Moreover, as evidenced by the Boulder Canyon Project, revenues stemming from the sale of hydroelectric power held out the promise of fiscal viability. Nevertheless, recent lessons could not be ignored, and sentiment began to build, particularly within the Bureau of Reclamation under Mead's successor John Page, to establish a workable repayment plan.⁵⁶

Charles Lory was well acquainted with John Page, had met with Secretary Ickes on several occasions and by virtue of his role in planning the Colorado-Big Thompson Project, had a demonstrated interest in the repayment question. Besides Lory, the Repayment Commission had two other members: George T. Cochran, an attorney and state water superintendent of Oregon; and William R. Wallace, former chairman of the Utah Water Storage Commission.⁵⁷ This group's assignment had been specifically defined by Congress and presented several difficult challenges. First, the commission was directed to investigate a vast array of federal and Indian reclamation projects, with particular regard to the ability of each to meet its contracted Water payment obligations. On the basis of this investigation, it was to recommend to Congress a permanent comprehensive and practical plan guaranteeing the orderly satisfaction of water-right payments without unduly burdening the water users. In addition, if in the course of its study the commission should find a specific project, because of uncontrollable adverse circumstances, unable to pay debts due for the year 1937, an extension might be recommended.⁵⁸

A meeting to organize the commission was held in Denver on November 30, 1937, and an itinerary immediately agreed upon. The commissioners faced a formidable schedule, one that would ultimately involve more than 10,500 miles of automobile travel in a V8 Ford within a 57-day period. Between December 1, 1937, and January 26, 1938, Lory and his group visited fifteen western states, conducted 72 formal hearings, and participated in 30 special conferences.

The commission set out for Wyoming on December 1, and after two days of hearings and conferences proceeded to Nebraska and South Dakota. Lory's impressions of these first days are notable because they typify what the commission would repeatedly experience in the coming weeks:

Met with Gering-Ft. Laramie Division of North Platte Project at 10am. This Board through Mr. Mathes made a strong plea for change in repayment plan, favoring the "National Reclamation" Plan. Met with North Port Board after noon and later with Board of Bridgeport District. At 3pm started for drive over lands of North Port and Bridgeport Districts. Parts of the former a veritable "Dust Bowl." A mighty discouraging if not hopeless outlook. Unable to see as much of the latter as we wished, Sec'y Scott of the Board and Mr. Wolla [?] a member brought us back to Scotts Bluff.⁵⁹

Lory left the other commissioners and returned home by way of Wyoming, arriving at 4:20 a.m. on December 6. After devoting several days to college business, he departed for Great Falls, Montana, experiencing hazardous driving in heavy snows. Visits to Washington, Oregon, Idaho, and Utah followed.⁶⁰

From December 24-27, Lory and his companions went their separate ways for a Christmas holiday recess. Hearings resumed on December 28 in Utah, and the following day the commission found itself in Nevada where they received a tour of the Boulder Canyon Project. Lory's thoughts on this occasion are revealing:

Called at headquarters at Boulder City and met Construction Engineer Lowry who took us for a boat ride on Lake Mead and a tour over the Dam and through the power house. It is not given one often to see as much of Mountain Glory and of Man's achievement in one day.⁶¹

The group then traveled to Los Angeles, devoted a day to conferences, and adjourned business to celebrate the arrival of the new year. Lory, who had prearranged reserved tickets through University of California President Robert Sprout, did this in fine style by attending the Rose Bowl and witnessing California's 13 to 0 triumph over the University of Alabama.⁶²

A brief respite was certainly warranted because the next twenty-four days featured an uninterrupted itinerary of travel and work. Throughout this period the commission attended a

seemingly endless series of hearings and conferences in California, Oregon, Arizona, Texas, New Mexico, Utah, and, finally, western Colorado. On January 26 the party departed from Gunnison on snowy roads, crossed the suspension bridge over the Royal Gorge, and had lunch at Canon City. Late that afternoon they arrived in Denver, and with some regret turned in "No. 1330," the V8 Ford that had served them so well. The field work was finished; the preparation of the commission's findings could now begin.⁶³

This task proved to be an arduous one. First, the commission had to decide which projects should be granted relief from construction charges falling due in 1937. As might be expected, each group of applicants viewed its own problems as the most pressing, and some lobbied during this time to persuade the commissioners accordingly. Lory and his colleagues struggled to be fair, weighing the often-contradictory considerations of compassion and fiscal responsibility. Finally, the water users of ten projects were granted some relief, a number that could not satisfy everyone.⁶⁴

Next, the commission proceeded to analyze vast quantities of information--gleaned from innumerable hearings, conferences, reports, and questionnaires--for the purpose of presenting an official summary of its findings and making recommendations regarding the financing of federal reclamation projects. Lory, who assumed primary responsibility for drafting the report, moved to Denver for this phase of his assignment. Brief visits to the college, occasional meetings concerning the Colorado-Big Thompson Project, and one trip to Washington where he discussed the report with Commissioner Page and several congressmen, were his only interruptions from the business at hand. By early April the report was completed, although related obligations continued to occupy him from time to time for the next several months.⁶⁵

The findings of the Repayment Commission ultimately held considerable significance for federally supported reclamation activity in the United States. A thorough review of previous efforts to finance Reclamation projects was provided, with emphasis given to why these

approaches had not succeeded.⁶⁶ In compliance with its principal mission of presenting to Congress a permanent, workable new plan, the commission offered recommendations that reflected an astute understanding of the complexities involved. Each reclamation project had its own peculiarities and problems, and often so did individual irrigators sharing water from the same project. Moreover, these circumstances were themselves dynamic--subject to such vagaries as weather, soil conditions, insect infestations, plant and animal diseases, farming production costs, and the market demand for agricultural commodities.⁶⁷ In order for a plan to succeed permanently, it had to have sufficient flexibility to accommodate a wide variety of circumstances undergoing continuous change.

This philosophy and many specific details of the commission's report provided the basis for the Reclamation Project Act of 1939. The new law established a reasonable but definite length of time for the repayment of construction costs. Annual installments would be spread out over a forty-year period, but could be deferred until completion of a ten-year "development period" In effect, water users now had up to fifty years to satisfy their obligations. Of even greater importance was a provision tying the amount paid in installments to a percentage of the irrigator's annual agricultural income. These percentages were variable reflecting the productivity of different classifications of land and agricultural conditions in general. Furthermore, the act required the Department of Interior to undertake periodic reclassifications of lands at the request of a project's water users' association--a measure designed to accommodate changes wrought by altered environmental conditions.⁶⁸

Charles Lory's work as chairman of the Repayment Commission led directly to the enactment of the Reclamation Project of 1939, a measure instrumental in providing reclamation project financing with a remarkable degree of stability. As William Warne has observed, "since the 1939 Act and the adjustments that were made under it, there have been no defaults on the part of water-users."⁶⁹

Soon after completing this assignment, Charles Lory notified the State Board of Agriculture of his intention to retire as president of Colorado's Morrill-Act college. He did so following the 1939-40 academic year, completing three-and-a-half decades of service to the school. At the age of sixty-eight he might have taken satisfaction in his numerous accomplishments and withdrawn from public life. But this did not happen.

From 1940-1944 he served on the National Resources Planning Board, formed to make long range plans regarding America's agricultural resources. He also Contributed notably to the Colorado Selective Service Appeals Board, the State Merit System Council, and the Governor's Irrigation Centennial Committee.⁷⁰ Most notable, though, was his work as a member of the Northern Colorado Water Conservancy District governing board. He assumed this position in October 1940 and retained it for fourteen years. In this capacity he influenced decisions involving the construction and administration of the Colorado-Big Thompson Project. He emphatically defended agreements negotiated with Western Slope water users during the 1930s and insisted on adequate safety standards with respect to reservoir dams.⁷¹

On July 1, 1951, Charles Lory was among those who participated in the dedication of Horsetooth Reservoir, the last link in a network of tunnels, canals, and water storage facilities making up the Colorado-Big Thompson Project In an address that he delivered on that occasion he spoke of the dream that he had long held--the dream of bringing additional, desperately needed irrigation water to northern Colorado. For Lory there could be no more vivid manifestation of progress.⁷² For Lory, this reservoir embodied the ultimate response to the challenges of Colorado's semi-arid frontier.

ENDNOTES

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- ¹ "Lory State Park" folder, Regional Office of the Colorado Division of Parks and Outdoor Recreation, Fort Collins, Colorado; copy of selected materials on file in Charles A. Lory Collection, Colorado State University Archives (hereafter cited as Lory Collection and CSU Archives).
- ² James E. Hansen II, Democracy's College in the Centennial State: A History of Colorado State University (Fort Collins' Colorado State University), pp. 188-190; Earl C. Lory, interview by author, May 15, 1978, Lory Collection, CSU Archives.
- ³ Charles A. Lory, Diary, entry for May 11, 1936, Lory Collection (hereafter cited as Lory Diary, with appropriate dates).
- ⁴ John and Halka Chronic, Prairie, Peak and Plateau' A Guide to the Geology of Colorado. (Denver: Colorado Geological Survey, 1972), passim.
- ⁵ Earl C. Lory, interview. Windsor, Colorado, is located ten miles northwest of the confluence of the South Platte and Cache la Poudre rivers.
- ⁶ Carl Ubbelohde, Maxine Benson and Duane A. Smith, A Colorado History Boulder-Pruitt Publishing Company, 1976), pp. 188-89; Hansen, Democracy's College, p.65.
- ⁷ Robert G. Dunbar, "The Origins of the Colorado System of Water-Right Control," The Colorado Magazine, XXVII (October 1950), pp. 241-262; Ibid., "The Significance of the Colorado Agricultural Frontier," Agricultural History, XXXIV (July 1960), pp.119-125; Ward H. Fischer and Stephen B. Ray, A Guide to Colorado Water Law (Fort Collins' Colorado Water Resources Institute, 1978), passim; G. E. Radosevich et al Evolution and Administration of Colorado Water Law' 1876-1976 (Fort Collins' Water Resources Publications, 1976), passim.
- ⁸ John E. Field, Irrigation from Big Thompson River, U. S. Department of Agriculture, Office of Experiment Stations--Bulletin No. 118 (Washington' Government Printing Office, 1902)' "Statement of Claim for Oklahoma Lake," n. d., in "Big Cut Lateral and Reservoir Co. 1943-46" folder, Lory Collection; Untitled and undated reminiscence of Charles A. Lory re: experiences as a ditch rider, Ibid. (hereafter cited as Lory Reminiscence); Fifth Biennial Report of the State Engineer to the Governor of Colorado for the Years 1889 and 1890 (Denver: The Collier & Cleaveland Lith. Co., Printers, 1891, p. 91.
- ⁹ Lory Reminiscence; Earl C. Lory, interview; Lory Diary, March 11, April 16, 1940.
- ¹⁰ Charles A. Lory, "My Experiences as a Ditch Rider," Reclamation Era, XXXIII (July 1947), p. 159; Lory Reminiscence. The Hillsboro Canal is located just south of the confluence of the South Platte and Big Thompson rivers.
- ¹¹ Lory, "My Experiences as a Ditch Rider," p. 168.
- ¹² Hansen, Democracy's College, pp. 3-8, 190-191.
- ¹³ Ibid., pp. 8, 159-181. The terms "broad-gauge" and "narrow gauge" are derived from Earle D. Ross's seminal study, Democracy's College - The Land Grant Movement in the Formative Stage (Ames' The Iowa State College Press, 1942), pp. 86-89.
- ¹⁴ His career after leaving the State Agricultural College included- territorial and state engineer of Wyoming, 1888-98; chief of irrigation and drainage investigations, U. S. Department of Agriculture, 1898-1907; professor of institutions and practice of irrigation, University of

California, 1898-1907; chairman, State Rivers and Water Supply Commission, Victoria, Australia, 1907-15; professor of rural institutions, University of California, 1915-23; chairman, Land Settlement Board of California, 1917-23; commissioner, United States Bureau of Reclamation; 1924-36; Hansen, Democracy's College, pp. 64, 67-72; James Robert Kluger, "Elwood Mead Irrigation Engineer and Social Pioneer," (Ph.D. Diss., University of Arizona, 1970).

¹⁵ R. P. Teel, "Review of Ten Years of Irrigation Investigations," U. S. Department of Agriculture, Annual Report of the Office of Experiment Stations for the Year Ended June 30, 1908 (Washington: Government Printing Office, 1909), pp. 355-357.

¹⁶ *Ibid.*, passim. With regard to legal arrangements, the Division was definitely biased in favor of the system devised by Elwood Mead for Wyoming during his tenure as that state's engineer (see p. 360). For background on the development of water law in the United States under the Doctrine of Prior Appropriation see Wells A. Hutchins, "Background and Modern Development in Water Law in the United States," Natural Resources Journal, II (December 1962), pp. 416-441. For background on the Division see Lawrence B. Lee, "100 Years of Reclamation Historiography," Pacific Historical Review, XLVII (November 1978), p. 526, n. 51.

¹⁷ "Memorandum for Charles A. Lory [sic] in Duty of Water Investigations in the Big Horn Basin," July 1907, Lory Collection. A fuller and more accurate picture of Lory's activity would perhaps be revealed by an investigation of Division of Irrigation and Drainage investigations records on file at the National Archives. It is known that he submitted reports on his work, but no copies survive in his papers. Although Lory's findings were never published, they may have been incorporated into Clarence T. Johnson's Irrigation in Wyoming, U. S. Department of Agriculture, Office of Experiment Stations--Bulletin 2-05 (Washington: Government Printing Office, 1909).

¹⁸ Elwood Mead to Charles A. Lory, May 27, 1908; see also Elwood Mead to Charles A. Lory, June 21, 1907; Tom Mead to Charles A. Lory, August 29, October 1, 1907; all in Lory Collection.

¹⁹ Elwood Mead to Charles A. Lory, November 22, 1909; Lory Diary, January 20, 27, 1936.

²⁰ Hansen, Democracy's College, pp. 188-192.

²¹ Earl C. Lory, interview.

²² Lory Diary, February 15, 1937.

²³ Earl C. Lory, interview; Charles A. Lory, "Colorado-Big Thompson Project Statement, Prepared for District Court Hearing, April 23, 1953," Lory Collection.

²⁴ Hansen, Democracy's College, pp. 224-227.

²⁵ Faye J. Anderson, "History Department of Civil Engineering, Colorado State University," typescript, 1970, Civil Engineering Department Collection, CSU Archives; Lory, "Colorado-Big Thompson Project Statement." For a partial listing of publications emanating from this work see Betty L. Hacker and Donald E. Oehlerts (comps.), Index to the Publications of the Colorado Agricultural Experiment Station 1887-1965, Bulletin 527-S (Fort Collins' Colorado Agricultural Experiment Station, 1966. See also reports of the Irrigation Investigations Section in the Annual Report of the Colorado Agricultural Experiment Station (Fort Collins: Colorado Agricultural Experiment Station, 1911-1940), passim.

²⁶ Hansen, Democracy's College, pp. 226-227; "Parshall, Ralph Leroy," National Cyclopaedia of American Biography, XLIX (1966), pp. 86-87; Earl C. Lory, interview.

²⁷ Lory, "Colorado Big Thompson Project Statement"; Greeley Sunday Journal, June 18 1967 (This is a lengthy reminiscence about Lory by his friend William R. Kelly, a noted Colorado water lawyer).

²⁸ Lory, "Colorado-Big Thompson Project Statement." This case, Wyoming v. Colorado, was significant in the history of American water law; see M. Paul Holsinger, "Wyoming v. Colorado Revisited' The United States Supreme Court and the Laramie River Controversy," Annals of Wyoming, XLII (April 1970), pp. 47-56; Norris Hundley, Jr., Water and the West: The Colorado River Compact and the Politics of Water in the American West Berkeley' University of California Press, 1975), pp. 76-78, 177-180.

²⁹ Lory, "Colorado-Big Thompson Project Statement"; Fred N. Norcross, "Genesis of the Colorado-Big Thompson Project," The Colorado Magazine, XXX (January 1953), pp. 29-30; Rocky Mountain News, July 29, 1933, p. 1.

³⁰ Lory, "Colorado-Big Thompson Project Statement"; J. M. Dille, A Brief History of the Northern Colorado Water Conservancy District and the Colorado-Big Thompson Project (Loveland: The Northern Colorado Water Conservancy District, 1958), pp. 10-11; Norcross, "Genesis of the Colorado Big Thompson Project," p.30.

³¹ Lory, "Colorado-Big Thompson Project Statement"; Grand Junction Daily Sentinel, February 26, 1936, p. 1; Donald Bernard Cole, "Transmountain Water Diversion in Colorado," The Colorado Magazine, XXV (March, May, 1948), p. 61; Hundley, Water and the West, *passim*.

³² Lory, "Colorado-Big Thompson Project Statement"; William R. Kelly, "Colorado-Big Thompson Initiation, 1933-1938," The Colorado Magazine, XXXIV (January 1957), pp. 66-67.

³³ Norcross, "Genesis of the Colorado Big Thompson Project," p. 33; Cole, "Transmountain Water Diversion in Colorado," p. 61.

³⁴ Oliver Knight, "Correcting Nature's Error' The Colorado-Big Thompson Project," Agricultural History, XXX (October 1956), p. 158.

³⁵ Kelly, "The Colorado Big Thompson Initiation," p.68; Greeley Tribune, June 9, 1934, p.1.

³⁶ Lory Diary, January 31, 1935; Donald C. Swain, "The Bureau of Reclamation and the New Deal, 1933-1940," Pacific Northwest Quarterly, LXI (July 1970), pp. 138-139.

³⁷ Lory Diary, September 7-13, October 18, 28, November 5-6, 1935.

³⁸ *Ibid.*, February 7, December 3, 1935, January 4, March 3, April 17, 1936; Kelly, "Colorado-Big Thompson Initiation," p. 67.

³⁹ Minutes of the Board of Directors of the Northern Colorado Water Users Association, February 9, 1935, Northern Colorado Water Conservancy District Office, Loveland, Colorado (hereafter cited as Minutes, NCWUA, with appropriate dates). For nearly a year preceding the formation of the NCWUA, project business was directed by a temporary Water Users Committee, of which Lory was a member; Dille, A~ History of the Northern Colorado Water Conservancy District, p. 12.

⁴⁰ Less important issues included' complaints from states, such as Oklahoma, which argued that Colorado was getting a disproportionate share of federal reclamation benefits; and concern over whether project water users would be able to meet their financial obligations. Neither of these

objections could be convincingly substantiated, however. See Cole, "Transmountain Water Diversion in Colorado," pp. 62-64.

⁴¹ Dille, A Brief History of the Northern Colorado Water Conservancy District, p. 13; Knight, "Correcting Nature's Error," p. 160.

⁴² Lory Diary, February 26, 1936.

⁴³ Grand Junction Daily Sentinel, February 28, 1936, p. 1.

⁴⁴ Lory Diary, February 27, 1936; Dille, A Brief History of the Northern Colorado Water Conservancy District, pp. 13-15.

⁴⁵ Fort Collins Express-Courier, September 26, 1937, p. 43 (This is a lengthy history of "The Grand Lake Diversion Project" written by Charles A. Lory).

⁴⁶ Knight, "Correcting Nature's Error," p. 161.

⁴⁷ Cole, "Transmountain Water Diversion in Colorado," pp. 62-63; "Irrigation Project Threatens Colorado," Nature Magazine, III (August 1937), pp. 109-110.

⁴⁸ In 1916, soon after Congress enacted legislation creating the National Park Service, the head of the college's Forestry Department, Walter J. Morrill, was enlisted to help in writing park ranger examinations for the new agency. His involvement, and the school's proximity to many western parks, served to promote a significant association between graduates of the college forestry program and the National Park Service. Perhaps it was the remoteness of the parks, the lack of a well-developed cross-country highway system, but eastern schools were slow to respond to this opportunity. As a result, the Colorado Agricultural College quickly became the principal training ground for the rangers and administrators of the Park Service. By the late 1910s the school had acquired the appellation of the "Ranger Factory"; Hansen, Democracy's College, p. 220.

⁴⁹ Minutes, NCWUA, April 15, 1935.

⁵⁰ *Ibid.*, May 4, July 6, 1935, September 16, 1936; Lory Diary, March 1, May 14, July 15, 1937. For information on Chapman and Collingwood see Henry Clepper (ed.), Leaders of American Conservation (New York: The Ronald Press Company, 1971), pp. 65, 75-76.

⁵¹ Lory Diary, July 15, 1937; New York Times, July 11, 1937, XI, p. 1. This incident is not discussed in Donald C. Swain, Wilderness Defender' Horace M. Albright and Conservation (Chicago: University of Chicago Press, 1970).

⁵² Lory Diary, November 12, 1937; Swain, "The National Park Service and the New Deal, 1933-1940," Pacific Historical Review, XLI (August 1972), pp. 314-316, 322; Denver Post, November 12, 1937, p. 1; Rocky Mountain News, November 13, 1937, p.1.

⁵³ Once the Colorado-Big Thompson Project became an established fact, the Park Service--perhaps mindful of its own inconsistencies regarding "preservation" as opposed to "wise use" and possibly fearful of offending powerful politicians such as Edward T. Taylor--accepted the inevitable. For their part, supporters of the Colorado-Big Thompson Project were conscientious about ensuring the environmental integrity of Rocky Mountain National Park, exercising great care in the construction of a diversion tunnel through park lands and regulating the water flow affecting Grand Lake so as to avoid major fluctuations in its level; Swain, "The National Park Service and the New Deal," pp. 322-323, 327-328; John Ise, Our National Park Policy: A Critical History (Baltimore: The Johns Hopkins Press, 1961), pp. 434-435; Cole, "Transmountain Water Diversion in Colorado," pp. 62-63.

⁵⁴ Lory Diary, September 28, December 22-29, 1936, April 12-13, 28, May 17, June 2, 5, 7, September 19, 1937; Minutes, NCWUA, September 29, 1937; Lory, "Colorado-Big Thompson

Project Statement'; Fort Collins Express-Courier, September 26, 1937, p. 43. The Northern Colorado Conservancy District encompasses seven separate counties and has the authority to levy taxes on all property under its jurisdiction, the assumption being that non-irrigators, as well as irrigators benefit because of the increased prosperity of the area; Dille, A Brief History of the Northern Colorado Water Conservancy District, pp. 22-24. The conservancy district concept, which was based upon California and Utah precedents, has worked well for Colorado, and today more than thirty such entities operate within the state; Kelly, "Colorado-Big Thompson Initiation," pp. 68-69; Fischer and Ray, A Guide to Colorado Water Law, pp. 42-44

⁵⁵ Lory Diary, November 15, 1937; Fort Collins Express-Courier, November 9, 1937, p. 1, November 11, 1937, pp. 1, 4, November 21, 1937, p. 1. The true extent of Lory's association with Ickes, or with prominent Bureau of Reclamation officials for that matter, cannot be ascertained without examining records in the National Archives--a task not included in research for this paper. For example, Ickes makes no reference to Lory in his published diaries. President Lory was granted a special leave from college duties to perform the Repayment Commission assignment; Colorado State Board of Agriculture, Minutes, December 8, 1937, CSU Archives.

⁵⁶ Swain, "The Bureau of Reclamation and the New Deal," pp. 137-146; William E. Warne, The Bureau of Reclamation (New York: Praeger Publishers, 1973), pp. 62-64; Alfred R. Golze, Reclamation in the United States (Caldwell, Idaho: The Caxton Printers, Ltd., 1961), pp. 243-246; John Page, "The Relationship Between the Bureau of Reclamation and Its Water Users," Reclamation Era, XXVIII (September 1937), pp. 197-198, 201.

⁵⁷ John Page, "Repayment Commission," Reclamation Era, XXVII (December 1937), cover page.

⁵⁸ U.S. Congress, House, Report of the Special Repayment Commission, House Doc. 673, 75th Cong, 3d Sess, 1938, pp. 1-2 [hereafter cited as House Doc. 673).

⁵⁹ Lory Diary, December 9, 1937.

⁶⁰ *Ibid.*, December 5-23, 1937.

⁶¹ *Ibid.*, December 29, 1937

⁶² *Ibid.*, December 30-31, 1937, January 1, 1938.

⁶³ *Ibid.*, January 2-26, 1938.

⁶⁴ *Ibid.*, February 5, 7, 8, 1937; Charles A. Lory, "Repayment Commission Completes Investigations," Reclamation Era, XXVIII (March 1938), cover page; House Doc. 673, p.6.

⁶⁵ Lory Diary, January 27, April 16, May 23, 26, September 1, 13, 14, 1938.

⁶⁶ House Doc. 673, pp. 11-13, 31-34.

⁶⁷ *Ibid.*, pp. 12-17, 36-38.

⁶⁸ Reclamation Project Act of August 4, 1939, U.S., Statutes at Large, 75th Cong., 1st Sess., LIII, 1187-1198. This act retained the best features of the Fact Finders Act of 1924 and the Adjustment Act of 1926; see Golze, Reclamation in the United States, pp. 243-247.

⁶⁹ Warne, The Bureau of Reclamation, p. 63; see also "New Reclamation Repayment Legislation," Reclamation Era, XXIX (June 1939), cover page.

⁷⁰ Gordon H. Brown (comp.), A Guide to the Charles A. Lory papers (Fort Collins: Colorado State University Libraries, 1979, p. 7.

⁷¹ Minutes of the Board of Directors of the Northern Colorado Water Conservancy District, October 10, 1940-September 9, 1954, passim, on file in NCWCD Office, Loveland, Colorado.

⁷² Charles A. Lory, "Address, Dedication Exercises, Horsetooth Reservoir," July 21, 1951, Lory Collection.