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ADMINISTRATIVE HISTORY

DINOSAUR NATIONAL MONUMENT

BY

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EARL DOUGLASS THE MAN (17)
The Pre-Dinosaur Years: 1862-1907

Despite the fact that his father had jokingly told him he was the son of a Sioux chief,[1] Earl Douglass was in actuality born to Fernando Douglass and Abigail Louise Douglass in Medford, Minnesota, a small town in Steele County about fifty miles south of Minneapolis, on October 29, 1862.

In tracing his ancestry, with tongue in cheek, Douglass discovered that there was a Ute chief named Douglass from Colorado, two ancient Scottish families, the Black and the Red Douglasses, and even "in this country Tired Douglass who is a black one."[2] "But however confusing this may be Mr. Darwin has ably shown that from whichever branch I am descended the ancient ancestry is the same."[3]

More pertinent, it was likely that one of his grandfathers had been born in Canada and being unwilling at the time of the War of 1812 to fight against the United States had deserted and joined the U. S. Army.[4] Fernando Douglass, whom Earl always called "Mr. Douglass," had been born at Sackett Harbor, New York, on December [illegible], 1819, moving to Medford as a young boy. Although a wheelwright by trade, he spent most of his life in farming in Minnesota. In faith he was a Seventh-Day Adventist.[5]

Douglass facetiously noted at thirty that "my mother...was a Carpenter, before marriage which may account for my success in workshop work. Her mother was a Sioux, and on that fact I attribute much of my interest in [illegible] which may ultimately lead to my becoming a mineralogist or geologist," the latter certainly a prophetic statement.[6] Earl had two sisters, Nettie (born on July 26, 1859) and an older one. Nettie spent most of

her life at Medford, except for short residences in Iowa and South Dakota, until she and her father joined Douglass at Pittsburgh in 1913 and later went on to Utah with him.[7] His other sister married a Seventh-Day Adventist, W. B. White, homesteaded in South Dakota, and later apparently lived in Montana.

When Douglass was between one and two, his parents moved from Medford onto a nearby farm, where they stayed for several years before returning to town. At four Earl enterprisingly visited the school which his sisters were attending and "got a whipping for my extreme smartness."[8] The next year he began regular attendance at school "and learned my A.B.C.'s while sitting in the school ma'ams lap."[9] Douglass received all of his elementary education in the Medford schools, attending regularly until 18 or 19 but claiming that he "learned very little besides being spoiled forever as a student."[10] When Earl was seven, his father bought a farm in the Tennessee mountains, and the family anticipated moving there. This didn't materialize; but Earl did have some farm work experience around Medford.[11]

As a little boy he loved to go fishing in the local stream, catching clams, black bass, pickerel, rock bass and bullheads and with his playmates gathering and playing with the white bones of sheep which had bleached on the shore.[12] One day while fishing he found in the sand a beautiful, delicately banded agate, which he took home and carefully polished. This excited him to collect other pebbles ("When he found a fine one he went home triumphantly"[13]) and eventually some rocks containing fossils, which intrigued him immensely. On one occasion his father took him to a quarry where he saw long slabs of limestone crowded with fossil molluscs. His teacher at the time, who had been

studying geology, told young Douglass what the fossils were, but Earl "little dreamed that this play of his childhood, fossils, would be the occupation of his manhood."[14]

He enjoyed reading and remembered that his first book was one given him by his grandmother entitled "Toodles' Adventures with the Elephant."[15] Several years later one of his teachers presented him with a book of Longfellow's poems, which launched "the poetic age in my history. I borrowed books of poems and read them with a peculiar pleasure which I probably shall never feel again. I wrote poetry, too, such poetry as would make the angels weep if they had been compelled to listen to them."[16]

Earl also became interested in history books; indeed, in books of every kind. "Then began that form of dissipation known as book buying." Regarding this obsession, he noted in retrospect:[17] "When walking the streets of a city, and hanging around book stores or spending my last cent for a book when I knew not when I would get another cent, I have compared myself with a drunkard and found many things in which we resembled each other. But in one respect I have the advantage. Long after the drunkard has exhausted his whiskey barrel and spent all his money I can go to my library and get full and it does not cost me a cent."

As a young man Douglass was not unpopular with the girls; and he jocularly remembered his first love affair:[18]

> .....We were children. She boarded at our house and went to school. One moonlight night in winter we were playing on the frozen pond and I wrote a love letter on the ice. I think it made more of an impression on the ice than on her though. I do not wish to infer that she was as cold as the ice was. In the spring the ice melted and I think my affections must have vanished with it. I have often thought since that on the ice was a good place to record such sentiments for ice you know will melt. I heard from her the other day. She lives in N. Dak. and has a family growing up around her.

The first time that young Earl really spent much time away from his home town of Medford was during the summer of 1876, at fifteen, when he worked for an old bachelor in northern Iowa, a more significant summer in one respect than he could have anticipated. He was boarding with another old bachelor and his maiden sister, who owned a microscope and one day showed Douglass a flea's head through it:[19]

> Alas, that wicked flea! From that time I have had at intervals, what might be called the microscope on the brain. Perhaps some would term it a microscopic brain. Either is correct enough. For years after that I was planning and studying and trying to save money to buy a micro. Finally after several years I succeeded in getting a cheap one, was not satisfied with that, bought a better one, sold that, and now [1892] I plainly see I shall never be satisfied until I have one with mechanical stage, swinging adjustable substage, dichromatic condenser, apochromatic objectives. Behold what a great matter a little fleas head kindleth.

In 1882, at the age of twenty, he began his career in teaching a
and "became enthusiastic in that business, reading all the books and papers on the subject that I could get."[20] On October 4th of that year he received a 2nd grade certificate to teach in his county and the following spring (April 10) one to teach in Rice County, where he visited in a school room in the fall (November 12). He received a 2nd grade certificate for this same school on October 20, 1885, and another on April 26, 1886, for Steele County.

Meanwhile, hid older sister, now homesteading in Kingsbury County, South Dakota, had been pleading with Earl for several years to come there to teach. This he did in the fall of 1886, obtaining a 1st grade certificate for that county on September 24, 1886, qualified to teach reading, orthography, writing, arithmetic, English, grammar, geography, United States history, and physiology.

All of his certification examination grades were above 90 except for history (87) and geography (80). He taught several terms in Kingsbury County and also acted as a Sunday School superintendent, as he had done earlier in Minnesota.[21]

Douglass was to recall these early days in Dakota "with the most pleasurable remembrances:"[22]

> .....when the beautiful praries [sic] were scattered over with small houses and cabin homes, where the people were neighbors and friendly, and had no false ideas about birth and station and only separated by their religion. The young people were like a happy family. The only trouble was that some of the old people had a grave form of religitis which gave opportunity for some quarreling and hatred among themselves and put them in their own minds, immeasurably above some of their neighbors who were going down the dark path of everlasting ruin.

He long remembered "the pleasant times and scenes...in Dakota--the beautiful green prairies, the ponds with their wealth of microscopic life, the nests of hawks and wild ducks and smaller birds, the pleasant walks to and from school and the pleasant lessons and faces in school and many other things that are too numerous to mention.[23]

In the spring of 1888 Douglass matriculated at the University of South Dakota in Vermillion.[24] While here he became acquainted with one of the professors, Dr. Olsen, whom he characterized as "the grandest, noblest man I ever knew."[25] Douglass liked the university immensely and to earn enough money for his second year went into the book business, which apparently turned out to be an odious enterprise. At any rate, Earl later noted that he "kept a diary as I have for many years but I never have been able to read that awful record of miseries. Perhaps sometime when time has thrown its mist over the past toning down its awful sorrows I will tell you something of my experience as a book agent."[26]

Giving up the book business in the fall of 1888, he got a second grade teaching certificate for Beadle County, South Dakota (on October 5). One of his students in the school house near James River was "a bright but very talkative sort of a young man. He seemed just about what I was not in every way and we became friends."[27] This boy planned to attend South Dakota State College at Brookings in the spring and tried to induce Douglass to come with him. Douglass did spend the summer term of 1889 at Brookings; then with a first and second grade certificate for Brookings County (obtained on June 4) he taught in a town west of Brookings the following fall (he also got a first grade certificate for Beadle County on Octgo October 5, 1889). In the gring Douglass had an opportunity to join a plant collector in Mexico; and upon his return he went to St. Louis where he spent the next year and a half working at the Missouri Botanical Garden before going back to Minnesota.[28]

Eventually Douglass resumed his studies at Brookings, his sister Nettie spending one summer with him there. As he turned thirty he humorously noted that "when I was 18 and my grandfather 80 we were often mistaken for each other. Now they say I am growing younger and better looking, surprisingly as this may seem to those who see me now."[29] In 1893, during his senior year, Douglass was suddenly suspended from school, along with six other students, for participating in an academic rebellion. In the eyes of these students the college had been discharging good professors without sufficient reason and replacing them with poorly qualified ones; and the students had written a number of letters to the newspaper criticising the practice.[30] Fortunately for Douglass, he

was able to transfer to Iowa State College at Ames where he finished up and received his B.S. degree in 1893.[31]

During the spring of 1894 an old friend and former South Dakota professor of Earl's found Douglass a teaching position at a little country school in western Montana, in the heart of what the professor realized was good geological and paleontological country. Here it was possible for Douglass, after school and on weekends, to search the surrounding countryside for fossils. At first he found little exciting. However, "as time went by he found teeth, jawbones, bones and skulls of mastodons, camels, horses. He little appreciated their value at the time."[32] He continued to teach public school in Montana until 1898, part of the time at Virginia City. Then he went to the University of Montana to pursue graduate work, serving as an instructor in physics, physical geography, and geology,[33] and by 1900 he was heading up the University's Department of Historical Geology. Eventually he received a master's degree from the university.

During these years at the University of Montana he actively collected in his spare time, at the bone beds near White Sulphur Springs in 1898 with William T. Coffey, later with Homer McDonald. Of his collecting excursions he once commented: "How many times in travelling over burning hills and up hot gulches he had looked for some great discovery for which scientific men have long looked, some discovery that would startle the scientific world or the museum and then finding stretched out full length atop the cliff some almost complete skeleton of a rare reptile. Would he ever make such a discovery?"[34]

In 1900 Douglass was granted a fellowship in geology at Princeton University, where he hoped to study towards his Ph.D.

degree, specializing in tertiary vertebrates under the direction of the eminent paleontologist William B. Scott.[35] While at Princeton, incidentally, Douglass was active in the Unitarian Church. The graduate program, however, did not work out, although Douglass was still corresponding about the possibilities as late as 1908.[36] Thus in the spring of 1902 Douglass joined the staff of the Carnegie Museum in the Section of Paleontology. When Douglass came to Pittsburgh, he brought with him his extensive collection of fossils, which was subsequently purchased by the Museum.[37]

Nicely enough for Douglass, the Museum sent him back to Montana during the 1902 summer to continue his collecting, "a very successful trip."[38] That fall when he returned to Pittsburgh, he went to work under the direction of J. B. Hatcher on the many fossil remains which he had agathered through the years in Montana and on which he was to publish in the Annals and Memoirs of the Carnegie Museum from 1903 to 1910.

In June of 1903 Douglass was back in Montana in the Virginia City area on another collecting jaunt; and again two years later he was in the field in the West for the Carnegie Museum, working with Percy E. Raymond from Minnesota to Idaho, procuring vertebrate and invertebrate fossils and gathering data "for settlement of certain geological problems which had arisen in study of that region."[39] "During the summer and fall one or the other man explored the Ordovician rocks near St. Paul and westward; the Badlands of the Little Missouri River in N.D. and on the Yellowstone River in eastern Montana; various Paleozoic and Mesozoic formations in western Montana and certain Tertiary beds extending from Montana to Idaho. Result was the ascertainment of

the relative position of various strata and the acquisition of quite a considerable body of material, some of which was new to science."[40]

It was in the autumn of 1905, on October 20, that Earl Douglass married Pearl C. Goetschius of Alder, Montana. While still in college, thirteen years before (1892), he had made some jocular excuses for not being married at thirty:[41] "(1) I do not think it safe to fly to evils that one knows not of. (2) I know of no one who cares enough for me. (3) I know of no one I could freely accept as a life companion.... (4) I have become acquainted with many families in my long career and I believe there is a skeleton in every family and I sometimes think there is one in every individual. (5) Leap year is fast passing away and I have not received the many flattering offers I had fondly anticipated."

In reality, he had been quite popular with the girls since his teaching days in Minnesota, receiving many "fan letters" like the following:[42]

> You must not look for much of a letter from me for I have not had practice in letter writing I wish that I could have been here the first of the term and I have enjoyed it while I have been to school and I am sorry that school is out so soon and I would like it very much if I could go to school where you teatch next term I cant think of anything that would be interesting to you.

Pearl he had known for some time during his Montana days, indeed since 1896 when she was a student of his, some fifteen years his junior.[43] Her mother had traveled west in a covered wagon,[44] and she was descended on her father's side from William of Orange.[45] Both of her parents, and Pearl herself, were very religious; and during their early courtship her parents had not looked with favor on Pearl's association with Unitarian Douglass.

Indeed, in 1902 their relationship seemed at an end. Then Pearl's father died and Earl "developed religious ideas himself and had come to believe in the hereafter."[46] Thus, intent on giving her "a ring or something," Douglass returned to Virginia City, Montana, in June of 1903; and the couple made up.[47] After his marriage, a friend from the Missouri Botanical Garden wrote "Accept my congratulations and let me say to the little Madame, what my husbands' brother said to me about my choice. 'Tell her she has a bargain,' and Douglass at last captured the little Montana girl."[48]

From Montana the couple went back to Pittsburgh, where in 1906 Douglass was busy working in the Carnegie Museum lab and writing about the fossils he had collected.[49] In 1907, Dr. W. J. Holland, now director of the museum, made arrangements to send Douglass to northeastern Utah for a thorough exploration of the fossiliferous strata of the Uinta Basin. Holland had gotten J. Rudolph Garfield, Secretary of the Interior, interested in this project. Garfield, in turn, referred Holland to U. S. Indian Commissioner Leupp, who made available papers permitting entry onto Indian lands "for the purpose of collecting fossils," the only condition being that the Carnegie Museum representatives were not to provide the Indians on the reservations with whiskey. Holland observed that "this proviso was not in the least degree embarrassing."[50]

Douglass's route to the Uinta Basin gave him an opportunity to explore hastily in the vicinity of Grand Junction, Colorado, and around Dragon, Utah.[51] Then he headquartered at an abandoned stone house on the stage route from Dragon to Vernal, at Well No. 2.[52] From this spot Douglass began to investigate the rich fossil

beds from the White River on the east to the banks of the Green River on the west, north and south of the road to Vernal. Collecting was good, especially of vertebrates and particularly in a site called "The Devil's Playground," where Douglass found some remarkable fossil turtles (later named and described by O? P. Hay).

One of Earl's most exciting finds was a complete skeleton of Dolichorhinus longiceps, a titanothere from an early Eocene outcrop near the White River, a specimen which later was put on display in the gallery of fossil mammals at the Carnegie Museum.[53] Douglass's first love was, by the way, fossil mammals; and there were many Cenozoic sedimentary beds in the Uinta Basin harboring a goodly number of such remains. Only by accident, really, was Earl Douglass to become famous as a hunter of dinosaurs rather than an excavator of mammal bones.

References Cited

1 - Earl Douglass's autobiography, read before the Miltonian Society of South Dakota State College, Brookings, September, 1892. Doug. Corres. - "...got me among the Indians and that I was the son of a Sioux Chief. But however this may be the Douglasses have always used me as well as though I really belonged to the family."

2 - Ibid.

3 - Ibid.

4 - Letter, Douglass to Cousin Caroline, May 17, 1924. Doug. Corres.

5 - The information on Earl's father came primarily from a brief obituary in the Vernal Express, January 28, 1916.

6 - Milt. Soc. autobiography, op. cit.

7 - Obituary for Nettie Douglass, Vernal Express, March 30, 1923.

8 - Milt. Soc. autobiography, op. cit.

9 - Ibid. - "...But I have lived to see those old methods abandoned. They gradually went out of use as I grew older. That you must remember was a quarter of a century ago. I refer, of course, to the A.B.C. methods."

10 - Ibid.

11 - Letter, Douglass to Don Felter, August 17, 1924. Doug. Corres.

12 - Douglass autobiographical manuscript, n.d. Doug. Corres.

13 - Ibid.

14 - Ibid.

15 - Milt. Soc. autobiography, op. cit.

16 - Ibid.

17 - Ibid.

18 - Ibid.

19 - Ibid.

20 - Ibid.

21 - Ibid.

22 - Letter, Douglass to anonymous, n.d. Doug. Corres.

23 - Letter, Douglass to Zella, June, 1923.

24 - Holland, W. J. 1931. Earl Douglass. A sketch in appreciation of his life and work. Annals Carnegie Museum 20:279.

25 - Milt. Soc. autobiography, op. cit. - "...the lamented Dr. Olsen." He went on to comment that "It would be far better if that almost ideal character had had more influence on [me]."

26 - Ibid.

27 - Ibid.

28 - Ibid.

29 - Ibid.

30 - A series of articles in the Angus Leader of this period discussed the rebellion. Copies are among the Douglass correspondence.

31 - Letter, Douglass to Trelease, May 19, 1924.

32 - Doug. autobiographical ms., op. cit.

33 - Holland, op. cit., 279.

34 - Doug. autobiographical ms., op. cit.

35 - Ibid., Holland, op. cit., 279.

36 - Letter, C. F. W. McClure to Douglass, December 2, 1908. Doug. Corres.

37 - Holland, op. cit., 280.

38 - Ibid.

39 - Ibid.

40 - Ibid.

41 - Milt. Soc. autobiography, op. cit.

42 - Letter, Ada Brewster to Douglass, June 7, 1883. Doug. Corres.

43 - Letter, Douglass to Gilbert Gibson, June 22, 1924. Doug. Corres.

44 - Letter, Pearl Douglass to Douglass, August 6, 1924. Doug. Corres.

45 - Letter, Douglass to Gawin Douglass, September 20, 1926. Doug. Corres.

46 - Letter, Douglass to Pearl Goetschius, April 29, 1903. Doug. Corres.

47 - Ibid.; and other letters, June, 1903. Doug. Corres.

48 - Letter, Margaret Irish to Douglass, July 11, 1907.

49 - Holland, op. cit., 280.

50 - Holland, op. cit., 281.

51 - Holland dates this trip as in 1907 in his obituary of Douglass; other sources suggest that Douglass's first visit to Utah was in 1908.

52 - Holland, op. cit., 281. - The house belonged to a gilsonite mining company which made it available to Douglass free of charge.

53 - Ibid.

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1907-1909: Douglass Discovers the Dinosaurs (1)

After a year in Pittsburgh working on the fossil collections he had made in Montana and North Dakota, Douglass was sent in 1907 by the Carnegie Museum's director, Dr. William J. Holland to the Uinta Basin on a fossil reconnaissance.[1] This was a relatively little explored area, although Professor O. C. March of Yale had done some productive though brief collecting here, as had O. A. Peterson of the American Museum of Natural History in 1893 and (possibly) Princeton University. Since this was part of the Uinta and Uncompahgre Indian Reservations, it was necessary for the museum to obtain authorization to enter these reservations for the purpose of collecting fossils. This was readily procured, but with the stipulation that the collectors not tempt any of the Indians with whiskey.

In 1907 Douglass collected around Grand Junction, Dragon (Utah), and headquartered at an abandoned stone house ("Well No. 2") on the stage route between Dragon and Vernal, made available to him without charge by a local gilsonite mining company. The collecting for fossils, especially vertebrates, was good in this country which lay between the White and Green Rivers, and Douglass made many new finds, including the most perfect fossil Dolichorhinus longicops (a forerunner of the Titanotheres) known for many years.[2]

Douglass returned to the Uinta Basin in the spring of 1908 and continued his search for fossils.[3] Holland joined him in September and, remembering that the Hayden Survey had reported Jurassic strata, good dinosaur deposits, in the Uinta Range to the northwest, suggested that they extend their search in that direction. Somewhere southeast of Split Mountain gorge the pair encountered Jurassic deposits, left their mules, and continued searching for fossils on foot, with the understanding that whoever found anything would signal the other by firing his gun. Shortly, Holland heard the discharge of Douglass's shot gun and after an arduous scramble found him at the bottom of a narrow ravine beside the weathered-out femur of a Diplodocus. The specimen was too heavy to remove, but this at least encouraged the men to think that the surrounding countryside might well reveal significant dinosaur remains. Later they related their discovery to a group of graduates

of a middle-western Lutheran college who were dredging for gold in the Green River; and Holland suspected that the bone eventually made its way to that college. Crossing the river at Split Mountain gorge, Holland and Douglass found that the Jurassic deposits continued northwestward as an extensive curving uplift on the north side of the river, an uplift which would watrant careful and prolonged examination.

During this time Douglass had been in correspondence with an O. A. Smith of Myton, Utah, who had been in the Uinta Basin for about forty years, having packed for the Wheeler Survey in 1872-73. When Douglass returned to Pittsburgh in October, he continued to correspond with Smith, inviting him to help out the next spring with the "Fossell hunting business".[4] Smith was familiar with the location of fossils in the region and judging from his personal observations must on occasion have come across dinosaur remains, since he wrote Douglass in one letter "I once saw what we called a sea serpent his fossil lay on a smooth surface 75 ft long...."[5]

Smith was a frontier individualist, having his own ideas about the regional geology and his personal quirks of character: "....as to my habit, I sleep but little have arisen all my life at 4 o'clock I was born in Hopkinsville Christon County Kentucky and have drunk a little whisky all my life but never was drunk I am 60 years of age and still very much alive, have no book learning, but common horse sence."[6]

In the spring of 1909 Holland instructed Douglass to return to the Uinta Basin and continue an examination of the Jurassic deposits north of Jensen, in search of a rich dinosaur locality.[7] Douglass got in touch with Smith in mid-July, and Smith was eager to help out--"can go with you @ the rate of $2 per day and feed"--feeling that the area around Myton would be a productive place to investigate.[8]

About the first week in August, Douglass was in Vernal for a few days and to the newspaper expressed interest in the report of a dinosaur skeleton near Ouray, Utah, probably one of Smith's finds.[9] The next week, however, he and George Goodrich, a local elder of the Mormon Church, were exploring the foothills northeast of Vernal,

locating scattered dinosaur bones.

Then on August 17 came the big discovery: "....At last in the top of the ledge where the softer overlying beds form a divide.... I saw eight of the tail bones of a Brontosaurus [actually Apatosaurus] in exact position." Further digging began to expose more of the giant fossil remains.[10]

Douglass's discovery was hailed by headlines in the Vernal Express of August 20: "Sixty-five feet long, sixteen feet high. Remains of Immense Dinosaur Discovered on Green River by Earl Douglass of Carnegie Museum."[11] The article reported that the specimen had been found in its entirety except for a part of the tail, which was later located a few feet away. Douglass did not plan to remove any part of the remains until after the following Sunday, "in order to give Vernal people a chance to see it and all those who avail themselves of the opportunity will witness a show of a life time."[12] Douglass told the newspaper editor that "it will require at least two years' time to remove this wonder. After the earth has been removed from all around it with pick and shovel chisels will be used in cutting it out from the sandstone. Each section will then be numbered and placed in a box for shipment."[13]

A number of Uinta Basin people turned out on Sunday, August 22, to view Douglass's find, including Miss Isabelle DeMoisy, Miss Neil Preece, Miss Lorna Burton, Miss Carhart, Miss Helen DeMoisy, Miss Eva Fouts and Dr. C. E. Hirth, in a party led by Douglass and William Neal.[14] By this time about twenty-five feet of the fossil, including the tail and part of the body, had been exposed to view. It was concluded that because of the rugged and isolated nature of the country, it would be necessary to build a "snake" road from the find to the low land in order to transport the pieces after they had been removed, covered with plaster of Paris, numbered and boxed.

In early September Professor E. S. Hinckley of the Brigham Young University geology department visited the fossil beds and enthusiastically stated that they would "make this country famous" and that Douglass was a "Prince among men and especially in his particular

calling."[15] Accompanying Hinckley and his wife were Mr. and Mrs. Frederich E. Buss of Provo, Mr. and Mrs. A. T. Johnson, Charles E. Colton, B. O. Colton and J. C. Hacker of Vernal, all of whom were "royally entertained by Mr. William Neal, whose 180-acre farm is about the nearest place to the beds."[16]

As the days went by, increasing numbers of people visited the dinosaur site. On Monday, September 6, for example, there were eleven visitors including Dr. W. H. Ochsner of Stanford University and the California Academy of Sciences who reported that "the quantity of the fossil bed is not so great as some others but the quality is superior. The particular skeleton that Mr. Douglass is working on is priceless to scientists."[17]

Douglass's camp on the Neal farm near the Green River was becoming well established, and on September 13 he picked up his wife and son from the train at Alhandra and took them back to his encampment.[18] Mrs. Douglass herself quickly stepped into regional affairs, indeed serving as temporary principal of the Jensen schools during their first week of operation.[19]

Meanwhile operations at the quarry site were continuing apace. By October 8 the dinosaur skeleton had been well roughed out, although no skull had as yet been uncovered.[20] The original skeleton dipped nearly straight down, with the neck extending up and then turned under the body, so Douglass was still optimistic about finding the skull. Nearby, as if an omen of things to come, Douglass had discovered the foot of another dinosaur and by October 21 was sure he had another entire skeleton, a small one.[21] In anticipation of preserving the remains, he send away for plaster of Paris and other collecting materials on this date. Interest in the entire operations ran high regionally, and at the mid-October meeting of the Vernal Nature Club, which was primarily devoted to an examination of butterflies and moths under the microscope, Leo Thorne reported on the quarrying operations.[22]

By mid-November it was becoming evident, as the Vernal Express coined the phrase, that Douglass had discovered a "regular nest of the animals", with evidence of two large specimens and one smaller one.[23] It was a disappointment not to have unearthed any skulls as yet, since the skulls and teeth would give clue to the feeding habits of the dinosaurs being recovered. And the materials necessary for preservation were slow in arriving. But Douglass still felt, as the 1909 season came to a close, that he had "work enough to last him for sometime".[24]

Life at the Dinosaur Quarry: 1910 - 1915 (2)

Through the cold winters of 1909 and 1910, and the intervening hot summer, Douglass pursued the quarrying work, backed by a budget of $15,000 from Andrew Carnegie "out of his own pocket."[1] A road up to the quarry site had to be improved, and a narrow gauge track for a small dump car laid into the cut in the tilted Morrison outcrop. Workers were recruited from the surrounding ranch country and made their encampment in spring-fed Camp Gulch (= Happy Hollow) west of the quarry during these early years.[2] Later this wooded gulch was to be used for picnicking by sightseers.

The quarry operation involved running a cut east and west in front (south) of the bone deposit, then carefully stripping off the overburden until the bones were exposed. "The quarry was laid out in four-foot squares and a map made one inch to the foot. Every bone as it was exposed was given a number and entered on the map."[3]

> Judiciously placed charges of giant powder shattered the overburden. Hand drills, wedge-and-feather, and crowbar worked the rock away, until the bone layer was encountered. The slow attrition by hammer and chisel accomplished the final delicate separation of the remains from the enclosing matrix. Team-and-scraper and small handcarts removed the rubble that swiftly accumulated in the cut. As the bones were chiseled from the quarry face in large blocks of rock, they were encased in strips of burlap dipped in flour paste. (Later, plaster of Paris supplanted the flour paste.) Then they were lowered by rope onto a mule-drawn skid and "snaked" down....[4]

the steep trail to the wagon road in Camp Gulch to await boxing. Eventually the boxes were loaded on wagons for the 55-mile trip to Watson, where they were put on narrow-gauge railroad cars of the Uinta Railway, later to be transferred to the regular gauge line of the Denver and Rio Grande for the trip back to Pittsburgh.[5]

An early disappointment was the discovery that the pelvic girdle and vertebrae of the original find (known as Skeleton No. 1) were not articulated. Associated fossils proved to belong to another, smaller dinosaur (Skeleton No. 40), which at one time in the quarrying operation was exposed in a vertebral column for some twenty or thirty feet, with many of the ribs in place. As Douglass excitedly noted, "It was like one of the dreams a fossil hunter has while tailing along hot canons in the burning heat and searching bare walls of rock for prehistoric remains."[6]

By the second year of operations it had become evident that "the work of excavation has proved itself more difficult than it was originally supposed that it would be."[7] However, in the fall of 1910 the first shipment of fossils, about 50,000 pounds in matrix, was sent to the Carnegie Museum, including, fortunately, most of the skeleton of No. 1.[8] This year Douglass purchased a considerable tract of land on the banks of the Green River below the quarry site where he was to develop his small ranch, eventually growing some vegetables, livestock for meat and milk, and poultry.[9]

During the winter of 1910-11 Douglass returned to the Carnegie Museum but was back at the quarry in early April.[10] At first the excavating had moved slowly. The partly exposed bones were fragile from weathering; and great care had to be exercised to prevent destruction. By early 1912, however, the quarrying involved removal of fossil remains in solid blocks of sandstone, the bones were sturdier, the work crew (usually four men) had more experience; and Douglass observed that "during the last ten months we have taken out much more than during the previous twenty months."[11] Not only had there been great success in the removal of the original specimens;

But Douglass also reported finding in the area the impression of the skin of a Stegosaurus, the skull of a large carnivorous dinosaur, an early Jurassic mammal, "and many other things of importance."[12]

Douglass postulated, based upon the distribution of the remains, that "evidently the carcasses floated down a large river until they came to a shallow place where they were stranded. The currents disturbed the bones to some extent and then buried them in the sand. Even the directions of the current is plainly shown by the position of the bones. Naturally the motion of the current disturbed the skeletons of the smaller animals more than those of the larger, so the bones are, as a rule, more scattered."[13] There was little duplication of specimens unearthed so far, and of the friendly rivalry between the American Museum and the Carnegie Museum for fossils, Douglass gleefully commented "....we now have it beaten at least two miles in the Dinosaur race."[14]

Again during 1913 Douglass was back at the museum in Pittsburgh, while J. A. Kay carried out excavations at the quarry by himself. Douglass at this time instructed Kay "to continue 'The Cut' westward, from the western terminus of the old cut to the western terminus of what we call the 'West Extention' or the western edge of the easily accessible portion of the 'bone-layer.'"[15] This would expose about 2400 square feet of unworked bone-layer (averaging about 20 feet high by 120 feet long). The east-west cut was only to be wide enough "to give room to work to advantage" and so hewn out as to be worked without ladders or scaffolds.[16] Kay was to use mules to remove the debris, which was either worked into the trail to reduce its existing grade or dumped north of the quarry.

Although Douglass was in ill health in 1914, he continued to pursue the excavation. Work was starting at the quarry at 7:30, concluding at 4:30 daily. By 8:00 p.m. Douglass hoped to have all the chores around the ranch done, supper eaten; then was ready to visit and read about 7:00. By 8:45 or 8:30 he anticipated retirement to his private room to "write an hour or two each night."[17]

In the fall he was staying alone in the sheep wagon office near the quarry. It contained a sheet iron stove over which he could cook his soup or meat and vegetable dinners, with plenty of wood and coal at close hand, a new bread box with emergency outfit, a box for charts, and so on. He had some book shelves up, with a few books: Hatcher's memoirs on dinosaurs, a large dictionary, Book of the Mind and Thought Society Record Books, etc. He just wished that his tent house had a stove in it so he could get in "one or two hours of writing and lone contemplation."[18]

Meanwhile, back in Pittsburgh Skeleton No. 1 was being mounted in the Hall of Vertebrate Paleontology at the Carnegie Museum. "The platforms have been built, the uprights made, and the vertebrae are being assembled. The placing of the head on this beast is of course the great question."[19] Douglass had just discovered the lower jaw of an alleged Brontosaurus, and Holland was anxious to get this specimen back to the museum. Also, he wanted to have a sketch from Douglass showing the relationship of No. 1's skull to the other parts of this skeleton.

This fine dinosaur skeleton, when finally articulated in 1915, was considered to be "the most complete individual specimen of a large dinosaur yet reunited," seventy-six feet in length and fifteen feet in height.[20] The species name "louisei" was given in honor of Andrew Carnegie's wife; while any one of three generic names, Apatosaurus,

Brontosaurus or Atlantosaurus could have been designated. Apatosaurus was chosen, in part because it had scientific priority and because it sounded better with the species name. But the men who worked on the dinosaur skeleton fondly called it "Patsy."[21]

During the period of 1914-1915 from $200 to $300 was being deposited to the Carnegie quarry field account each month,[22] while Douglass's expenditures ranged from about $150 a month to over $500.[23] The Fossil Fund was no longer a separate appropriation, and Holland was piqued at Douglass in the spring of 1915 for requesting a monthly expense account increase to $325.[24] Financial relations with Douglass had never been satisfactory to the people back East, since Douglass was never too careful in recording the correct amount of the field account deposits; and the home office was [illegible] continually having to balance up later. For the year which ended on 1 September, 1915, the Carnegie Museum had spent between $4000 and $5000 on account of the operations at the quarry; and as Holland needled Douglass at this time, "We ought to get something very good with that money."[25] There were many fossils ready for shipment, but Douglass had not gotten them crated as yet. In mid-1915, by the way, both Arthur Coggeshall, who had worked on the erection of Skeleton No. 1 [illegible] at the Carnegie Museum, and Holland paid visits to the quarry to see first-hand what Douglass had been doing.[26]

During these years before it was set aside as a national monument, Douglass estimated that approximately 400 @ or more people visited the dinosaur quarry each year; and in 1915 as high as thirteen or fourteen automobiles made the trip from Jensen to the quarry. "Most of the schools in the eastern portion of the basin, have with principals and teachers visited the quarry

for a holiday and to see and learn what they could."[27]

Maeser Young, a seventh-grade pupil at David School who went to the quarry with fellow students on October 15, 1915, gave a good portrayal of the site as it assumed its status of national monument:[28]

> The place where they are digging is up on a high hill, but there is a good trail, for they haul water up on a drag which is pulled by a pair of white mules. There is a cut through the top of the hill where they found all of the bones of the Douglass Dinosaur. ....He said most of the bones were found lying up and down, which he said, was cused by the up-heavel of the earth.
>
> On the north side of the cut is a cave to keep dynamite in. It is reached from the bottom of the cut by a ladder, and from the inside of the cave to the south side of the cut is a large cable that is used for the purpose of getting the dynamite into the cave. West of this cave they have marked off in four-foot squares the rest of the north side of the cut. Mr. Douglass said that these lines were used forlocation similar to the longitude and latitude lines.
>
> They have a lot of bones all boxed up and ready for shipment. Each box has a number on, besides the bones having its name and number painted on it in blck paint. Each bone as soon as it is dug is encased in plaster of paris, so it won't get broken.
>
> One rib has been bound that measured six feet in length, two feet in circumference, and about eight inches in diameter. They found teeth measuring four inches in lenth which is very small, in comparison with the size of the animal.
>
> During these years before it was set aside as national monument, Douglass estimated that approximately 400 or more people visited the dinosaur quarry each year. "Most of the schools in the eastern portion of the basin, have with principals and teachers visited the quarry for a holiday and to see and learn what they could."

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1 - Douglass, Earl. n.d. (ca 1916). The Carnegie Museum Dinosaur Quarry and National Monument. Manuscript, Douglass correspondence.

2 - Ibid.

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4 - Good, John M., T. E. White and G. F. Stucker. 1958. The Dinosaur Quarry. P. 32. Washington: National Park Service.

5 - Douglass, n.d., op. cit.

6 - Ibid.

7 - Anonymous. 1910. Editorial notes. Ann. Carnegie Museum 7(1): 3-4.

8 - Douglass, n.d., op. cit.

9 - Holland, W. J. 1931. Earl Douglass. A sketch in appreciation of his life and work. Ann. Carnegie Museum 20(3-4): 285-286.

10 - Anonymous. 1911. Editorial notes. Ann. Carnegie Museum 7(3-4): 281.

11 - Letter, Douglass to Carnegie, February 27, 1912. Douglass correspondence.

12 - Anonymous, 1911, op. cit.

13 - Letter, Douglass to Carnegie, February 27, 1912. Douglass correspondence.

14 - Ibid.

15 - Letter, Douglass to J. A. Kay from Pittsburgh, July 11, 1913. Douglass correspondence. Kay, by the way, was being paid $45 a month about this time.

16 - Ibid.

17 - Douglass manuscript-letter, December 14, 1914. Douglass correspondence.

18 - Ibid.

19 - Letter, Holland to Douglass, November 11, 1914. Douglass correspondence.

20 - Douglass, n.d., op. cit.

21 - Coggeshall, op. cit., 61, 95.

22 - During the 1914 period from $200 to $250 was being deposited per month in Douglass's field account; this amount went up to $300 in 1915.

23 - Field Account Tally Sheet, 1914-1915. Douglass correspondence. Monthly expenditures amounted to: August,$146.40; September, $276.00; October, $383.13; November, $290.15; December, $523.69; January,$317.87; February, $330.32; March, $330.75; April, $331.02; May, $231.68; June, $355.54; July, $251.65.

24 - Letter, Holland to Douglass, May 3, 1915. Douglass correspondence. Holland emphasized "....Until some time when you hear from me do not exceed three hundred dollars a month. I doubt if we will be able to stand this amount much longer."

25 - Letter, Holland to Douglass, September 1, 1915. Douglass correspondence.

26 - Letter, Holland to Douglass, June 9, 1915. Douglass correspondence. "I retain very pleasant memories of the kind hospitality shown me by yourself and your godd wife during my brief visit to the quarry. The visit I paid you enabled me to form a clearer idea of the nature of the work that has been done than I possibly could have derived from written reports."; Vernal Express, October 22, 1915: At the first meeting in July of 1915 of the Lone Tree Betterment Society at the Douglass ranch, "Though it seemed an out of the way nook of the world there was at least one distinguished guest there. Mr. Arthur Coggeshall of the Carnegie Museum, the man who so skillfully mounted the big dinosaurs for the museum was there with his oldest daughter, as they were there visiting with the Douglass family."

27 - Douglass, n.d., op. cit.

28 - Vernal Express, November 5, 1915.

The Establishment of the Monument (3)

While Douglass and the Carnegie Museum were attempting to obtain the quarry area as a mineral claim in 1915, representatives of the Department of the Interior were moving to have the site set aside as a national monument. In a letter of August 6, 1915, to the General Land Office in Washington, the First Assistant Secretary of the Interior requested that a proclamation creating the monument under the National Monument Act of June 8, 1906, be drawn up.[1]

The proclamation was duely prepared and on August 21 was sent to Clay Tallman, Commissioner of the General Land Office by Frank Bond, Chief Clerk, with appended memorandum. Noted Bond, "I would not feel quite satisfied to let it go through without this memorandum because some of the features of this case are new to monument creation work."[2]

Some of Bond's comments are sufficiently pertinent to quote in their entirety:[3]

> I think the National Monument Act, while broad enough in its expression to cover this case, was not intended to protect objects solely for the time it would take to remove them. A fossil quarry can have no interest or value other than that which attaches to the objects removed therefrom and when this removal is accomplished there will remain no excuse for perpetuating the reservation. In all other National Monument Reservations, the objects protected are not intended to be removed, but rather made accessible for the benefit of science. With this end in view, the historic and prehistoric ruins of the several existing monuments are restored, or are to be restored by the most competent authority, to their original condition as far as possible, thus making the reservation not only more attractive and profitable for study and observation, but also permanent in the place where created.
>
> As stated in the letter to the President, the lands included within this monument are already covered by coal and phosphate withdrawles, so that with the rejecting of mineral entries no other form of entry is possible therein as long as these withdrawals stand and further only such excavations can lawfully be made as may be authorized by Departmental permits granted for the purpose. If there is a possibility that the withdrawals for coal and phosphate may be vacated, then the fossil deposit could be protected until its treasury were removed under the Act of June 25, 1910, and it seems to me that this withdrawal would be more fitting than the creation of a National Monument, and equally protective.

X There is one other consideration which should occupy our attention in connection with the creation of National Monuments and that is the granting of permits to unofficial persons or institutions to excavate and restore, or pull down and cart away. The National Monuments should continue to be small National Parks, administered for the education and enjoyment of the people and to promote this end, I believe this Department can profitably confer, and I hope, enter into formal agreements with other Departments and the Smithsonian Institution, not to issue permits either for development or destructive purposes within these reserves.

The monuments are but drops in the bucket, so to speak, there being great floods of similar objects which may be exploited by colleges and museums under the permits not issued by authority.

There are in the west, many locations where fossil remains of early animal life are found. In Wyoming, Colorado, Nebraska and other states, are exposed geologic strata containing striking remains, not only of the reptilian age like those Utah beds, but of ages and periods much more recent, geologically speaking. These have been exploited for many years by both official and unofficial parties of explorers and excavators and their relics form most important parts of the greatest museums of the country.

Four days later Tallman endorsed the memorandum and referred it and the proclamation to the First Assistant Secretary. The following day (August 25, 1915) Franklin K. Lane, Secretary of the Interior, signed the proclamation's letter of transmittal to President Woodrow Wilson, although this letter, quoted below, was dated ahead to September 27.[4]

V My dear Mr. President:

I have the honor to submit herewith, for your signature, a form for a Proclamation creating under the provisions of the act entitled, "An Act for the Preservation of American Antiquities", approved June 8, 1906, The Dinosaur National Monument, Utah.

This reservation is created to prevent unauthorized excavation and removal from the roofs of Juratrias rocks, here partially exposed, of the fossil remains of Dinosaur and other early reptilian forms of great scientific value and paleontological interest. These fossil beds have been partially exploited by the Carnegie Museum, Pittsburgh, through a permit issued by this Department on March 15, 1912. Recently an attempt to obtain title from the Government through the medium of an entry under the mining laws was prevented by cancellation of the entry and while other forms of entry are temporarily prevented by the coal and phosphate withdrawals covering the tract, it is deemed best to create a permanent reservation under the provisions of the act referred to.

These tremendous fossil remains, probably of the Juratrias period, exemplify some of the extraordinary forms of early reptilian life on the globe. They should not be lost to science by the haphazard and unauthorized excavations of speculators or vandals, nor should the best of them, I think, be scattered among institutions of learning the world over, until this Government has in its great museum, a full representation of the principal and most extraordinary types.

I have the honor to recommend that the National Monument be created.

Cordially yours,

(sgnd.) Franklin K. Lane

The President,
The White House.

Inc. 7049

On October 4, 1915, President Wilson signed the following proclamation,[5] No. 1313, officially creating Dinosaur National Monument and had the document sent to the State Department for accession by the Bureau of Rolls and Documents.[6] Attached to this document was a map of the new monument. The executive order could not be printed immediately because of a delay in obtaining "photolithographic" copies of the accompanying map.[7]

By the President of the United States of America

A Proclamation

Whereas, in section twenty-six, township four south, range twenty-three east of the Salt Lake meridian, Utah, there is located an extraordinary deposit of Dinosaurian and other gigantic reptilian remains of the Juratrias period, which are of great scientific interest and value, and it appears that the public interest would be promoted by reserving these deposits as a National Monument, together with as much land as may be needed for the protection thereof.

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the power in me vested by Section two of the act of Congress entitled, "An Act for the Preservation of American Antiquities," the unsurveyed northwest quarter of the southeast quarter and the northeast quarter of the southwest quarter of section twenty-six, township four south, range twenty-three east, Salt Lake meridian, Utah, as shown upon the diagram hereto attached and made a part of this proclamation.

While it appears that the lands embraced within this proposed reserve have heretofore been withdrawn as coal and phosphate lands, the creation of this monument will prevent the use of the lands for the purposes for which said withdrawals were made. Warning is hereby expressly given to all unauthorized persons not to appropriate, excavate, injure or destroy any of the fossil remains contained within the deposits hereby reserved and declared to be a National Monument or to locate or settle upon any of the lands reserved and made a part of this monument by this proclamation.

In Witness Whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington, this fourth day of October, in the year of our Lord one thousand nine hundred and fifteen and the Independence of the United States the one hundred and fortieth.

SEAL

WOODROW WILSON

By the President:
Robert Lansing
Secretary of State

The creation of this new national monument was, of course, greeted enthusiastically by residents of the region. The Vernal Express headlined the article on the proclamation "Our Notoriety Becoming National," and proudly went on to comment "....That's right, we deserve it, but that's only one out of many important things in which the Uintah basin leads the world. We beat the President, however in the dinosaur business - we've got a dandy in our park just in front of the court house."[8]

(References Cited)

1 - Memorandum, Frank Bond, Chief Clerk, General Land Office, to General Land Office Commissioner, August 21, 1915. Nat. Archives File 580, Dinosaur.

2 - Ibid.

3 - Ibid.

4 - Letter, Franklin K. Lane, Department of the Interior, to President Woodrow Wilson, September 27, 1915. Nat. Archives File 580, Dinosaur.

5 - Copy at National Archives, File 580, Dinosaur.

6 - Letter, Secretary to the President to Franklin K. Lane, Secretary of the Interior, October 4, 1915. Nat. Archives File 580, Dinosaur.

7 - Letter, Commissioner, General Land Office to Robert S. Yard, October 21, 1915. Nat. Archives File 580, Dinosaur.

8 - Vernal Express, October 15, 1915.

The Carnegie Museum Quarrying Permits (4)

When Dinosaur National Monument was created in 1915, it was naturally no longer possible for the Carnegie Museum routinely to continue its quarrying operations as in the past, since of course monument areas were preserves. However, the Department of the Interior invited the Museum to "present to the Department an application for a permit, under the act of June 8, 1906 (34 Stat., 225), to excavate the area and gather and remove therefrom objects of scientific interest, with a view to increasing the knowledge of such objects, and permanently preserving them in a public museum....."[1] If such a permit were granted, this certainly would make Dinosaur unique among monuments as one from which articles of scientific interest could actually be removed.

Upon receipt of the invitation to present a permit application, Douglass immediately cabled Holland, urging that the application be presented right away--"Not safe to delay."[2] Holland wasted no time in writing the First Assistant Secretary of the Interior, outlining all of the facts in the case and requesting permission to continue the Museum's quarrying operations. Holland also dropped a line to Dr. Smith, head of the U. S. Geological Survey, and Dr. C. D. Walcott, Secretary of the Smithsonian Institution asking them "to put in a laboring oar on our behalf, so that our wishes may be complied with."[3]

During this period Douglass had suggested to Holland in correspondence that there were other people who were anxious to "get into this quarry for awhile," but was so inspecific as to who these persons might be that Holland felt constrained to request further details, himself feeling "That there is 'a nigger in the woodpile somewhere, I am very sure."[4] By December 16, a month after the Department of the Interior had invited the application for a quarrying permit, Holland had still heard nothing further, either from the Secretary of the Interior or from Smith or Walcott and again was wondering if there machinations behind the scenes or "whether the delay is simply due to the fact that we are dealing with large bodies, which traditionally move very slowly."[5]

Actually, in Washington there was some activity relative to the Museum's application. On December 11 Stephen T. Mather, Assistant to the Secretary of the Interior, had written C. D. Walcott to get further information on the Carnegie Museum's operations at the quarry and on "the general policy of granting permits to the individuals or organization to collect on Government ground fossils or other objects that were of scientific rather than commercial value."6

Walcott then approached Dr. Holland and at a New Year's Day meeting obtained information on what the Carnegie Museum had already accomplished in the quarry and what its future plans were, if the quarrying could continue. On the basis of this meeting, Walcott on January 3 recommended to Mather that "it would not only be just but also desirable to permit the Carnegie Museum to continue the excavations which would permit of the removal of the bones already exposed and also to continue the excavations under a permit having a time limit in it."7

Walcott suggested that a form of permit be established which would give any public institution the right to collect in a particular government area for a two-year period, with the right of renewal in two-year periods "provided that the work was carried on in good faith."8 The time limit would make it possible in the future for the U. S. National Museum to move in at the end of a permit period and make collections of its own, were it ever able to obtain sufficient funds (which it certainly did not have at the moment).

Walcott's recommendation obviously proved of considerable value. On January 8, 1916, B. O. Sweeney, an assistant secretary in the Department of the Interior, wrote Holland informing him that

> .....the Carnegie Museum, through its duly authorized representatives, is hereby granted authority, pursuant to the act of June 8, 1906 (34 Stat., 225), and to interdepartmental regulations dated December 28, 1906...to conduct such examinations and excavations and to gather such fossils and objects of scientific interest as it may desire during the year 1916 within the said Dinosaur National Monument. All work under this permit is to be

conducted under the general supervision of the Director of the Carnegie Museum, who shall have the right to designate such persons experienced in archeological research to carry on the work.

"....At the expiration of this permit, the requirements of the regulations above mentioned having been faithfully observed, the Department will favorably consider a renewal thereof, if desired, during the year 1917. At the conclusion of the year 1916, a list describing the specimens collected and the work done and a plat showing the locality from which said specimens were taken should be forwarded to the Secretary of the Smithsonian Institution, and a copy thereof forwarded to this Department for its information and record.[9]

Upon receipt of the permit, Holland hastened to write Douglass on January 12, informing him of the decision and noting that "I wish especially to call your attention to the fact that at the end of the present year we will be required to exhibit a plat, which would be a reduced plan of the quarry, with such extensions as we may make during the present year, showing location of various bones contained therein. This work you will of course carry on as usual; and you also will keep a list of the specimens...."[10]

He went on to say "Everything so far as our work in the quarry is considered is all right now at Washington. It has been explained to me that all of these lands in that immediate vicinity have been withdrawn from occupation because they are supposed to contain coal and phosphate deposits, and that the only way to protect our rights was to withdraw the portion covered by our mineral claim and set it apart as a national monument under the law of 1906."[11]

Holland proved conscientious about preparing the annual reports on the quarry operation for the Smithsonian Institution and about the Carnegie Museum's pursuing the work for which it had received its permits; and occasionally he became peeved at Douglass for failure to expedite the actual fossil excavation. Even before the first year under the permit was up, Holland had to upbraid Douglass for spending more time on road construction than on quarrying:[12]

> The main object, however, for which we are keeping you in the field, you must understand, is the development of the quarry and the rapid extraction from the deposits there of such material there as we need. This is the main business of the Museum in the field, and our tenure of the right to continue the work there will depend upon the speed and the thoroughness with which the work is being done. Judging from the tenor of your letters there has been very little accomplished at the quarry for a series of months past, and while I do not wish to appear fault-finding, I must nevertheless urge you to get to work on the quarry and push forward the enterprise for which we are paying you and your associates....
>
> .....I am very anxious that everything should be accomplished to secure a good representation of what remains in that quarry, but you must understand that permission to continue our work there will depend wholly on the matter in which the work we are doing approves itself to the authorities at Washington. They have in their communications indicated that we can continue from year to year to carry on our work provided the work is prosecuted with vigor. I look to you to see that this is done...."

The progress report for the first year's operation under the special permit was transmitted to Dr. Walcott of the Smithsonian Institution on November 29, 1916, together with a request for a continuation of the permit for the following year.[13] The report was made up of a blue print "showing the progress of the work during the last twelve months" and a list of specimens taken. Holland warned Walcott that inclusion of a complete list of specimens was impossible because the fossils were being quarried within sandstone blocks which were then sent to Pittsburgh and slowly worked apart. Thus, only those remains which had to date been separated from the bedrock could be listed.

Douglass and Holland were united in their conviction that the Carnegie Museum should be permitted to continue its excavation--"We feel that the undertaking we have in hand, upon which we have expended a very large sum of money, is one which we ought to be allowed to prosecute thoroughly, in such a way as to secure the best information[14]--"inasmuch as if the right to continue the work at the point which we have reached is accorded to other parties the result will inevitably be confusion and the separation of parts belonging to one and the same fossil animals...."[15]

Towards the end of each subsequent year, Holland prepared a report for the Smithsonian Institution and the Department of the Interior on the year's work in the quarry, based upon the information transmitted by Douglass. As Holland reiterated in mid-November of 1917, "Our tenure of the spot depends upon our making a renewal of the application for permission to dig there at some time or other in December, at which time I must report with more or less detail the nature of the work which we have done and propose to do."[16] The reports were ordinarily ready for submission in early January, and usually within two weeks the Department of the Interior responded by granting a new permit, in accordance with the terms of the orginal permit of January 8, 1916.[17]

Interestingly enough, after Holland applied for the permit for 1918, he indicated to Douglass that "this will be in my judgment the last year we shall wish to work in the quarry, and I wish the work pushed forward rapidly."[18] Apparently Holland felt at this time that the work was beginning to drag, in part because of lack of help and Douglass's attention to shipping specimens already collected but also because there had been no exciting recent finds. He, of course, changed his mind later, and a permit request for 1919 was placed on January 3, 1919.[19] Indeed, in a letter to Arno B. Cammerer, the acting director of the National Park Service, on December 2, 1919, Holland noted that the Carnegie Museum hoped "to continue our work until we can see with reasonable certainty that it is not desirable from a scientific standpoint to further continue it."[20]

By the end of 1922 the Carnegie Museum finally felt it had taken enough fossil material from the quarry. In December the new director, Douglas Stewart, had a conference with Dr. Walcott about turning the quarry over to the government as soon after January 1 as possible. Stewart was willing to leave the two partially excavated specimens of Diplodocus for the Smithsonian, which had none, and offered to make available Earl Douglass's services for a period not to exceed six months, if the National Museum would pay his salary.[21] Unfortunately, at that moment the Smithsonian found itself still

unable to pursue the quarrying activities, or to hire Douglass, so the Carnegie Museum continued to maintain Douglass and one assistant at the quarry, "not wishing the specimens in the quarry to be a total loss to science."[22]

Thus, after a period of some thirteen years of excavation work in the Morrison outcrop, the Carnegie Museum, which had probably acquired the finest collection of dinosaurs in the world during its decade and a half of exploration in the Uintah Basin, officially relinquished its claim to operate the now famous quarry.

(References Cited)

1 - Letter, A. A. Jones, First Assistant Secretary of the Interior, to Douglass, November 16, 1915, No. D-25353. Douglass correspondence.

2 - Ibid.

3 - Letter, Holland to Douglass, December 10, 1915. Douglass correspondence.

4 - Letter, Holland to Douglass, December 13, 1915. Douglass correspondence.

5 - Letter, Holland to Douglass, December 16, 1915. Douglass correspondence.

6 - Letter, Walcott to Mathor, January 3, 1916. Nat. Archives File 580, Dinosaur.

7 - Ibid.

8 - Ibid.

9 - Letter, Sweeney to Holland, January 8, 1916. Nat. Archives File 580, Dinosaur.

10 - Letter, Holland to Douglass, January 12, 1916. Douglass correspondence.

11 - Ibid.

12 - Letter, Holland to Douglass, April 3, 1916. Douglass correspondence.

13 - Letter, Holland to Walcott, November 29, 1916. Douglass correspondence.

14 - Ibid.

15 - Ibid.

16 - Letter, Holland to Douglass, November 14, 1917. Douglass correspondence.

17 - For example, Holland's reports were transmitted on January 5, 1918, January 3, 1919, January 14, 1920, January 17, 1922; the permit was granted respectively on January 24, 1918, February 7, 1919, January 26, 1920, January 14, 1921, and January 31, 1922.

18 - Letter, Holland to Douglass, January 7, 1918. Douglass correspondence.

19 - Letter, Holland to Hopkins, January 3, 1919. Douglass correspondence.

20 - Letter, Holland to Cammerer, December 2, 1919. Nat. Archives File 580, Dinosaur.

21 - Letter, Stewart to Cammerer, March 5, 1923. Nat. Archives File 580, Dinosaur.

22 - Ibid.

The Carnegie Museum Placer Claim (5)

In order to obtain possession of the quarry site from the U. S. Land Office, Earl Douglass, on behalf of the Carnegie Museum, filed a placer claim on April 5, 1913, at the Vernal Land Office "for deposits of fossil remains of dinosaurs and other prehistoric animals".[1] This claim, known as the Carnegie Museum Placer Claim, Mineral Entry No. 04764, Survey No. 6206, embraced unsurveyed land conforming to the NE¼, SW¼ and NW¼, Sec. 26, T 4[illegible]S, R 23 E, Salt Lake Meridian.[2]

The Commissioner of the General Land Office in Washington decided that such deposits were not subject to mining location and notified Douglass by registered letter of July 24, 1913, that the mineral entry would be cancelled, subject to appeal to the Secretary of the Interior.[3] Douglass received this discouraging communication on September 16, 1913, and did appeal to the Secretary; but by mid-November the Vernal branch of the Land Office still had no information on the success of the appeal.[4]

Finally, almost two years later, on August 6, 1915, the Department of the Interior upheld the General Land Office's decision, emphasizing that fossil deposits were not subject to mining location.[5]

Upon learning of the denial, Carnegie Museum Director Holland telegraphed Douglass's attorney in Vernal, Thomas W. O'Donnell, on September 16: "Take necessary steps at once to secure re-opening of our case, and reverse of decision of Assistant Secretary. The time is short, act quickly."[6]

O'Donnell immediately and diligently went to work on a motion for re-hearing and two days later sent a completed copy off to Douglass, one "in which I may be pardoned for taking some considerable satisfaction".[7] This motion included two specifications of error:[8]

"(1) That the Secretary erred, in holding that the character of the deposit here claimed is not mineral, within the meaning of the mining laws.

(2) That the Secretary erred, in holding that the mineral was not such a substance as possesses an economic value for use in the sciences."

Several persuasive views were advanced in the lengthy motion: "The controlling factor herein in this case, and in determining the question of whether or not this claim is such as to be subject to patent, is not whether the mineral therein contained is within the 'present' meaning of the mining laws, but whether or not its mineral elements are such as to be susceptible of being extracted and possessing an economic value for use in the sciences (as found under subdivision 'C' of the Secretary's decision given)." We take it from the application made for patent herein, and on file, and from the fact that fossils of dinosaurs and other prehistoric animals are being mined here and elsewhere in the country, the Secretary will take judicial notice of the fact that such fossils are of a mineral substance, and possess all of the characteristics chemical and otherwise, sufficient to designate and classify them as mineral..." "....the said fossils are not being made the subject of barter and sale, but are being mined, preserved and restored for the benefit and advantage of science, and their usefulness and economic value comes clearly within the premises set forth in subdivision 'C' of Section 98 (heretofore quoted)." "We are convinced that this claim possesses mineral deposits in the nature of mineral fossils, in sufficient quantity to justify its development; that it is land which is 'chiefly valuable' for other than agricultural purposes, and that as such land it is chiefly valuable for its deposits of a mineral character, which are useful in the interests of and to the advantage of science...."

O'Donnel expressed confidence, based upon his careful survey of pertinent legal literature, that the claim should be subject to patent and that the Secretary would grant the motion.[9] But despite O'Donnell's optimism, the motion for rehearing was denied on November 16, 1915, and on November 29 the Assistant Commissioner of the General Land Office sent notice to the Vernal Land Office that the entry was thereby cancelled, the case closed, and interested parties should be notified by ordinary mail.[10] Meanwhile, as will be seen, Dinosaur National Monument had been created by presidential proclamation on October 4.

(References Cited)

1 - Letter, Assistant Commissioner, U. S. Land Office, Washington, to Register and Receiver, Vernal, Utah (Reference: Vernal 04764 "W" CWF), Nov. 29, 1915. Douglass correspondence.

2 - Letter, A. A. Jones, First Ass't. Secretary, U. S. Dept. Interior, to Commissioner of the General Land Office (Letter D-25353), Aug. 6, 1915. Nat. Archives File 500, Dinosaur.

3 - U. S. Land Office letter, Nov. 29, 1915, op. cit.

4 - Letter, Charles DeMoisy, U. S. Land Office, Vernal, to Douglass at Pittsburgh, Nov. 10, 1913. Douglass correspondence.

5 - Jones letter, Aug. 6, 1915, op. cit.

6 - Letter, Thomas O'Donnell, Vernal, to Douglass, Sept. 18, 1915. Douglass correspondence.

7 - Ibid.

8 - Motion for re-hearing, Earl Douglass to Secretary of the Interior, Aug. 6, 1915. Copy. Douglass correspondence.

9 - O'Donnell letter, Sept. 18, 1915, op. cit.

10 - U. S. Land Office letter, Nov. 29, 1915, op. cit.

The University of Utah and the Dinosaur Quarry (6)

In 1908, while Douglass was searching for dinosaur remains in the Uintah Basin, the University of Utah and Utah State Museum had had expeditions out exploring the natural bridges country of southern Utah and looking for cliff dwellings. Their apparent interest in dinosaurs at this time was limited to plaster casts on exhibit in the museum; but it still seemed strange to the editor of the Vernal Express that Utah showed no desire to replace these casts with real fossils.[1]

As time went by, however, and the quarrying operations of the Carnegie Museum became more productive, the University of Utah's interest in the dinosaur remains increased. By the time the area was set aside as a national monument in 1915, the University, especially through Dr. Peck of the Geology Department, was vigorously agitating to obtain permission to retain some of the fossils for the state of Utah, or, indeed, take over the quarry.

Obviously, Douglass, on the scene, was aware of the increasing pressure from "outsiders" and alerted Holland on several occasions by letter towards the end of 1915 that "there are other people who would like to get into this quarry for awhile."[2] Although Douglass undoubtedly was referring to University of Utah personnel, he made no specific accusations, leading Holland to comment "....I think I ought to have more definite information than a mere assertion that you guess and think you know who are those designing parties whose machinations against our institution and activities I may have to meet. You leave me completely in the dark."[3]

In 1916 Dr. Peck carried his campaign to the Utah newspapers, hoping to obtain sentiment in favor of the passage of a bill by the state legislature "prohibiting the shipment of the remains found in this monument outside of the state."[4] By this time it was clear to Holland who was behind the move to oust the Carnegie Museum from the dinosaur quarry. In a note of December 2, 1916, to Douglass, he snorted ....Why don't the people in Utah get to work & dig out some of their own fossils, & not quarrel with the others who are more enterprising than themselves?"[5] A comment by the General Land Office mineral inspector

in Salt Lake City was probably more to the point: "....It would be unfortunate to in any way interfere with the operations of Dr. Douglas and the Carnegie Institute for the reason that it is one of the few institutions of the country that are able to carry on a work of this kind. The University of Utah or any institution therein have neither the funds nor the scientific men available to carry out this work to an end which will benefit the scientific knowledge of the country at large."[6]

Nothing came immediately of the Utah campaign, and the Carnegie Museum continued its excavation work under Douglass's leadership. Douglass's ties with the University of Utah increased, however, during this period; and in late November of 1917 he was given permission to teach an extension course "in zoological problems of what is known in the catalogue as Zoology 11, carrying two credit hours."[7] This closer relationship of Douglass's with the University, coming at a time when the Carnegie Museum first expressed the opinion to Douglass that its interest in the quarry was diminishing, may have laid the groundwork for a renewed interest in 1919 by Dr. Pack in the operation of the quarry.

On November 6, 1919, Pack wrote U. S. Senator Reed Smoot:[8]

> I am informed that the Carnegie people have obtained just about all the material they need and are about to abandon the quarry, or will do so in the near future.....
>
> Now, just as soon as the Carnegie people are through with their work we are anxious to get permission to do some excavating for ourselves. If we do not take the matter in hand at present we are fearful that one or more of several undesirable things might happen. The Government might permit the Monument to go back to the public domain, in which case the fossils would be removed by vandals or carried away piecemeal by people who are not really interested in them. Or the Government might give some other institution permission to work the quarry.
>
> These materials naturally belong to Utah first, and the University is anxious to get some of them. I am going to ask you if you will kindly take this matter up with Dr. Walcott and explain to him that the University of Utah is anxious to follow up the excavating just as soon as the Carnegie people are through, and that at the proper time, whenever that may arrive, we will be anxious to make formal application.

Senator Smoot apparently referred the matter to the National Park Service, and its acting director, Arno B. Cammerer, wrote Holland on November 25, 1919, to ascertain if indeed the Carnegie Museum were thinking of giving up its activities. Holland was taken by surpri[illegible] by the communication and hastened to reply.[9]

> .....I do not know in what way Senator Smoot or the authorities of the University of Utah have learned that we are about to abandon it, or will do so in the near future. So far as I am aware no communication whatever has been received from this office - the only place where a definite decision in this matter can be made - and Mr. Douglass, my representative on the ground, has not intimated to me in anything he has written that he has given out such information.
>
> Of course this Museum does not propose indefinitely and forever to continue deepening this quarry, which now represents a formidable outlay of time and money, we having expended in developing it already more than [illegible] hundred thousand dollars. We shall eventually, no doubt, wish to desist, especially as the work is becoming increasingly difficult and expensive, but that time has not yet arrived. There are no parties to whom we would be more ready to turn over the work than to the authorities of Utah University, provided they can give assurance that the work will be done in a highly scientific and thorough manner. I, however, frankly state that from my knowledge of the territory I do not see why these friends of science are turning their eyes especially on this spot, as I am aware that there are scores of other localities in that general region which are likely to prove just as productive as this one, and which probably are not so expensive to work. The reason probably is the fact that we have succeeded [illegible] and they have not taken the trouble to look about to see whether there are other localities equally favorable for exploitation.....If our friends in Utah are really anxious to add to the sum of human knowledge, I could very readily point out to them a number of locations where they would undoubtedly be able to do just as good work as has been done here, but they must be prepared to put tens of thousands of dollars into it. Such undertakings are necessarily enormously expensive, if carried out in a truly scientific manner.

In the late fall of 1921 the rumor again spread through the Uintah Basin that the Carnegie Museum was about to abandon the quarry operations.[10] It is suggestive that this rumor might advertently or inadvertently have been disseminated by Douglass and was based upon periodic comments from Holland that the excavating couldn't go on forever.[11] On the other hand, any one of several men working at the quarry could have fostered the story.

At any rate, the National Park Service had been receiving letters from people in Vernal suggesting that "the Carnegie Museum is about to abandon its work in the quarry."[12]

This correspondence was passed on to Holland for his comment; and comment he did, to Douglass: "While I have intimated to you in times past that you need not expect that this work would be continued indefinitely and forever I have not yet authorized you or anybody else to say that the Carnegie Museum is about to abandon this work. It will be time enough to speak of an abandonment of the work when I have notified you formally that the work shall be abandoned."[13]

Dr. Peck of the University of Utah renewed correspondence with Douglass in the spring of 1922, ostensibly to commend him for being willing to teach some local geology courses for the University but going on to say "...It is one of my fondest hopes that some time in the future the University of Utah may be able to procure one of these fossils but I am certain that we can hope for your assistance in this matter whenever the time arrives."[14]

During that summer, the Carnegie Museum, not entirely satisfied with Douglass's progress at the quarry and other aspects of his field operation, decided to send Peterson and Coggeshall of the Museum out on a visit; and they arrived by rail on August 17 for a reconnaissance.[15] Stewart had suggested to Douglass that "after they have gone over the ground with you I would like to have a report from each of you gentlemen as to the best policy to pursue in the work. I am sending with Mr. Coggeshall a moving picture camera as I think that if there is any possibility of closing up the quarry we should have a pictorial record of the work being done...."[16]

By now Douglass could not help but anticipate an early abandonment of the quarry by the Carnegie Museum, and consequently he was moved to write Dr. Peck on September 25, 1922, "a private, personal letter to you and wholly unofficial." In this letter he stated:[17]

> .....it will undoubtedly be of some benefit to you to know what is in the air so you can be prepared to take advantage of it if the wind should blow that way as it may do soon.
>
> I believe that I told you that when the time arrived that the Carnegie Museum should discontinue work at the quarry I would try to help you to get

a skeleton. It was my idea that the museum would work up to a definite line and then if affairs were organized and arrangements completed a party could begin excavating with the object of getting a Dinosaur for the state....

.....the new director of the museum would be glad to have one of the above-named skeletons remain in the state provided that it would be properly taken care of and would be made available for exhibition and comparative study. I, of course have nothing to say at present as to part compensation for a share of the large expense of excavating to uncover these skeletons but I am sure the museum would be very fair in this respect. As the skeletons are already found and partly uncovered it would be a saving of many hundreds of dollars, if not thousands, to you.

As this is a national monument the arrangement would involve a three-sided agreement of the authorities of the Carnegie Museum, representatives of the University of Utah or others who may be designated, and the Secretary of the Smithsonian Institution, who, I believe represents "the government" in the matter.

I write to you early, and thus privately, that you may be forewarned and perhaps be better ready to avail yourself of the opportunity if it is offered. There are other museums, like the U. S. National Museum, the American Museum of Natural History etc. which undoubtedly desires a skeleton of one of these large Dinosaurs but whether or not they would be forthcoming with the funds I cannot say.

As soon as there is an official offer, or sooner, I wish to urge upon you the desirability if not the necessity of your making a trip to the quarry accompanied by such men as you think best so that you may see things for yourself and be better able to make plans. I assure you that we would be glad to see you here at any time.

Pack's reply, dated October 5, said in part "Permit me to thank you very kindly for your unofficial letter of September 25. Friends such as you are few and far between.... Personally and as an offer of the University of Utah I wish to thank you for the interesting information which your letter contains. We shall wait with some impatience the proposal which you think may be made to us and try to be prepared to accept it when it comes."[18]

Two weeks later Stewart urged Douglass to "endeavor to have everything cleaned up and ready for shipment about January 1, 1923. In regard to the two skeletons of Diplodocus, as I wrote you before, I will take this matter up with the Secretary Walcott of the Smithsonian Institution and endeavor to find out what disposition he thinks should be made of the quarry..."[19]

Again Douglass passed on a heartening interpretation to Pack: "Our Director will see Dr. Chas. D. Walcott, or expects to, before the end of October. Our museum is undoubtedly willing that you shall have a Dinosaur if it can be arranged with Walcott. Though the Director himself did not say so definitely, that is my understanding and belief. I consider Dr. Walcott a very liberal and broad-minded man and I feel that he will decide in a fair manner....I am still hoping that if forthcoming reports are favorable you can come and see the conditions yourself. If not I will represent the thing as faithfully as I can. I will let you know as soon as possible."[20] Apparently, however, the U. S. National Museum was becoming interested in obtaining dinosaur skeletons for itself, rather than letting some other institution into the quarry;[21] and Douglass in mid-December was forced to admit to Pack that, based upon information in a letter from Stewart, "The Government evidently does not look favorably on the proposition of Utah...to take over this quarry when we leave it..."[22]

On February 17, 1925, the story of the impending closure of the dinosaur quarry by the Carnegie Museum hit the Salt Lake City Tribune. On the same day, a representative of the Salt Lake Chamber of Commerce wrote Douglass about the possibility of obtaining a dinosaur skeleton for exhibit at the Utah state capitol.[23] Douglass replied that the disposition of the quarry was dependent upon the outcome of the bill before Congress asking funds to permit the U. S. National Museum to assume the excavating. If the bill did not pass, Douglass thought that perhaps the state could obtain a collecting permit; and he hoped that "possibly it could be arranged so that I could help get things started and have general oversight as consulting engineer etc...."[24]

Then U. S. Representative Don B. Colton of Vernal wrote Secretary of the Interior Albert B. Fall, emphasizing that "my own State is very anxious to secure one of these fossils for exhibition in our State Capitol... Will you kindly advise me....whether it would be possible for the State to be given permission to immediately remove one of the fossils to the State Capitol in Salt Lake City, Utah?"[25]

The National Park Service was also experiencing similar pressure from Utah residents and finally through Cammerer wrote the Carnegie Museum for a clarification of its position with respect to the quarry, appreciating that the U. S. National Museum was financially unable to carry on the work.[26] Stewart averred that "There is still a wealth of material there and it is my opinion that the government, and not the State of Utah, should have first claim upon it. I am certain that Dr. Walcott will agree with me in this opinion. If an attempt should be made to remove these fossils from the rock by men unfamiliar with the work I am afraid the result would be very disasterous."[27] This same opinion Stewart made clear to Douglass in a note of March 8.[28] The National Park Service, on the other hand, was apparently agreeable to letting the University of Utah move into the quarry and would have been willing to see this done immediately (in early March), until a conference with Ravenel of the Smithsonian Institution temporarily discouraged the move.[29]

At this same time Senator Reed Smoot, chairman of the Committee on Public Lands and Surveys, moved into the picture again. He had received a letter from Dr. Pack, urging him to communicate with Walcott on behalf of the University of Utah, and had received a telegram in a similar vein from the governor of Utah.[30] This he did in a letter of March 7.[31]

In reply to Smoot's epistle, Walcott offered the following suggestion:[32]

> We are still hampered through lack of funds and I will, therefore, MAKE THE FOLLOWING PROPOSITION. As you are probably well aware, work of this kind requires great care and skill on the part of specially trained workmen, and there are but few in the country qualified to undertake it satisfactorily. Not knowing what facilities the University of Utah may have it occurs to me that this work might be jointly undertaken by this Institution and that University. If Dr. Pack could raise the necessary funds we would put our Mr. Gilmore, who is one of the most highly trained men in the country, into the field to supervise the work with the understanding that each party would receive a fair proportion of the resulting material. I wish specially to impress upon you the necessity of having the work done only under the direction of one fully qualified.

As things worked out. Dr. Gilmore did go out to the dinosaur quarry during

the summer of 1923 on behalf of the Smithsonian Institution, but there was no cooperation with the University of Utah at this time. Pack had felt by the end of April, 1923, that the cooperative arrangement proposed would materialize, but he expressed a preference that Douglass, not Gilmore, be permitted to work with the university.[33] Apparently Utah and the Smithsonian were unable to agree on this point, or perhaps on financial support for the operations, and consequently on May 8 the Department of the Interior granted quarrying permission only to the U.S. National Museum for "the remainder of the present calendar year"[34] (see Chapter , "The U. S. National Museum and the Dinosaur Quarry").

Rather naturally Douglass and Pack continued to be interested in joint access to the quarry. During the summer the two kept in close contact, and Douglass suggested that Pack approach Gilmore to see how much of the dinosaur being excavated would be removed by the U. S. National Museum.[35] If enough were left, the University of Utah might still have a chance at profitable excavation. Douglass felt certain that the Carnegie Museum would make available his experienced services to Utah, if necessary, but didn't want Pack to publicize Douglass's role in the enterprise, inasmuch as the Carnegie Museum had not looked with favor on the University's participation in the quarrying.[36]

Stewart at the Carnegie Museum got the impression by the end of July that the University of Utah had received permission from the government to start quarrying as soon as Gilmore was finished, and that the University wished to take advantage of Douglass's and Kay's services. Stewart wrote Douglass that the museum would be glad to grant him a leave of absence to work for Utah, although Kay's services could not be spared, since he was to be called back to Pittsburgh.[37] In this letter, by the way, Stewart tried to allay Douglass's fear that the Museum was planning to curtail all of its paleontological field collecting and that thus Douglass might find himself without a job.

Upon learning from Gilmore that he would complete his tour in the quarry by the first of September, Pack hastened on August 11 to request permission of

the Department of the Interior for the University of Utah to extract one or two fossils from the quarry, the work to be carried out "under the supervision of perhaps one of the best experts in America," namely Douglass.[38]

On August 28, 1923, E. C. Finney made the following reply to Pack:[39]

> The Secretary of the Smithsonian Institution, in accordance with the interdepartmental regulations of December 8, 1906, has recommended the granting of your request, and accordingly there is hereby granted the University of Utah, pursuant to the act of June 8, 1906, authority to conduct excavations and gather such fossils and objects of scientific interest as it may desire for the period of one year from the date hereof within the Dinosaur National Monument. All work under this permit to be conducted by persons experienced in archaeological research and who can satisfactorily supervise the work herein authorized. At the termination of this permit a detailed report should be submitted to the Secretary of the Smithsonian Institution for his information, and a copy thereof forwarded to the Department for its information.

The Carnegie Museum was still in the dark in October about Douglass's plans with respect to the University of Utah's quarrying operations, since Stewart had heard neither from Douglass nor from Utah.[40] By the end of that month, however, Douglass had finally written to notify Stewart that he anticipated working only part time for the University, overseeing the excavation, since he still had some odds and ends to take care of for the Museum.[41] He later suggested that the Carnegie Museum continue him on its payroll as a full-time employee, but Stewart objected to this and suggested instead that Douglass be put on a leave-of-absence-without-pay status as soon as he commenced working for Utah and until he was through working for that institution.[42]

A week before he received this recommendation from Stewart, Douglass and his crew, on November 7, had begun the removal of the first dinosaur skeleton for the University of Utah,[43] with Dr. Pack and the president of the University on hand.[44] Portions of this skeleton, No. 240, had already been removed by the U. S. National Museum, and Douglass was quite frank in his disgust with that organization and its mode of operation: "It is only a matter of business to state that the wholly selfish, scientifically unethical and contemptuous attitude toward others exhibited by the latter, will cost the state many

hundreds of dollars and will be of little benefit to themselves....."[45]

The University of Utah, under the supervision of Douglass, was to continue its quarrying activities until the end of August, 1924.[46] Back in March, however, after partially excavating three fossils, the University of Utah had almost had to conclude its work because of financial difficulties. During that month, however, Pack approached both the governor and the Salt Lake Commercial Club for support to dig out one of the giant dinosaur remains and finally in early April was able to telephone Douglass and give him the good news that the needed support was forthcoming.[47]

During the first few months of the University of Utah's operation, Douglass spent quite a bit of his time in actual supervision, with a crew made up of LeRoy Kay's father, Golden, Mr. York, Milo Snow, and Wayne Snow. Also, Douglass's son Cavin was helping out (until he "smashed a finger between a rock and the car"), and Douglass's wife Pearl was keeping house for the men.[48] From April on, Douglass turned most of the supervision over to Golden York, while he began carrying out geological work for the A. E. Humphries Company in the Uintah Basin.[49]

Stewart was glad to grant Douglass an additional leave of absence for the summer of 1924, since the Carnegie Museum had planned no field work for that period.[50] What Douglass would be doing the following winter was not certain, but Douglass felt that perhaps he and Golden York might be working at the University on some of the collected fossils, although he was reluctant to leave the field.[51] Even Pearl was optimistic about Douglass's possible relationship with the University, commenting in a letter to her husband from Huntington Beach, California, where she had gone for her health, "....I am going to prophesy that you will eventually be connected with the U. of U. and of course, our future home will be in Salt Lake City. Now we will see how near I come to it."[52]

In actuality, Douglass did not spend the winter of 1924-25 in Salt Lake City but rather in California with his wife and son. However, by [illegible] mid-summer of 1925 he was back in Utah, "working day and night" at the Dinosaur

Laboratory of the University of Utah and giving popular lectures on the dinosaurs on the side.[53]

From this time on, neither Douglass nor the University of Utah were to play an active role in the operations at the dinosaur quarry near [redacted] Jensen. However, as Douglass noted, during the University's brief period of excavation it had gotten "out the choicest collection of morrison fossils in the world— at least that is the way it seems to me now. They are pretty 'tickled' over it too."[54]

(References Cited)

1 - Vernal Express, November 19, 1909: "Does the Deseret Museum Want Any Fossils"

2 - Letter, Holland to Douglass, December 13, 1915. Douglass correspondence.

3 - Ibid.

4 - Letter, Harman, Mineral Inspector, General Land Office, Salt Lake City, to Commissioner, General Land Office, December 13, 1916. Nat. Archives File 580, Dinosaur.

5 - Letter, Holland to Douglass, December 2, 1916. Douglass correspondence.

6 - Letter, Harman to Commissioner, General Land Office, op. cit.

7 - Letter, A. C. Carrington, acting director, University of Utah Extension Division, November 28, 1917. Douglass correspondence.

8 - Letter, Pack to Smoot, November 6, 1919. Nat. Archives File 580, Dinosaur.

9 - Letter, Holland to Cammerer, December 2, 1919. Nat. Archives File 580, Dinosaur.

10 - Letter, William M. Anderson, secretary, Vernal Commercial Club, to National Park Service, November 1, 1921. Nat. Archives File 580, Dinosaur. - "...I am informed that in all probability the Carnegie people will discontinue work there soon...."

11 - For example, in a letter of June 7, 1920, Holland wrote Douglass: "As I told you several years ago, this work at the so-called 'Dinosaur Monument' cannot be continued forever by us, and we ought to work strenuously while it is day, and then the place ought to be abandoned and turned back to the public domain...." Letter, Holland to Douglass, June 7, 1920. Douglass correspondence.

12 - Letter, Holland to Douglass, November 30, 1921. Douglass correspondence.

13 - Ibid.

14 - Letter, Pack to Douglass, April 1, 1922. Douglass correspondence.

15 - Letter, Coggeshall to Douglass, August 3, 1922. Douglass correspondence.

16 - Letter, Stewart to Douglass, July 8, 1922. Douglass correspondence.

17 - Letter, Douglass to Pack, September 25, 1922. Douglass correspondence.

18 - Letter, Pack to Douglass, October 5, 1922. Douglass correspondence.

19 - Letter, Stewart to Douglass, October 17, 1922. Douglass correspondence.

20 - Letter, Douglass to Pack, October 23, 1922. Douglass correspondence.

21 - Letter, Douglass to Pack, December 13, 1922. Douglass correspondence.

22 - Letter, Stewart to Douglass, November 7, 1922. Douglass correspondence.

23 - Letter, R. S. Collett to Douglass, February 17, 1923. Douglass correspondence.

24 - Letter, Douglass to Collett, February 21, 1923. Douglass correspondence.

25 - Letter, Colton to Fall, February 26, 1923. Nat. Archives File 580, Dinosaur.

26 - Letter, Stewart to Cammerer, March 5, 1923. Nat. Archives File 580, Dinosaur.

27 - Ibid.

28 - Letter, Stewart to Douglass, March 8, 1923. Douglass correspondence.

29 - Letter, Cammerer to Finney, March 7, 1923. Nat. Archives File 580, Dinosaur.

30 - Letter, Smoot to Walcott, March 7, 1923. Nat. Archives File 580, Dinosaur.

31 - Ibid.

32 - Letter, Walcott to Smoot, March 20, 1923. Nat. Archives File 580, Dinosaur.

33 - Letter, Pack to Douglass, April 25, 1923. Douglass correspondence. - "In case such permission is given to us, I am wondering if it would be possible for us to secure your services in overseeing the extraction of the material. The authorities at Washington have suggested that they and we jointly work the quarry under the direction of a man whom they have named but it seems to me that it would be far wiser for you to conduct the work provided you are in a position to do so....."

34 - Letter, Hubert Work, Secretary of the Interior, to Walcott, May 8, 1923. Nat. Archives File 580, Dinosaur.

35 - Letter, Douglass to Pack, July 10, 1923. Douglass correspondence.

36 - Ibid. - "....I trust, however in your skill and tact in keeping Mr. Kay and myself in the background....for the present..."

37 - Letter, Stewart to Douglass, July 30, 1923. Douglass correspondence.

38 - Letter, Pack to Work, August 11, 1923. Nat. Archives File 580, Dinosaur.

39 - Letter, Finney to Pack, August 28, 1923. Nat. Archives File 580, Dinosaur.

40 -Letter, Stewart to Douglass, October 4, 1923. Douglass correspondence.

41 -Letter, Douglass to Stewart, October 26, 1923. Douglass correspondence.

42 - Letter, Stewart to Douglass, November 15, 1923. Douglass correspondence.

43 - Letter, Douglass to Stewart, November 15, 1923. Douglass correspondence.

44 - Letter, Douglass to Kay, November 3, 1923. Douglass correspondence.

45 - Letter, Douglass to Stewart, November 15, 1923. Douglass correspondence.

46 - Letter, Douglass to Mather, August 17, 1924. Nat Archives File 580, Dinosaur, - "....They are now finishing their work. It only remains to finish boxing. They will undoubtedly be through before the end of this week."

47 - Letter, Douglass to Pearl Douglass, March 26, 1924. Douglass correspondence; Letter, Douglass to L. E. Camomile, editor Salt Lake Mining Review, April 10, 1924. Douglass correspondence. - "...Dr. Pack telephoned me yesterday that they have the money to take up a huge Brontosaurus which we had partly uncoveredand under which we hope to find a neck to go with the body and tail of one which has been taken up...."

48 - Letter, Douglass to LeRoy Kay, December 28, 1923. Douglass correspondence.

49 - Letter, Douglass to Stewart, April 28, 1924. Douglass correspondence.

50 - Letter, Stewart to Douglass, May 8, 1924. Douglass correspondence.

51 -Letter, Douglass to Pearl, August 23, 1924. Douglass correspondence.

52 - Letter, Pearl to Douglass, June 1, 1924. Douglass correspondence.

53 - Letter, Douglass to Ca A. LaGrange at Oakland, California, July 31, 1925. Douglass correspondence.

54 - Letter, Douglass to Pearl, June 28, 1924. Douglass correspondence.

On October 3, 1924, Dr. E. C. Case, Director of the University of Michigan Museum of Geology, made application to the Department of the Interior for permission to undertake a university collecting expedition to Dinosaur National Monument during the summer of 1925.[1] The permit was approved both by Walcott of the Smithsonian Institution and by Mather of the National Park Service, with the recommendation that the permit be for no more than one year.[2] Copies of the final report were to be made available to the Smithsonian, National Park Service, and Department of the Interior. Finney, First Assistant Secretary of the Interior, informed Case on November 4, 1924, that the permit had been granted, with the further stipulation that "all work under this permit is to be conducted by persons experienced in archeological work."[3]

During this time there had been considerable interest in the development of museum exhibits at the quarry, especially an in-place exhibit of dinosaur bones. Arno Cammerer, acting director of the National Park Service, hoped that the University of Michigan might be encouraged to carry out some of the sculpturing, giving "the monument a national museum of a great educational value and of course proper credit would be given those making it possible. Efforts to secure an appropriation from Congress for this work have been so far unsuccessful. If the University of Michigan would be interested in this I would be very pleased to send you such additional data on this project as we have in our files."[4]

Case expressed serious misgivings about the feasibility of developing a sculptured exhibit of fossil remains which would not rapidly deteriorate upon exposure to air. Also, he emphasized that the museum was operating on a very small appropriation from the University, although perhaps more money could be obtained "if we should get some good material."[5] But Cammerer was not discouraged by Case's immediate reaction to the proposal and went on to write

him: "It is estimated that a rough but substantial and attractive housing arrangement making a permanent exhibit could be accomplished for a few thousand dollars. After you have been onthe ground, which I assume you are planning in connection withthe museum's expedition, you will of course have an idea as to the worthwhileness of such a project."[6]

As the University of Michigan's plans finally shaped up, Case expected to spend the three summer months of 1925 working at the quarry.[7] He received permission from the U. S. National Museum and the Carnegie Museum to make use of the tools and other equipment remaining at the quarry and hoped to be able to excavate some representative large dinosaur bones during the brief period of activity,[8] within the limits of a budget of about $1000.[9]

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2 - Letter, Mather to Harvey, October 30, 1924. Nat. Archives File 500, Dinosaur.

3 - Letter, Finney to Case, November 4, 1924. Nat. Archives File 500, Dinosaur.

4 - Letter, Commerer to Case, December 22, 1924. Nat. Archives File 500, Dinosaur.

5 - Letter, Case to Mather, December 26, 1924. Nat. Archives File 500, Dinosaur.

6 - Letter, Commerer to Case, December 30, 1924. Nat. Archives File 500, Dinosaur.

7 - Letter, Douglass to Phil C. Orr, January 27, 1925. Douglass correspondence.

8 - Letter, Case to Douglass, January 13, 1925. Douglass correspondence.

9 - Letter, Commerer to Demaray, March 23, 1925. Nat. Archives File 500, Dinosaur.

THE DINOSAUR MUSEUM - FROM IDEA TO REALITY (8)

I. Overtures: 1909-1924

Few objects of nature are as intriguing to people as dinosaur remains. Small wonder, then, that CONCURRENT WITH THE DEVELOPMENT OF THE Jensen quarry there should have been periodic consideration given to the development of an associated museum. True, the valuable fossils were originally being assembled for eventual exhibition in the far-away Carnegie Museum; but this was of little consolation to those early hardy visitors who made the arduous detour for a first-hand look at an actual dinosaur quarry "...apparently richer and the specimens better preserved than in any similar opening which has been made."[1]

From the very first, Douglass had been interested and involved in showing off the quarry and its contents to visitors, up to 400 a year during the first half-decade of the quarry's operation. Once during these early years Douglass had suggested to Holland of the Carnegie Museum an unusual and prophetic exhibition possibility: "that the skeletons which had been unearthed be mounted in relief on one side of the paleontological hall of the museum in the position in which they had been found in that ancient river bed of Mesozoic times. What a sight it would be! What a study, what suggestions for the exercise of the scientific imagination!"[2]

With the setting aside of the quarry as a national monument in 1915, government officials themselves began to take

a new, though perhaps casual, look at the disposition of the dinosaur fossils. Although the Carnegie Museum was granted permits to continue its excavating and removal of remains, there was thought that some of the skeletal material should be findings its way to the U.S. National Museum, since in essence it now belonged to the public domain. Or even more in keeping with the nature of a national monument, the quarry should be developed into an in-situ educational exhibit!

In a mid-January, 1919, letter to Stephen Mather, then Assistant to the Secretary of the Interior, George Otis Smith, Director of the U.S. Geological Survey, voiced this latter possibility:[3]

> .....The building of a railroad through here would make it possible that the Dinosaur Monument should, if it is not despoiled, become in fact a real monument of great educational and paleontological interest within easy access to the tourist. One can conceive of the impressiveness and instructiveness to the tourist of seeing partly uncovered and, in some cases, protruding from the surfaces and edges of the strata the bones and skeletons of the monsters, lying where they were buried many millions of years ago in deposits of mud and sand which now are mere strata beneath thousands of feet of other beds from which the mountains and mesas of the region have been carved. There is, therefore, reason for the perpetuation of the Dinosaur Monument as a fact rather than a name.

Dr. Smith hoped that the U.S. Geological Survey would be permitted to examine the quarry the following season to ascertain, among other things, "the conditions of the quarry and of the occurrence of the fossils with reference to possible utilization of the spot as asseducational demonstration of the characters

and modes of occurrence of these monstrous skeletons in the strata of the region."[4] Not surprisingly, the far-sighted Mather, together with the Secretary of the Smithsonian Institution, authorized the suggested survey, in part to investigate the feasibility of such an in-situ exhibit.[5]

In June of 1913 Dean E. Winchester of the U.S. Geological Survey visited the quarry and made a detailed report which eventually found its way to Mather. Wrote Winchester: "Before the spot is to attract the average person and attain its maximum value as an educational institution it will be necessary to uncover the bones and protect them both from the action of the elements and from the possibility of destruction at the hands of tourists. Duplicate specimens uncovered during the present work might well be protected and preserved either in situ or in a museum at hand."[6]

The years went by, the Carnegie Museum continued to obtain its annual quarrying permits from the Smithsonian Institution, and Douglass continued to supervise the excavation of the fossils. However, it was becoming evident that the Carnegie Museum's interest in the quarry operation was beginning to wane; and Douglass, much more a part of Utah now than of Pennsylvania, also began to appreciate the possibility of developing the world-famous dinosaur quarry as an educational site in its own right. In 1915, in an article for the Vernal Express entitled "The Dinosaur Quarry - A Prophecy," Douglass enthusiastically looked forward to the time

when a great museum would be built around the exposed dinosaur remains in the quarry, a hotel would be perched atop a nearby ridge, while below ihnthe midst of the irrigated agricultural land there would be a flying field with planes for scenic trips over the adjacent canyon country.[7]

Douglass had also broached the idea of an in-situ museum to Holland at about the same time:[8]

> .....Douglass, who is of a somewhat poetic temperament... wrote to me suggesting that the scene of his immortal l bors ought to be marked by the erection on the ground of a stately edifice in which there should be assembled plaster-casts of the dinosaurs which we have extracted from the spot. This might involve an expenditure at this particular "hole in the ground" of a very formidable sum of money. The vision, as he painted it to me, was a structure like the famous "Walhalla" not far from Munich, which cost the Bavarian Government nearly one half a million to erect.....

In the fall of 1921 the museum idea came up again, spurred by the Vernal Commercial Club with, no doubt, encouragement from Douglass. The Club wrote the National Park Service about possible and desirable protection and development work at the monument, so that the quarry would "be fixed up and a good road constructed in order that the public could go and view the wonders of nature and return in safety and too without having the opportunity of carrying any part of the exhibits away."[9]

In turn, the Park Service wrote Holland asking what he thought about the idea. And Holland minced no words in voicing his opinion about an in-situ museum:[10]

> .....No doubt the erection of such a building would give employment to some of the unemployed in Vernal and might enhance the value of certain acres at present covered with sage-brush in that vicinity. I do not, however, think that the people of the United States would be justified in undertaking any such wild scheme.
>
> When we get done with our work of taking up the bones which we find in the quarry there will be nothing left there, and in my humble judgment, as a citizen of the United States and as a heavy tax-payer, I could think of nothing more scandalous than a proposal to do what has been suggested, unless the method of the "Pork barrel" is to prevail.

Despite lack of enthusiasm from some quarters for the dinosaur museum, the idea was to be kept alive for the next three and a half decades until Douglass's dream was realised. As the Carnegie Museum drew its operations to a close in 1923, Douglass increased his endeavors on behalf of the museum, as did Dr. Peck of the University of Utah, Dr. Walcott of the Smithsonian Institution and Dr. Matthew of the American Museum of Natural History. Civic clubs both in Vernal and Salt Lake City were enthusiastically backing the movement, and there was talk by Congressman Colton of Vernal about preparing a congressional bill to insure the proper development of the monument.

Douglass had refined his thinking about the possible nature of the museum and suggested to the National Park Service that[11]

> The uncovered area should be housed to protect the specimens and provide shelter for sight-seers and students. The north side would be a natural wall, of course, with the skeletons in place. The south side would probably be a natural wall also but the ends would have to be built and a roof with ample sky lights would cover the whole.

> The extra space and the walls could be utilized for many other exhibits from this most interesting geological and paleontological region....
>
> ....At the Monument, if the skeletons are exposed as outlined, one can see the remains as they were buried many millions of years ago. ...here we will be able to better study out the geological history and modes of life. Then too it will arouse in the popular mind many fold the interest that is aroused by seeing a skeleton standing on its feet in a glass cage with artificial walls.... Those who have charge of museums have found that, to most of us, there is far more interest in seeing a skeleton mounted on a slab as it was found than in seeing it stand on its feet.

Meanwhile, in March of 1923 Hubert Work, Secretary of the Interior, while perusing a photograph of the quarry operations, was himself coincidentally struck by the exhibition possibilities at the Monument:[12]

> .....It occurred to me that if the Smithsonian Institution could arrange to have one of these specimens worked out in relief and have it remain in place for the study of scientists, students, and other visitors, the Monument, instead of containing simply a hole in the ground after the quarry is abandoned, would contain one of the most important scientific exhibits in the country. Such an exhibit would be unique.....

He hastened to bring his idea to the attention of C. G. Abbot, Acting Secretary of the Smithsonian Institution, urging that the Smithsonian give the possibility its consideration.[13]

The Board of Governors of the Vernal Chamber of Commerce was interested enough in the venture actually to prepare some cost estimates:[14]

Roof, 40 x 100 feet with 3 skylights,	$1,750.00
End walls of native rock, 16 to 21 feet high (sides of cut will make the side walls)	650.00
Excavating and preparing specimens for exhibit	2,600.00
	$5,000.00

An estimate was also being prepared for an access road. Dr. Pack and Dr. Thomas of the University of Utah were willing to approach Senator Smoot about presenting a bill to Congress on behalf of the museum development.[15] Douglass was intending to write some articles for national magazines to publicize the area, especially an illustrated article which he hoped the National Geographic would publish.[16] And Representative Colton of Vernal impressed the importance of the monument project on Stephen Mather, now volunteering to introduce a bill into Congress for the monument's support, or "....If it is your plan to now abandon it completely, I am sure private citizens will be glad to acquire title to this ground if possible and preserve it as a permanent place to be visited by sightseers..."[17]

The National Park Service was not uninterested in the quarry site at this time but, as usual, was short of funds adequate for proper operation of all the national monuments. Cammerer, acting director, expressed the opinion to Colton that there were other monuments much more seriously in need of funds for protection and development. "The question of vandalism and the necessity of funds for protection is not as acute in the Dinosaur as it is in some twenty of the other national monuments because there is nothing to destroy....."[18] As an alternative source of assistance, Cammerer wondered if the University of Utah could be persuaded to excavate in relief one of the dinosaurs "as part of their educational work?"[19]

Fortunately, Colton was not discouraged; and on May 3, 1924 he introduced House of Representatives Bill 9064 into the 68th Congress:[20]

A BILL

To provide for the protection of the Dinosaur National Monument, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Director of the National Park Service is authorized and directed to properly house for its protection the Dinosaur National Monument near Vernal, Utah, and to excavate from the dinosaur quarry the fossil remains of a dinosaur and to prepare therefrom a specimen for exhibit at such monument. There is authorized to be appropriated out of any money in the Treasury not otherwise appropriated, the sum of $5,000 for such purpose, to be expended under the supervision of the Director of the National Park Service.

The bill was referred to the Committee on the Public Lands and ordered to be printed.

Even after presentation of Colton's bill, Cammerer continued to express misgivings. He felt that before the National Park Service be rushed into such a project, there should be consideration of the possibility of still finding in the quarry, where it could be reasonably exposed, a skeleton worthy of exhibition. The people at Carnegie and the University of Utah should be interrogated; and if the project were to be carried out, the Smithsonian Institution should do the work. Because of his misgivings, Cammerer suggested to Mather that perhaps it was too early, at the end of May, to make a favorable report on the bill.[21]

On June 2 the proposal was presented to the Bureau of the Budget, and the Director of that department advised that "the proposed legislation would be in conflict with the President's financial program."[22] As a result of many conflicts, this bill was never passed by Congress.

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2 - Douglass, Earl. n.d. (ca 1916). The Carnegie Museum Dinosaur Quarry and National Monument. Manuscript, Douglass correspondence.

3 - Letter, Smith to Mather, January 15, 1916. Nat. Archives File 580, Dinosaur.

4 - Ibid.

5 - Letter, Mather to Smith, February 29, 1916. Nat. Archives File 580, Dinosaur.

6 - Report, Winchester to Smith, transmitted to Mather on December 22, 1916. Nat. Archives File 580, Dinosaur.

7 - Vernal Express, December 12, 1919.

8 - Letter, Holland to Cammerer, November 8, 1921. Nat. Archives File 580, Dinosaur.

9 - Letter, William Anderson, secretary, Vernal Commercial Club, November 1, 1921, to National Park Service. Nat. Archives File 580, Dinosaur.

10 - Letter, Holland to Cammerer, November 8, 1921. Nat. Archives File 580, Dinosaur.

11 - Letter, Cammerer to Case, December 30, 1924. Nat. Archives File 580, Dinosaur.

12 - Letter, Work to Abbot, Acting Secretary, Smithsonian Institution, March 16, 1923. Nat. Archives File 580, Dinosaur.

13 - Ibid.

14 - Letter, Charles DeMoisy, Jr., President, Vernal Commercial Club, to Representative Don Colton, March 25, 1924. Nat. Archives File 580, Dinosaur.

15 - Ibid.

16 - "I have foreseen what was coming and have realized what an amazing exhibition could be made at comparatively small expense, so I have prepared an illustrated article and have just recently sent it to the National Geographic Magazine. I am perfectly confident that when the truth is generally known this most interesting and historic piece of ground will not go back to oblivion in a land like ours. Though your time is much occupied I am tempted to send you a copy of the manuscript of this article and I would do it if I had copies of the many & illustrations also. Perhaps I will send it anyway and you can return it at your leisure." - Letter, Douglass to Mather, August 17, 1924. Nat. Archives File 580, Dinosaur.

17 - Letter, Colton to Mather, April 17, 1924. Nat. Archives File 580, Dinosaur.

18 - Letter, Cammerer to Colton, April 18, 1924. Nat. Archives File 580, Dinosaur. Cammerer noted that the current year's budget for administration, protection and maintenance of all 29 national monuments was only $11,750, less than the $12,500 allotted for the previous year.

19 - Ibid.

20 - Nat. Archives File 580, Dinosaur.

21 - Letter, Cammerer to Mather, May 27, 1924. Nat. Archives File 580, Dinosaur.

22 - Letter Demaray to Rep. N. J. Sinnott, Chairman, Committee on Public Lands, June 7, 1924. Nat. Archives File 580, Dinosaur.

II. Interim: 1924-1930

With congressional support of the dinosaur museum project temporarily shelved in mid-1924, Cammerer on behalf on the National Park Service approached Dr. Case of the University of Michigan Geology Museum to see if that organization, in conjunction with its operations at the quarry in 1925, would be interested in sculpturing out some of the remains for exhibition purposes.[1] Case expressed general sympathy with the proposal but only restrained encouragement:[2]

> .....It is also well known to those of us who have been interested in the collection and presentation of such material that it is subject at times to very rapid deterioration when once removed from the matrix or left partially uncovered. I should, personally, from much experience, fear that the work would be in large part wasted, as the action of the elements would soon cause the exposed bones to crack and split, and constant care, only, could keep them in reasonable condition in such an exposed locality. Once exposed the bones would have to be carefully impregnated and even housed to preserve them. I do not know the exact condition of this particular quarry and could make a far better reply after seeing the material. We should be most glad to favor any project which would put the material in a good and permanent condition for exhibition. From the financial point of view this Museum is running upon a very small appropriation from the University; if then we should get some good material it might be worth while to approach the authorities for aid, if the project is continued.

Cammerer anticipated that "...a rough but substantial and attractive housing arrangement making a permanent exhibit" could be developed for only a few thousand dollars.[3] But, even this was, at the moment, beyond the means and interest of the University of Michigan.[4]

During these years many people were sympathetic with the museum idea but no one offered financial support. However, in early 1925 Dr. Pack made a worthwhile suggestion to the National Park Service, namely that when the University of Michigan's permit expired that year, the

Smithsonian Institution be urged to issue no more quarrying permits "....until a decision has been reached as to what can be done during the next two or three years in excising a dinosaur deposit in permanent relief under proper protection and under funds furnished through the efforts of the American Association of Museums."[4]

This idea appealed to Cammerer. He asked that a letter be drafted for transmittal to the Smithsonian Institution and put Pack's suggestions in a file "for reference and consideration should further applications for permits be received for quarrying in the Dinosaur Mon."[5]

In 1926 Vernal residents through Congressman Colton again pushed to obtain favorable legislation for Dinosaur Monument, Colton introducing a bill into the House of Representatives on January 14.[6] This bill differed in wording from the 1924 bill only in that $100,000 rather than $5,000 was being requested.[7] Mather was not optimistic about the success of this bill, which like its predecessor was referred to the Committee on the Public Lands. In the meantime, the Denver Tourist and Publicity Bureau had been invited by the Uintah Club of Vernal to endorse a favorable recommendation by that organization but held off, awaiting further information from the National Park Service.[8]

Douglass, as might be expected, was delighted at the renewed efforts to obtain federal support for the museum. Towards the end of January (1926) he wrote Mather:[9]

> If the museum were an accomplished fact thousands of tourists, and health and pleasure seekers would begin to come here from the time work began and it would become a classic ground for geological study and exploration. Here, by the aid of explanatory maps, diagrams etc. even the average people would be able to get clearly in their minds the fundamental geological principles which are now so mysterious and puzzling to most people.....

> It has seemed to me for years that if a building were built to protect the dinosaurs the many earlier and later, smaller, fossils from the same region and same geological section should be gathered and placed on exhibition in the same building.
>
> What I wish to emphasize is.the evident fact that the main factor of the monument and the surrounding area will be the educational factor.

John Merriam, president of the Carnegie Institution of Washington, was also impressed with the possibilities of an in-situ museum and shared his opinions on the matter with Mather:[10]

> .....This Monument could be made so much more important than any exhibit in a museum that it would rank as an outstanding educational opportunity, not merely in paleontology but in the entire field of geology and history in the wider sense.

Merriam expressed certainty that the committee composed of National Academy of Science geologists, Geological Society of America, and National Research Council would "stand behind an effort to secure the best means for developing this exhibit and the best method of interpreting it."[11] Mather hoped that he, Merriam, and Colton could get together, at a time suggested by Merriam, to "talk over plan of campaign looking to possible preliminary action by Congress."[12]

Another protagonist of the museum development was W. D. Matthew, curator in chief of paleontology at the American Museum of Natural History who had put in a good word to Merriam whom, he felt, could be of great value in influencing the National Park Service to promote the field museum project. Matthew felt that the major pertinent expense would involve improvement of the highways that traversed the Uinta Basin, whereas "the maintenance of a small protected exhibit of the bones in the quarry, some models, etc., proper placarding of the adjacent outcrops, and the services of a curator, would not altogether

cost anything serious."[13] He suggested to Douglass, who at the time was working at the University of Utah, that "the plan needs to be properly formulated with diagrams, maps, sketches, estimates of cost, etc., and if that were done with advise from Merriam I believe it would make a strong appeal, backed by the University, for joint state and national action."[14] Matthew then added that he would be unable to assist in the project inasmuch as he was leaving for Mongolia in a month for a year's stay.

Throughout the spring of 1926 Colton continued to push his bill, with support from groups back in Utah like the Uintah Basin League of Vernal. Douglass likewise continued his encouragement, justifying the museum expenditure in the midst of President Coolidge's economyy drive by pointing out (to Colton) that "it would be put through as the cheapest and most entertaining natural show that the Government has ever provided."[15] Douglass, indeed, wondered if Coolidge might not even be approached personally about the museum venture, since he had once advocated getting Americans "out of doors and really interested in nature."[16]

Colto Colton shared much of his correspondence about the Dinosaur museum with the Park Service officials in Washington. Cammerer on one occasion (January 20, 1927) admitted that "due to the pressure of time on this office, it has never been possible to send a representative to study the situation on the ground,"[17] this after the area had been under Park Service jurisdiction for some dozen years. Cammerer hoped at this time that it would still be possible for a representative of the American Association of Museums to visit Dinosaur during the summer of 1928 and assess museum possibilities there.[18] After such a visit, the Park Service

might be able to approach Congress with a specific plan for development, including some realistic cost estimates. For example, a John Widtsoe of Salt Lake City who had been pushing the museum project felt that $50,000 "would make a suitable beginning,"[19] whereas at the same time Park Service officials felt that the job could be done for much less.[20]

Unfortunately, Congress again failed to act in favor of the monument However, the American Museum of Natural History through Dr. Bumpus had now become interested in the quarry, and for the next few years the museum possibilities were especially to be kept alive by men from this organization, by John Merriam of the Carnegie Institution, by Representative Colton and by the Park Service administrators in Washington.

(References Cited)

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3 - Letter, Cammerer to Case, December 30, 1924. Nat. Archives File 580, Dinosaur.

4 - Letter, Cammerer to Demaray, March 23, 1925. Nat. Archives File 580, Dinosaur.

5 - Ibid.

6 - Letter, Mather to Burhans, January 19, 1926. Nat. Archives File 580, Dinosaur.

7 - House of Representatives Bill 7672, 69th Congress, 1st Session. Nat. Archives File 580, Dinosaur.

8 - Letter, Burhans to Mather, January 14, 1926. Nat. Archives File 580, Dinosaur.

9 - Letter, Douglass to Mather, January 30, 1926, from Salt Lake City. Nat. Archives File 580, Dinosaur.

10 - Letter, Merriam to Mather, February 5, 1926. Nat. Archives File 580, Dinosaur.

11 - Ibid.

12 - Letter, Mather to Merriam, February 3, 1926. Nat. Archives File 580, Dinosaur.

13 - Letter, Matthew to Douglass, February 18, 1926. Nat. Archives File 580, Dinosaur.

14 - Ibid.

15 - Letter, Douglass to Colton, April 21, 1926. Nat. Archives File 580, Dinosaur.

16 - Ibid.

17 - Letter, Cammerer to Colton, January 20, 1927. Nat. Archives File 580, Dinosaur.

18 - Ibid.

19 - Letter, Widtsoe to Colton, December 30, 1926. Nat. Archives File 580, Dinosaur.

20 - Letter, Cammerer to Bumpus, January 20, 1927. Nat. Archives File 580, Dinosaur: "While I personally feel that the amount of $50,000, which he speaks of as necessary to make a suitable beginning, is considerably larger than will be necessary, I am not in a position to comment further on that, because I do not have the facts on which to base it."

The American Museum of Natural History and the Dinosaur Quarry

Although the American Museum of Natural History in New York City had good holdings of dinosaur remains, it is not surprising that this organization, too, should have become interested in the dinosaur quarry near Jensen. In 1930, several years after the Carnegie Museum, the U. S. National Museum, the University of Utah, and the University of Michigan had completed their respective excavations at the quarry, the American Museum officials began working with government personnel with respect to a joint operation of the quarry.

Dr. Dumpus had commented to Horace Albright of the National Park Service on the Museum's interest in the quarry, especially with respect to the development of "an exhibit worth while for the public."[2] Albright then followed up on this interest by recommending to Barnum Brown of the American Museum that a joint conference be arranged to discuss the matter.[2] This conference convened at the American Museum in New York City on December 2, with Dr. H. O. Dumpus, Dr. Frank Cutler, Dr. Barnum Brown, and Dr. Harold C. Bryant, recently appointed Director of Education for the National Park Service, in attendance.[3] As a result of this conference it was agreed that the American Museum would essentially undertake an in-place exhibition of the fossils, together with the associated development of a museum, with the understanding that if a complete skeleton were uncovered, the museum might elect to remove and retain it.[4] Already the American Museum had the tail only of a dinosaur from the quarry, other parts of this specimen, amazingly or distressingly enough, being at three other institutions.

From the operational standpoint, the "American Museum expedition would see to it that a proper relief display was made, that all bones were properly labeled, and in addition would furnish models, charts, and photographs helpful in showing to the visitor the main story which the monument has to tell."[5]

They "might keep three men at work on the matrix for three years, costing, say, $5,000 a year, or a total of $15,000....."[6] As the plans progressed, the American Museum decided that it would want to take one skeleton of each dinosaur form new to science, but those specimens "should be removed in a way not to destroy other specimens. In other words: we would practically complete our laboratory work at the quarry site before removal of specimens."[7]

A three-day meeting was scheduled to start on June 26, 1931, in Utah for a committee made up of Ray E. Dillman, President of the Utah State Senate, Dr. Barnum Brown, Dr. Bumpus, Thomas Vint, chief landscape architect of the National Park Service, and possibly a contractor, to discuss the excavation and museum development.[8] The group which finally convened was actually larger, including in addition to the above Dr. Pack, W. P. Weber, an N.P.S. engineer, Cheney who lived in the Jensen area, Roy Kay representing the Carnegie Museum, Congressman Colton, and Horace Albright; and discussions continued from June 26 through June 28.[9]

With respect to the project, Dr. Bumpus commented "Our object is to develop the dinosaur quarry for the enjoyment and enlightenment of the people. We have been hoping for some time that money would be available for a museum there, but the government has never made large appropriations for work of this kind. I certainly hope that the American Museum of Natural History will see fit to do it."[10] Bolstering Bumpus's hope, Colton interjected a good bit of news into the meetings by announcing that he had been notified that the American Museum would spend $200,000 on a dinosaur museum at the monument.[11]

On October 21, 1931, another conference with Dr. Brown was held, this one probably in Washington, with Brown, Albright, Demaray, and Dr. Atwood present. The actual commitment by the American Museum didn't live up to Colton's pronouncement; but at any rate concrete plans were being laid, as follows:[12]

1. In order to properly prepare the Dinosaur exhibit at Dinosaur National Monument the American Museum proposes to include in its budget $50,000 to be expended over a three year period. This will cover the expenses of five men and operating costs. It is understood that the Park Service will undertake the first part of the excavations and the construction of roads, parking areas, and buildings which will be required to properly handle the public.

2. As soon as excavations begin the American Museum wishes to have one of its men at the monument. The Park Service should notify Dr. Brown as soon as the budget committee acts upon the Dinosaur appropriation.

3. In connection with the American Museum's work at the monument, Dr. Brown was anxious to know whether equipment used by the Park Service would be available for the Museum workers. Mr. Albright indicated that this would be arranged.

Dr. Brown had prepared a report on October 7, 1932, which delineated more details on the proposed operations.[13] "This enterprise is planned with the primary object of obtaining desired complete, uncrushed, dinosaur skeletons for the new Jurassic Dinosaur Hall while developing the Vernal dinosaur quarry as a National Monument - in fact, placing a second American Museum Dinosaur Hall in Utah."

This report, based upon decisions reached at the earlier Utah conference, went on to suggest that:

> $300,000.00, available over a period of three years, will be asked at the next Congress to complete the excavation, build road, custodian houses, and Museum building when relief work is completed. $50,000.00 in to be made available for the excavation and housing work to start in May, 1933.
>
> During this excavation (estimated duration six months) an American Museum representative must be at the quarry - at the end of which time relief work is to start and last over a period of three years - summer and winter.
>
> Custodian houses provided by the Park Service are to be used by American Museum workers during the operation, and compressed air equipment, as well as all other necessary machinery used in excavating, will be available for relief work.
>
> It is estimated that five men provided by the American Museum can complete this work in three years at a total cost not to exceed $50,000.00 and at the same time will prepare all skeletons sent to the American Museum.

This special Museum force can be selected from men experienced at the Vernal Quarry during previous excavations and expenses budgeted as follows:

	per year	3 years
L. C. Ray (in charge of work)	$3,000	$9,000
E. E. Faber (drill expert)	2,000	6,000
R. C. Thorne (drill expert)	2,000	6,000
Assist. driller and mechanic	1,500	4,500
Cook and helper	1,200	3,600
Food $1.00 per day per man	1,825	5,500
Car - heavy duty truck	1,400	1,400
General expenses - supplies R.R. fares, etc.		14,000
		$50,000

The cooperative project by the American Museum of Natural History and the National Park Service now seemed assured. However, by the turn of the year the situation did not appear as optimistic. Colton was hoping that a bill would be approved by Congress which would provide at least $25,000 for starting the excavation work; but this was contingent upon the willingness of the American Museum to fulfill its part of the bargain.[14] And the American Museum trustees had just met and were "loath at this time to assume an obligation of that magnitude."[15] They had not actually turned down the cooperative program but felt that "plainly the money is not in sight on the part of the American Museum."[16] This, of course, was at the height of the great depression. Dr. Sherwood of the American Museum queried Dr. Brown about the appropriateness of approaching the John D. Rockefeller, Jr., "with a view of securing funds from him to carry on this work."[17] But Dr. Bryant recommended against this alternative.[18]

During January of 1932 the congressional appropriation committee "refused to consider the suggested appropriation owing to the necessity for an economy program."[19] Realistically, Dr. Bryant of the National Park Service recognized that for the American Museum and the Park Service it would "be necessary to plan for the future rather than for the present."[20]

Dr. Brown was to keep in close touch with N.P.S. officials during the decade of the 1930's. Mr. F. Trubee Davison, new president of the American Museum in 1933, expressed sympathy for the plans at Dinosaur;[21] but the Museum

still had no funds available. This situation still existed in mid-1936, but at this time arrangements were made to employ Dr. Brown under federal funds as a consultant at the rate of $10 per day ("the consultant to pay all travel expenses") for a period of three weeks, during which period he would visit the quarry "and report upon the present status and recommend a method for completion of the project."[22] Excavation at the quarry, by the way, had been going on for several years with government relief crews under the direction of Dr. A. C. Doyle (see pertinent chapters). Brown was at the quarry from September 2 through 6, 1936, and as a result of his visit he recommended concentration of all working personnel on the main cut[23] and expressed the hope that he could raise the money and supervise the final development of the in-situ exhibit.[24]

The mutual plans which the American Museum of Natural History and the National Park Service had talked over and cherished during the 1930's never materialized under these joint auspices. The grandiose in-place museum exhibit and interpretive center were eventually, of course, to be developed by the National Park Service itself, two decades later; and scientists of the American Museum of Natural History were to continue their personal interest in the quarry and make their personal contributions up to the present time.

(References as Cited)

1 - Letter, Albright to Brown, November 22, 1930. Nat. Archives File 580, Dinosaur.

2 - Ibid.

3 - Letter, Bryant to Albright, December 6, 1930. Nat. Archives File 580, Dinosaur.

4 - Letter, Dumpus to Pack, December 13, 1930. Nat. Archives File 580, Dinosaur.

5 - Letter, Bryant to Albright, December 8, 1930. Nat. Archives File 580, Dinosaur.

6 - Letter, Dumpus to Pack, December 13, 1930. Nat. Archives File 580, Dinosaur.

7 - Letter, Brown to Colton, February 6, 1931. Nat. Archives File 580, Dinosaur.

8 - Letter, Albright to Vint, May 14, 1931. Nat. Archives File 580, Dinosaur.

9 - Letter, Dumpus to Albright, June 29, 1931. Nat. Archives File 580, Dinosaur.

10 - Vernal Express, July 2, 1931.

11 - Ibid. It may well be that the newspaper reporter misinterpreted Colton's comment.

12 - Conference memorandum, October 21, 1931. Nat. Archives File 580, Dinosaur.

13 - Report: "Special Work of the American Museum in Utah 1932-35" by Barnum Brown, October 7, 1935. Nat. Archives File 580, Dinosaur.

14 - Letter, Brown to Dumpus, January 25, 1932. Nat. Archives File 580, Dinosaur.

15 - Ibid.

16 - Ibid.

17 - Notation by Bryant on Letter, Brown to Dumpus Ibid. Notation by Bryant on Brown's letter.

18 - Ibid. Notation by Bryant on Brown's letter.

19 - Letter, Bryant to Dumpus, January 29, 1932. Nat. Archives File 580, Dinosaur.

20 - Ibid.

21 - Letter, Bryant to Albright, February 25, 1936. Nat. Archives File 2159, Dinosaur.

22 - Letter, Earl A. Trager, Acting Assistant Director, N.P.S., to Demaray and Wirth, July 27, 1936. Nat. Archives File 2159, Dinosaur.

23 - Letter, Telegram, Brown to Trager, September 9, 1936. Nat. Archives File 2159, Dinosaur. Brown's visit was funded by "an allotment of EF funds in the amount of $200.00...for Utah EF-1, Dinosaur National Monument, to cover the services of Dr. Brown for three or four weeks at $20.00 per day." - Letter, Fred T. Johnston to Regional Officer, Region 2, N.P.S., July 31, 1936. Nat. Archives File 2159, Dinosaur. Brown drove out and took along with him Mr. R. T. Bird, who had made a chart of the Howe Dinosaur Quarry

for one of Brown's articles in Natural History and when Brown intended to leave at Dinosaur to make a similar chart of that quarry. - Letter, Brown to Trager, August 15, 1936. Nat. Archives File 2159, Dinosaur.

24 - Letter, David H. Madson to George F. Baggley, October 26, 1936. Nat. Archives File 2159, Dinosaur.

During the early years of the depression, scientific excavation at the dinosaur quarry came to a stop, despite a cooperative attempt by the National Park Service and the American Museum of Natural History to develop the area. And yet it was a by-product of the depression which made possible reactivation of the famous dinosaur site, through the participation of various relief agencies.

In June of 1933 Barnum Brown of the American Museum suggested to Horace Albright the possibility that the dinosaur quarry development might be accomplished by making use of relief labor and hoped that he and Albright could discuss the matter in further detail during the summer.[1] By mid-October, however, it seemed apparent that there would be no public works projects for Dinosaur.[2]

On November 22, 1933, Harold Bryant confided his position about procuring an E.C.W. camp for Dinosaur to Barnum Brown by letter,[3] at the same Brown was writing Bryant in a very different vein. Brown felt that an E.C.W. camp should "be placed on the ground as soon as possible.... This is a favored spot where men can work the entire winter without inconveniences or interruptions. During the fourteen years' work of the Carnegie Museum the parties worked continuously every winter without loss of time excepting one - when two weeks were lost due to snow."[4] Within a week Bryant had received assurance that when there was a new enrollment of E.C.W. men and a redistribution of camps, consideration would be given to Dinosaur National Monument.[5]

Finally, towards the end of 1933 a federal relief project was set up "to place the dilapidated quarry in shape for a more comprehensive plan of development and utilization in line with the functions of the National Park Service."[6] For this project the National Park Service was represented by

David H. Madsen, Supervisor of Wild Life Resources with the N.P.S. in Salt Lake City. On January 5, 1934, Madsen was authorized to "contact the Utah C.W.A. who has proper authority to furnish you with 20 workers and has been directed to honor suitable vouchers for expenditures other than labor in the amount of $000."[7] During this week he had visited the quarry, together with LeRoy Hay now of the Carnegie Museum, taking note of the four small bridges and other road improvements which made it possible to drive to the site of operations. A large tent had been set up, equipped with a stove, to serve as a mess tent; "and have acquired one thousand feet of rail and two one-yard, mine cars, and all necessary equipment to begin operations at the quarry."[8]

Madsen anticipated confining the immediate work of the crew to the east side of the fossil deposit, removing waste materials and some overburden. Meanwhile, he hoped to meet with Cammerer, Vint, and Kittridge to discuss plans for the location of permanent buildings, camp grounds, and other improvements such as flood drainage and a cistern. He was looking forward at this time to the possibility of obtaining a C.C.C. camp for the monument by summer.[9]

The field direction of the C.W.A. project at Dinosaur National Monument was under the supervision of Dr. A. C. Boyle, Jr., "geologist and engineer." Boyle (Ph.D., Columbia University) had formerly worked as chief geologist for the Union Pacific for ten years and then taught for about the same period of time at the Wyoming School of Mines, priding himself on having been "one of the first professors to offer a course in the geology of the national parks."[10] He was, like Douglass before him, a unique personality who carried out his activities at the quarry with a high degree of personal devotion and intimate enthusiasm. Also like Douglass, he was periodically to run afoul of authority because of his informal and individualistic mode of of operation.[11]

A crew of nineteen men, residents of Juneau, had begun working under Doyle on December 15, 1933, at the quarry.[32] They all lived at home and each day were transported to and from the quarry by truck. On April 27, 1934, however, instructions were received from Washington to suspend the C.W.A. activities and "place in safe storage all tools, equipment, and supplies. This order was complied with in every detail, and the employes were discharged that day."[33]

Undaunted by withdrawal of support for the quarrying, Hixon and others interested sought further means to expedite the quarry development. Finally, assistance was obtained through the Transient Relief Service of Utah, an F.E.R.A. branch, under the supervision of John C. Nichols of Salt Lake City. Thus, on June 25, 1934, quarry operations resumed, now under the direction of Hixon and Nichols, the latter supplying the necessary work personnel, and with Doyle as manager of the local camp.[34] This transient camp was established at the site of the quarry, with complete housing facilities initially for a group of thirty-two men and the staff provided for by the Transient Relief Service in line with F.E.R.A. and the work of overburden removal at the quarry progressed.

The routine operation under F.E.R.A. involved two groups of about twenty men each, employed in early 1935 for the past eighteen months. These men worked six hours a day for five days each week, and in return for their labors they received board and room, their work clothes, dental and medical care, a special educational opportunity afforded by Doyle himself, and a weekly allowance of $3.00 in cash.[35] When the camp was first set up in June, the tour of duty for the crew was only four months, and temporary tent houses sufficed as shelters. With the extension of work into the winter, however, it became necessary to line the side walls of the tents and provide a fly on the roof.[36] Heating in the tents had previously been disastrous. One fire completely destroyed the top of the dispensary

and practically all of the medicine and some clothing, while another on November 27, 1934, partly destroyed a tent top (the latter fire was extinguished in four minutes). Coal flakes seemed to be the cause of these fires, and plans were laid to fireproof the canvas.[17]

The removal of the overburden in the quarry was the main order of business for the men. The remaining C.W.A. tools, equipment and supplies were taken out of storage for use by the F.E.R.A. crews, and all expenses involving the buildings, materials, supplies, food, clothing, salaries, allowances and transportation for the operation were provided through Mr. Nichols's office, in his position as State Supervisor of Transient Relief Service.[18]

Hudson summed up the status of the project in mid-July of 1935 in a letter to the regional director of the F.E.R.A., Robert Hinckley.[19] At this time the preliminary work of over-burden removal was about 60% completed. The trail construction had been carefully carried out, " buildings to house about seventy-five men were almost finished; and "all other living conditions, including water supply, are entirely satisfactory." Hudson felt that at least two more years of work would be required to complete the project and estimated that "seventy-five men will be required for a period of one hundred and fifty working days. And probably fifty men for the balance of the time." To solve the manpower problem, Hudson hoped that "the camp at Dinosaur National Monument could be transferred, as a unit, to FERA," since this organization was being staffed heavily from relief rolls.

During the latter part of 1935 the Transient Relief Service was transferred into W.P.A. activities at Dinosaur, with the continued cooperation of the National Park Service. This arrangement ran until March 15, 1936, with a possible six-month extension of time after that date.[20] Perhaps because of this change in administration, Dr. Boyle found himself out of a job on November 15, a situation disturbing to the National Park Service as

well as to Dr. Doyle. Through his months of service, Doyle had become experienced in the operation of the quarry, to the point where in the summer of 1933 he had been recommended to the position of "Acting Custodian" of the Monument by Hodson, Bryant, and Olsen.[21] Now that he was off the job, Hodson and Bryant, especially, were worried about the qualifications and experience of his successor for paleontological excavation, since it was expected that by January 15 the actual fossil-bearing strata would be reached and "it is therefore, essential that we have the most experienced supervision possible from this time on."[22]

Fortunately, as it worked out Doyle was reinstated, and in early January of 1934 he had already inaugurated extensive plans for the development of the work camp and quarrying area, including a mess hall project, dispensary project, water supply project with a small reservoir installed, a trench and gravity pipe line project, sewer line project, trail projects, approach road project, drainage channel project, and barracks building projects.[23]

Visitors to the monument during these years were most amazed at what Doyle was doing with and for the relief men who made up his quarrying crews. Daily from seven to nine-thirty in the evenings Doyle held classes for the men, discussing geology, mineralogy, chemistry, physics, astronomy, and other academic subjects and illustrating his lectures with lantern slides and blackboard drawings.[24]

On Saturdays Doyle would take the men, some fifty or sixty, on geological field trips in the area and these participants "became powerful forces in collecting suitable geologic materials for lecture demonstrations."[25] Doyle noted "this individual interest is a strong factor in helping to hold the men in camp, and at the same time they unwound easily develop into strong publicity agents for the things which help to advertise the monument. Friendly letters have their effect in disseminating accurate data, at the same time, fundamental facts about the possibilities of this great monument. Any object

found by those men in the field from any part of the region, is added to our present collection."[26] Boyle was, by the way, most interested in the development of an adequate museum at the quarry, for the display of pertinent objects, and had made some personal efforts in this direction, as suggested above.

He encouraged the men, many of them almost derelicts before they arrived at the camp, to compose songs and write poetry; and as the N.P.S. regional geologist earned on one occasion, "Dr. Boyle read some of the poetry to me and it was almost unbelievable that these men had written it."[27] At his own personal expense, Boyle prepared a set of photographs of the monument and quarrying activities which he made available to each of the men. As a result of all of these fringe benefits, morale was high among the camp workers; they lingered as long as they could at the quarry each day and they accomplished their tasks with a personal sense of pride and participation.

The N.P.S. relief activities, under Boyle's supervision, continued into mid-1933 when, really for the first time, the National Park Service itself was to receive some degree of congressional assistance, at the time of the enlargement of the monument, so that it could proceed with the delicate sculpturing of the fossil deposits.

(References Cited)

1 - Letter, Brown to Albright, June 26, 1933. Nat. Archives File 2159, Dinosaur.

2 - Letter, Wirth to Frank Kittridge, N.P.S. Chief Engineer, October 18, 1933. Nat. Archives File 2159, Dinosaur.

3 - Letter, Bryant to Brown, November 21, 1933. Nat. Archives File 2159, Dinosaur.

4 - Letter, Brown to Bryant, November 22, 1933. Nat. Archives File 2159, Dinosaur.

5 - Letter, Bryant to Brown, November 29, 1933. Nat. Archives File 2159, Dinosaur.

6 - A. C. Boyle, "Brief Report of FERA Accomplishments, Dinosaur National Monument, during 1933," January 18,11933. Nat. Archives File 2159, Dinosaur.

7 - Letter, Demaray to Madson, January 5, 1934. Nat. Archives File 2159, Dinosaur.

8 - Letter, Madson to Cammerer, January 9, 1934. Nat. Archives File 2159, Dinosaur.

9 - Ibid.

10 - Letter, Vincent M. Vandiver, Regional Geologist, to Yeager, October 21, 1935. Nat. Archives File 2159, Dinosaur.

11 - For example, while an employee of F.E.R.A. in 1934 Boyle had printed on National Park Service letterhead "A. C. Boyle, Jr. E.M., A.M., Ph.D. (Columbia) Geologist and Archeological Engineer" and also had business cards printed indicating that he was an official of the National Park Service. Demaray called this impropriety to Madson's attention and asked that he "diplomatically" caution Boyle about it, lest the N.P.S. be forced to do so itself. - Letter, Demaray to Madson, October 26, 1934. Nat. Archives File 2159, Dinosaur.

On another occasion, Madson expressed his administrative feelings about Boyle in the following words: "....I have experienced considerable difficulty about persuading the Doctor that he must not presume to conduct operations at the Monument according to his own ideas, but must conform strictly to Park regulations. In his enthusiasm he sometimes loses sight of what is legally required of employees in this Bureau. He also seems to forget suggestions which to his way of thinking are of minor importance. The entire operation at the Monument has been somewhat annoying at times, but under the circumstances is all that we could expect." - Letter, Madson to N.P.S. Director, November 8, 1934, Nat. Archives File 2159, Dinosaur.

Still later, in 1936, Boyle got into trouble by obligating government funds without authority or formal contract. Demaray wrote the N.P.S. regional office "We presume that when Dr. Boyle assumed the position of Project Superintendent he was furnished with a copy of the Handbook in which it is expressly stated that camp superintendents are without authority to obligate funds. Dr. Boyle has certainly overstepped his authority in purchasing the materials covered by the invoice of Ashton Bros., Co., in the amount of $124.95 and for which no formal contract was executed. It is suggested that your office write Dr. Boyle a rather strong letter reprimanding him for unauthorized obligation of Federal funds." Letter, Demaray to N.P.S. regional officer, Region 2, no date but probably September, 1936. Nat. Archives File 2159, Dinosaur.

12 - Boyle, op. cit.

13 - Ibid.

14 - Ibid.

15 - Ibid.

16 - Ibid.

17 - Letter, Boyle to Madsen, December 4, 1934. Nat. Archives File 2159, Dinosaur.

18 - Boyle, op. cit.

19 - Letter, Madsen to Hinckley, July 18, 1935. Nat. Archives File 2159, Dinosaur.

20 - Boyle, op. cit.

21 - Letter, Hillory A. Tolson to Cammerer, July 23, 1935. Nat. Archives File 2159, Dinosaur.

22 - Letter, Madsen to N.P.S. Director, December 20, 1935. Nat. Archives File 2159, Dinosaur. Bryant delineated the implications of the situation for Wirth as follows: "...This project requires a supervisor who has had experience in fossil bone quarrying. If the project is to be turned over to someone who has not had this sort of experience, then just as soon as the excavation has reached the bone horizon all work should be stopped unless it is possible to provide the necessary technical supervision. All the work which has been done to date will be a total loss if quarrying is continued into the fossil bones and these are damaged through improper handling. The situation is much like having the dentist prepare a tooth cavity and then calling in a blacksmith to fill it." - Letter, Bryant to Wirth, January 7, 1936. Nat. Archives File 2159, Dinosaur.

23 - Boyle, Op. cit.

24 - Letter, Vandiver to Trager, October 21, 1935. Nat. Archives File 2159, Dinosaur.

25 - Letter, Boyle to Madsen, October 25, 1934. Nat. Archives File 2159, Dinosaur.

26 - Ibid.

27 - Letter, Vandiver to Trager, October 21, 1935. Nat. Archives File 2159, Dinosaur.

28 - In mid-1935 Madsen noted that "about twenty five per cent of the men who first went to the camp, are still there." - Letter, Madsen to N.P.S. Director, June 27, 1935. Nat. Archives File 2159, Dinosaur.

THE DINOSAUR QUARRY AND THE U.S. NATIONAL MUSEUM

I. The Carnegie Museum Period - 1907-1923

Relations between the U. S. National Museum and the Carnegie Museum with respect to dinosaur remains predated the establishment of Dinosaur National Monument by several years. In late 1907 Rathbun, assistant secretary of the National Museum, had hoped for an exchange with the Carnegie Museum for a cast of a Diplodocus from Wyoming.[1] Mr. Carnegie was approached about such a presentation but at the time was "not in the humor" to authorize it, feeling that "this monster should not be shown anywhere else in America other than in the Pittsburgh Museum."[2] In 1915, after the dinosaur quarry in Utah had become a national monument and thus fell under the jurisdiction of the Department of the Interior, Rathbun expressed the feeling that it was no longer desirable for the National Museum to obtain a cast of a Diplodocus from the Carnegie Museum, adding that perhaps "in due time we shall be able to obtain an original skeleton."[3] The "due time" proved long in coming!

With the creation of the monument, the Carnegie Museum was no longer free, as it had been in the past, to carry on its quarrying without some governmental approval. The granting of this approval fell to the Secretary of the Interior, and over a number of years the Carnegie Museum's annual request to operate the quarry was granted, with the stipulation that at the conclusion of each season's work a list describing specimens collected and work accomplished and a plat showing location of collected specimens be transmitted to the Secretary of the Smithsonian Institution, with a copy to the Department of the Interior[4] (see Chapter : "The Carnegie Museum Quarrying Permits"). Late in 1915, when Holland

had first approached the Interior Department about permission to continue the quarrying operations, he asked Dr. C. D. Walcott, secretary of the Smithsonian Institution, and Dr. George Otis Smith, head of the U. S. Geological Survey, to "put in a laboring oar on our behalf, so that our wishes may be complied with."[5]

Meanwhile, Dr. Walcott had, in reply to a request from Stephen Mather of the Department of the Interior, checked into the accomplishments of the Carnegie Museum at the quarry and into the general policy of granting permits to collect "on Government ground fossils ~~or~~another objects that were of scientific rather than commercial value."[6] Personally, he felt that it would be ~~would be~~ desirable for the Carnegie Museum to continue its excavation and removal of bones, but under a renewable permit embodying a time limit. The National Museum had no funds itself for such paleontological work at the moment but wanted to leave open the opportunity to do so in the future if and when funds became available.

Dr. Smith indicated his approval of the Carnegie Museum's work in a letter of January 15 to Holland but voiced the hope that "arrangements will be made whereby the National Museum may be enabled to secure specimens of these very extraordinary skeletons for exhibition to the public in its halls."[7] He commented on the rumor [true] that the Carnegie Museum had refused to make available a cast of a dinosaur for the National Museum and felt it would be a sorry state of affairs if the valuable dinosaur remains were to be exhausted by a private concern under government permit "without safeguarding, at least, the public welfare and interest through its own institutions."[8]

Smith was sufficiently worried about the Carnegie Museum's "exploitation of the vertebrate-bearing pocket in the Dinosaur National Monument" to suggest to Mather that the Geological Survey be invited to examine the new national monument during the coming field season "for the purpose of ascertaining and reporting to you as to the extent to which the fossiliferous deposit has already been exhausted, as to the indications of similar deposits in the district, as to the feasibility of permitting further removal of skeletons by the Carnegie Museum or the National Museum, and as to the conditions of the quarry and of the occurrence of the fossils with reference to possible utilization of the spot as an educational demonstration of the characters and mode of occurrence of these monstrous skeletons in the strata of the region."[9] Walcott seconded this suggestion for a geological survey of the quarry,[10a] and on February 29, 1916, Mather sent a letter to Smith authorizing the survey for the coming field season.[10b]

As the years went by, the Carnegie Museum continued to apply for and receive its annual permit, as mentioned earlier. However, representatives of several federal agencies increasingly showed interest in the disposition of the fossils from the quarry. In early 1919 Mather asked Holland if any casts of the dinosaur remains collected at the quarry had ever been presented to the Smithsonian Institution? Holland reported that in the first place no casts had ever been made of the Utah dinosaur remains; and, furthermore, those dinosaur casts which had been distributed by the Carnegie Museum to many museums in the world[11] were personal gifts from Mr. Carnegie. Holland estimated that to make a cast, say, of Apatosaurus would cost approximately $25,000, and the

Carnegie Museum simply could not afford such an expenditure. He went on to point out that "Our relations with the United States National Museum are extremely agreeable, and we have exchanged material with that Museum a number of times, and are constantly loaning material to them for which they ask."[12]

David White of the U. S. Geological Survey in Washington voiced his opinion on the "continued monopoly of the Dinosaur National Monument by the Carnegie Museum" by writing Horace Albright, acting director of the N.P.S., on May 12, 1919. White suggested that when the Carnegie Museum quarrying permit expire at the end of the year, precedence be given to the National Museum to continue the excavation, "if at that time it is prepared to undertake such work." If it were unable to, and no other leading museum wished to make application, then the Carnegie Museum might be granted another permit with the understanding that "topotypes or duplicates of all types of genera and species recovered....be given to the National Museum, or, if there are no duplicates, casts of such types be prepared for presentation to the National Museum, if they are desired by that institution.[13]

Later this same year Dr. F. J. Pack of the University of Utah asked the U. S. Senator from Utah, Reed Smoot, to approach Dr. Walcott and put in a good word for the University of Utah, if the Carnegie Museum did not renew its permit.[14] Douglass also put in a word on behalf of the University of Utah (and Brigham Young University, incidentally), writing Douglas Stewart of the Carnegie Museum that perhaps by a "three-sided agreement between the heads of the Carnegie Museum and the University of Utah and the Secretary of the Smithsonian Institution Utah could secure one of the

specimens now partly uncovered....."[15]

In the spring of 1921 Dr. Smith of the U. S. Geological Survey reported to Mather that the Survey anticipated having enough funds that year (up to July 1) to cooperate with the U. S. National Museum paleontologists in collecting fossils at the dinosaur quarry, if the Carnegie Museum permit was not exclusive. Cammerer, on behalf of Mather, had to reply that, unfortunately, Carnegie's Monument was exclusive.[16]

The increasingly unsatisfactory relationship between the Carnagie Museum and the Smithsonian Institution over operation of the dinosaur quarry was emphasized in the reply of the Institution's secretary to Holland's request for a 1922 permit. The permit was granted, but with the following admonition:[17]

> I venture to suggest that Dr. Holland be advised that the ethics of the case would seem to demand that he deposit at least a portion of his duplicate material in the National Museum. It seems very unfortunate that the Government, by reason of lack of funds for the particular purpose, should be deprived of the opportunity of securing and preserving for educational and research work the treasures of its own domain. At the same time it would be both ungracious and unwise to refuse to accord permission to a properly constituted organization to do the work which we cannot do ourselves. In view of all the circumstances, however, it seems unfair that a private organization should be permitted to practically exhaust the resources of a portion of the national domain without rendering some return to the Government.

As the end of 1922 approached, the Carnegie Museum under its new director Douglas Stewart began seriously to anticipate curtailment of its excavations at the quarry. Stewart planned to meet with Secretary Walcott towards the end of October to discuss "the future of the Dinosaur Monument,"[18a] including disposition of the two skeletons of Diplodocus which were being worked out.[18b] Stewart did meet that autumn with Dr. Walcott and also Dr. George P. Merrill, and his fear that it would be difficult for the

Carnegie Museum to obtain another permit was confirmed: "They feel that the National Museum, naturally, that as they have not a skeleton of Diplodocus, in their own collections, and, as this is Government land, they should have the liberty of taking out the two skeletons of Diplodocus."[19] Stewart explained to Walcott that he thought the Carnegie Museum "should be in some way paid for the expense of discovering and partially working out these specimens, and I think they [i.e., Walcott and the National Museum] look upon this proposition favorably. Not that we will receive any cash from the Government, but some material in the way of exchange. By showing our willingness to turn over the quarry and not waiting to be ordered out of it, we have put the National Museum on the defensive rather than the offensive, and in any event have created a kindly feeling towards this Museum."[20]

After this conference, Dr. Merrill had Ravenel telegraph Douglass to get information on the proportions of excavating the skeletons of Diplodocus, if the U. S. National Museum decided to go through with the job, perhaps in cooperation with the University of Utah.[21] Douglass replied:[22a]

> Estimated cost two skeletons forty-five hundred including truck haul of twelve hundred to nearest railroad station. Time six months. Minimum thirty-five hundred. Five months. Top skeleton must be removed first. Probably nearly complete except neck.
>
> Spinal column of bottom skeleton probably nearly complete. Excavation not far enough to uncover limbs if present. Neck already out. Neck could be matched with top skeleton and about cut cost in half. On other hand Utah might pay for excavating top skeleton and divide cost. Wire if detailed letter is desired.[22b]

Merrill quickly wrote Douglass to see if it actually would be possible for Dr. Gilmore of the Smithsonian to begin working at the quarry in January of 1923 and "secure enough material to make a composite mount for the figure you give?"[23] The Smithsonian

wanted a skeleton for exhibition purposes, but Merrill was afraid that no skull might be found, which would limit exhibition value of remains.[24] As it was, the National Museum had insufficient funds in its regular budget to undertake the possible excavation; and before hearing from Douglass Dr. Merrill had had to turn in to Walcott and estimate of $10,000 for two years' work, so that Walcott could begin to solicit additional funds. "Of course if it can be done for less money it will be a great relief."[25]

With the realization that the quarry probably would be turned over to the Smithsonian on or about January 1, 1923, Stewart made arrangements to see that the quarry contents be protected until the government actually moved in. He wrote Walcott that until such time as the Carnegie Museum actually completed its work, Douglass would act as custodian of the property. Also, at the government's request, Stewart agreed "that in the event that we have finished our work before they have made proper arrangements for the care of the quarry, to lend you [Douglass] to the Government forna period not to exceed six months, with the understanding Of course that you should receive the same salary with expenses from them that you receive from the Carnegie Museum[26] On the other hand, Stewart absolutely refused to turn Douglass over to the National Museum permanently, "as you are much too valuable a man to us for me to consider such a proposition."[27] Douglass himself apparently had little to say in the matter.[28]

The Smithsonian's efforts in early 1923 to obtain funds to operate the quarry were slow in bearing fruit. Meanwhile, Douglass and J. LeRoy Kay on behalf of the Carnegie Museum continued to protect the exposed fossil remains and were authorized to do so by

Stewart until June 1 at the latest.[29] Looking forward to the possibility that funds for excavation work would still not be forthcoming by then, Dr. Walcott sounded Douglass out on obtaining the services of someone to serve simply as a custodian until, hopefully, quarrying could be financed by the government.[30]

During this period the University of Utah through Dr. Pack, as well as other Utah people and groups, were vigorously continuing pressure for permission to work the quarry on behalf of the state of Utah. Dr. Pack even suggested to Senator Smoot that perhaps he could exert influence on Dr. Walcott favorable to Utah.[31] Interestingly enough, Douglas Stewart was of the "opinion that the government, and not the State of Utah, should have first claim...."[32] At the same time Cammerer, speaking on behalf of the National Park Service, voiced the opinion that "it would be most agreeable to us to have the Utah people (the University) go in and conduct other explorations from now on."[33]

On the morning of March 7 Cammerer had a chat with Ravenel of the Smithsonian who was anxious for all action relating to the quarry to be "held in abeyance" for a month or two until the Smithsonian had exhausted all sources of financial support for carrying on the paleontological operation.[34] The Park Service officials were somewhat piqued at this juncture because the Carnegie and National Museum people had not earlier kept them informed as to the contemplated disposition of the quarry.[35] Finally, on March 16 Hubert Work, the Secretary of the Interior, informed the Smithsonian Institution that, everything considered, he had decided"to hold in abeyance the granting of any permit until I hear further from you, but trust you can advise me definitely before June 1st."[36]

Reacting to continued pressure from Senator Smoot, and still searching for a solution to the financial dilemma, Walcott now approached Smoot with a canny proposition:[37]

> We are still hampered through lack of funds and I will, therefore, make the following proposition. As you are probably quite well aware, work of this kind requires great care and skill on the part of specially trained workmen, and there are but few in the country qualified to undertake it satisfactorily. Not knowing what facilities the University of Utah may have it occurs to me that this work might be jointly undertaken by this Institution and that University. If Dr. Pack could raise the necessary funds we would put our Mr. Gilmore, who is one of the most highly trained men in the country, into the field to supervise the work with the understanding that each party would receive a fair proportion of the resulting material. I wish specially to impress upon you the necessity of having the work done only under the direction of one fully qualified.[38]
>
> You will understand that far from desiring to monopolize this opportunity we will be only too glad to help and can but feel that the arrangement suggested would work out to our mutual advantage.

Not surprisingly, the University of Utah turned down this particular proposition.

R[illegible]rences Cited)

1 - Letter, Walcott to Mather, January 25, 1916. Nat. Archives File 580, Dinosaur.

2 - Ibid.

3- Ibid.

4 - Letter, Sweeney to Holland, January 8, 1916. Nat. Archives File 580, Dinosaur.

5 - Letter, Holland to Douglass, December 16, 1915. Douglass correspondence.

6 - Letter, Walcott to Mather, January 3, 1916. Mather had made his request in a letter of December 11, 1915.

7 - Letter, Smith to Holland, January 15, 1916. Nat. Archives File 580, Dinosaur.

8 - Ibid.

9 - Letter, Smith to Mather, January 15, 1916. Nat. Archives File 580, Dinosaur.

10a- Letter, Walcott to Mather, January 25, 1916. Nat. Archives File 580, Dinosaur.

10b- Letter, Mather to Smith, February 29, 1916. Nat. Archives File 580, Dinosaur.

11 - The Carnegie Museum had presented dinosaur casts to the British Museum, the National Museum in Paris, the Royal Museum in Berlin, the Imperial Museum in St. Petersburg, the Italian Museum of Paleontology, the Imperial Museum in Vienna, the Royal Museum in Madrid and the National Museum at La Plata. - Letter, Holland to Mather, February 24, 1919. Nat. Archives File 580, Dinosaur.

12 - Ibid.

13 - Letter, White to Albright, May 12, 1919. Nat. Archives File 580, Dinosaur.

14 - Letter, Pack to Smoot, November 6, 1919. Nat. Archives File 580, Dinosaur.

15 - Letter, Douglass to Stewart, September 20, 1920. Douglass correspondence.

16 - Letter, Smith to Mather, March 24, 1921; and reply from Cammerer. Nat. Archives File 580, Dinosaur.

17 - Letter, F. M. Goodwin, Assistant Secretary, Dept. of Interior, to Holland, January 31, 1922. Nat. Archives File 580, Dinosaur.

18a- Letter, Stewart to Douglass, October 9, 1922. Douglass correspondence.

18b- Letter, Stewart to Douglass, October 17, 1922. Douglass correspondence.

19 - Letter, Stewart to Douglass, November 7, 1922. Douglass correspondence.

20 - Ibid.

21 - Letter, Merrill to Douglass, November 11, 1922. Douglass correspondence.

22a- Telegram, Douglass to Smithsonian Institution, November 9, 1922. Douglass correspondence.

22b- Douglass's detailed estimate, the basis for the telegram, was as follows:

Labor	$1400.00
Overseer	800.00
Lumber, Nails, etc.	150.00
Plaster, Shellac, Alcohol & Burlap	125.00
Coal	25.00
Steel	12.00
Team	50.00
Freight, trucking to station	1200.00
Expenses while freighting	100.00

Top Diplodocus 16 blocks to get out
Bottom Diplodocus 10 blocks to get out,
8 blocks already cut
Boxes probably average 85 square feet of lumber
Lumber estimated 3000 feet
Weight of material boxed 80,000 pounds
--Memorandum, November 9, 1922. Douglass Correspondence.

23 - Letter, Merrill to Douglass, November 11, 1922. Douglass correspondence.

24 - By letter of November 22, 1922 (Douglass correspondence), Douglass reported to Merrill that it was possible that a skull might be uncovered. However, "So far as I know there is only one case in which the skull of a Diplodocus has been found in undoubted association with the skeleton and that was in this quarry. We have found several Diplodocus-like skulls both above and below the average size. The big Dinosaurs seem especially prone to lose their heads. Perhaps they had not brains enough to remember 'what they did with them.' Anyway a plaster skull can be obtained and, as these big follows are not very pretty they look as well as could be expected with one of these."

25 - Letter, Merrill to Douglass, November 11, 1922. Douglass correspondence.

26 - Letter, Stewart to Douglass, November 16, 1922. Douglass correspondence.

27 - Ibid.

28 - In a letter of November 28, 1922, to Stewart (Douglass correspondence), Douglass did write, almost pathetically, "Personally....the arrangement is agreeable to me and I appreciate your consideration in this matter."

29 - Letter, Douglass to Pack, May 4, 1923. Douglass correspondence. Douglass's actual work at the quarry had been wound up about the 8th of January. In February he wrote Peterson at the Carnegie Museum that he was "improving the time doing office work and getting things arranged so I can get at things when I want them." - Letter, Douglass to Peterson, February 20, 1923. Douglass correspondence. Douglass continued to receive $200 a month, credited to the Carnegie Museum Field Account. - Letter, Stewart to Douglass, March 5, 1923. Douglass correspondence.

30 - Letter, Walcott to Douglass, February 17, 1923. Douglass correspondence.

31 - Letter, Smoot to Walcott, March 7, 1923. Nat. Archives File 580, Dinosaur. Smoot also received a telegram from Governor Mabey of Utah.

32 - Letter, Stewart to Cammerer, March 5, 1923. Nat. Archives File 580, Dinosaur. To Douglass he wrote "I feel certain that Dr. Walcott much prefers to have the work done by the National Museum, and I must say I agree with him that the Government should have the first call." - Letter, Stewart to Douglass, March 8, 1923. Douglass correspondence.

33 - Letter, Cammerer to Judge Finney, March 7, 1923. Nat. Archives File 580, Dinosaur. Stewart may have been unaware of Cammerer's opinion when he wrote Douglass on April 18 that "The application of Utah to work the quarry is not viewed with favor by the Government." - Letter, Stewart to Douglass, April 18, 1923. Douglass correspondence. He was more likely reflecting the opinion of the Smithsonian. On the other hand, the Government was probably unaware of Stewart's view towards the government, as revealed in a comment to Douglass: "....Do not make any unnecessary improvements at the quarry as I do not wish to leave anything more for the Government than we can help." - Letter, Stewart to Douglass, February 13, 1923. Douglass correspondence.

34 - Letter, Cammerer to Finney, March 7, 1923. Nat. Archives File 580, Dinosaur.

35 - Ibid. Cammerer referred to the December conference in Washington, to which Carnegie and Smithsonian but not Park Service personnel were invited. Cammerer learned about the conference through a telegram from Stewart sent on March 5, 1923 (Nat. Archives File 580, Dinosaur).

36 - Letter, Work to Abbot, Acting Secretary, Smithsonian Institution, March 16, 1923. Nat. Archives File 580, Dinosaur.

37 - Letter, Walcott to Smoot, March 20, 1923. Nat. Archives File 580, Dinosaur.

38 - Stewart had made a similar comment to Douglass: "...I do not believe that Utah has men sufficiently skilled in taking out fossils, and therefore are likely to ruin some good material in the attempt. However, you need not quote me in this respect." - Letter, Stewart to Douglass, March 8, 1923. Douglass correspondence. Pack, of course, was interested in using the services of Douglass, rather than Gilmore, and so wrote Douglass in a letter of April 25, 1923 (Douglass correspondence).

A MONUMENT FOR VISITORS (13)

I. The Carnegie Museum Period 1915-1922

> .....The Dinosaur Monument should, if it is not despoiled, become in fact a real monument of great educational and paleontological interest within easy access to the tourist. One can conceive of the impressiveness and instructiveness to the tourist of seeing partly uncovered and, in some cases, protruding from the surfaces and edges of the strata the bones and skeletons of the monsters, lying where they were buried many millions of years ago in deposits of mud and sand which now are mere strata beneath thousands of feet of other beds from which the mountains and mesas of the region have been carved. There is, therefore, reason for the perpetuation of the Dinosaur Monument as a fact rather than a name.[1]

Geologist George Smith's 1916 comments on the newly established monument touch both upon the problems and challenges which confronted this new federal preserve, problems involving protection of invaluable fossil remains from increasing numbers of curious and often thoughtless visitors, and the challenge of developing the Monument in the best "public interest."

Local people naturally had been intrigued by the quarry from the time Douglass first stumbled across the dinosaur bones in 1909 (see Chapter , "1907-1909: Douglass Discovers the Dinosaurs" and Chapter , "Life at the Dinosaur Quarry: 1910-1915"). Dean Winchester of the U. S. Geological Survey calculated that by late 1915 "a large percentage of the people living within a distance of 50 miles" had already visited the quarry.[2] In general such local visitors, about 500 of them a year, continued to think of the quarry as private property, as in a sense it had been up to the time of monument establishment, and as a result "there are practically no acts of vandalism."[3]

When the quarry became a national monument, it inevitably

began to gain more than local publicity; and encroaching railroad lines and interstate highways stimulated tourism. No sooner had the monument been created than the Government began receiving what proved to be somewhat embarrassing requests for information about the new reservation. In Octobdr of 1915 the Wildman Magazine and News Service of New York City wrote Robert S. Yard of the Department of the Interior asking for information and photographs on Dinosaur.[4] Yard, having nothing, had to pass the request on to Clay Tallman, Commissioner of the General Land Office, who was likewise chagrined to report that "there is little information relating to the Dinosaur National Monument, Utah on file in this Bureau, and no photographs whatever."[5]

By the time the Denver and Rio Grande dRailroad Company, in the fall ~~April~~ of 1916, requested photographs and descriptive matter on Utah's national monuments for publicity purposes, William J. Hanna, special agent of the General Land Office, had visited Dinosaur and had prepared an illustrated report which could be made available.[6] That same autumn the general freight and passanger agent for the Denver and Salt Lake Railroad Company, W. H. Paul, made a request for "a picture of the Dinosaur Quarry or a picture of the skeleton of one of these animals if available, with any description which should be shown on the screen."[7] This was desired by the Department of Publicity of the Bureau of Commercial Economics at Washington for inclusion in a lantern slide set "to be shown in educational campaign by state universities for students and through extension centers."[8]

Hanna, who inspected the monument in January of 1916, wrote the General Land Office Commissioner that[9]

> .....there is no necessity for any improvements at the present time and no estimate can be given of the cost of improving and protecting the monument until investigation is made to determine what condition it is left in when the museum [Carnegie] ceases its operation.
>
> At the present time the best routes to reach the monument are from Mack, Colorado, and Helper, Utah, on the main line of the Denver and Rio Grande Railway, thence by narrow gauge railroad and stage lines to Vernal, Utah, from which points a private conveyance of some kind must be hired. The distance from Vernal, Utah, to the dinosaur by wagon road is approximately 18 miles. Within a year or two there will be a railroad through the Uinta Basin. The trip can then be made more cheaply, quickly, and comfortably, and undoubtedly a much greater number of people will then visit the monument.

As instructed by Chief of Field Division H. Stanley Hinrichs, Henna while at the monument posted "warning notices," amusingly enough not ones made specifically for Dinosaur but rather some left over from Natural Bridges National Monument.[10]

As Douglass and his crew continued their excavations, local and national press gave good coverage, though sometimes overly enthusiastic. In a special article for the September 1, 1916, Vernal Express, Douglass had to correct one published exaggeration that the neck of Skeleton No. 150B was 60 feet long (it was only 32 feet long). Yet Douglass went ahead to claim, rightly, that "This quarry is far ahead of anything yet found and probably few of us will live to see the end of its wonders and revelations."[11]

Douglass had considerable sympathy for visitors to the quarry, even if they might have a tendency to disrupt normal operations. He suggested through the newspaper that people planning to come up to the quarry phone him ahead of time so that he could "make provisions to make their visit most profitable."[12] Some of the workmen were around the quarry every

day but Sunday, "and it can sometimes be arranged to show visitors around that day."[13]

A visitor's register was kept in Douglass's office at the quarry; and as a mineral inspector from the Salt Lake City General Land Office observed: "...it is interesting to note that an increasing and large number of people are visiting this monument even though it is located in a place quite far removed from the regular lines of travel."[14] During the time the register was maintained in 1916, 504 visitors were recorded, with a high count of 38 on August 16. Douglass maintained this register until mid-1924, even after the Carnegie Museum had relinquished its rights to the quarry.[15]

The early tourists exhibited the same personal affection for the great reptiles that the quarry workmen did, calling Skeleton No. 240 the "big bug."[16] And the Vernal Express once whimsically reported that "Dr. Earl Douglass spent Old Folks day with Uintasaurus, Jensen's oldest resident, who was somewhat under the weather."[17]

In early January of 1917 Douglass embarked on a new kind of endeavor which would, in part, make use of the Dinosaur country in an educational way befitting a national monument area. Under the auspices of the University of Utah, he began teaching a course called "Lessons in Geology" which would include as part of its field work excursions to the dinosaur quarry, Green River, and Split Mountain Canyon.[18] About eighteen people enrolled for this course (including Douglass's wife Pearl), which started on January 8.[19] On April 13 Douglass took his class on its first field trip, meeting near the banks of the Green River half a mile west

of the Douglass home. He took the group onto a fine sedimentary lookout nearby, where the geology from Blue Mountain to Drush Creek could be seen, and there presented his principal lecture. The class ate lunch at Orchid [?] Springs, "under the largest birch trees in Uintah county."[20] In the fall, starting on December 1, Douglass continued this type of educational program in the Uintah Basin by teaching an extension course for the University of Utah on zoology.[21]

Despite the fact that the quarry was a good distance from the main Salt Lake City-Denver highway, and the entrance road was poor at best and sometimes even impassible in bad weather, the spot still experienced good visitation year in and year out. Douglass was ever its protagonist, lecturing about the quarry operation on numerous occasions in and out of the Uintah Basin. For example, in November of 1919 he gave two lectures on the quarry at the University of Utah (one to the student body and one to the faculty) and five in Provo (including one to the BYU student body, one to the faculty, one to the general public and one at the high school). While at Provo a reception was given in his honor. He also planned to lecture at Utah Agricultural College in Logan, but this failed to materialize due to a misunderstanding about dates.[22] Douglass gave this particular series of lectures to stimulate interest in the fossil field in hopes that the State of Utah would take over excavation when the Carnegie Museum curtailed its operations.[23]

In the early 1920's a signboard advertising the monument was erected privately at the quarry road junction in Jensen, and this encouragement brought between 400 and 500 visitors during the month of August, 1921, alone.[24]

In 1921, indeed, there was considerable local interest in

promoting the dinosaur quarry. Early in the year there had been some talk in Washington about a possible "Park to Park Highway" which would connect the national parks "in one great highway for tourist travel."[25] William M. Anderson, supervisor of Ashley National Forest, heard about this and called the possibility to the attention of the Vernal Commercial Club. He then wrote the National Park Service, encouraging inclusion of Dinosaur National Monument in the highway system, urging that "some attention be given to the protection and perpetuation of the Dinosaurs that are still left deposited" and suggesting that if they "were exposed a little more and fixed up for the public view," the quarry would make one of the most interesting resorts in the whole country.[26] The Director of the National Park Service recommended that Anderson get the backing of local clubs, prominent citizens, and the local representative in Congress.[27]

By November of 1921 Anderson was even more vigorously pursuing the matter. On November 1 he wrote the National Park Service a letter which called the government to task for not doing "something to preserve this natural wonder and to put it into shape for people to visit it and get the benefits that they are entitled to in one of the National reserves."[28] Anderson went on to recommend that "the place should be fixed up and a good road constructed in order that the public could go and view the wonders of nature and return in safety and too without having the opportunity of carrying any part of the exhibits away. This matter is particularly urgent, therefore, we specially request that you give it some immediate attention else it may be necessary that we appeal to Congress for the action necessary."

Cammerer sent Anderson's epistle on to Holland for comment;

and comment Holland did.[29] It was in his reply to Cammerer that Holland observed that "...the quarry, as you may be aware, is simply a hole in the ground...., ...the so-called National Dinosaur Monument is in truth nothing except a gash in the rocks on the mountain side...."

> The perusal of Mr. Anderson's communication naturally is attended with a little surprise, not unmixed with amusement. The inhabitants of the town of Vernal, located some twenty-five miles distant from the place where we have been taking up fossil remains, ever since we began our operations there, have been in the habit of making Sunday trips to the quarry and have naturally been interested in the glimpses which they have gotten of the fossil remains as they were being taken out and have been much entertained no doubt by the obliging explanations given to them by Mr. Earl Douglass, who has been in charge of the work, and his associated workmen....
>
> Mr. Anderson expresses the hope that something may be done to "preserve these natural wonders", and expresses the hope that "steps may be taken to conserve the spot and make it a place of resort." I suspect that Mr. Anderson has only a very faint idea of what he is writing about. The suggestion that unless you do something in the premises it will be necessary to resort to congressional action provokes a smile.
>
> .....the whole thing sums itself up in saying that it is questionable whether the United States Government would be justified in appropriating money simply to preserve intact what is in truth only a "hole in the ground", so that the people living twenty-five miles away may have a place to which to resort to gratify their curiosity when they have nothing else to do.

Holland notwithstanding, Anderson's plea met with some success in Washington, inasmuch as the National Park Service promised in late 1921 to have metal signs made directing tourists to the area and apparently suggested that a Washington official might be sent out to inspect conditions at the quarry "early in the spring, with a view of building a good road to the quarry and see about the proper housing of the fossil relics in the quarry."[30] The Vernal Express further praised the Monument's cause at this

time by urging that[31]

> .....steps should be taken to employ a man whose business it shall be to guard the monument, to see that none of these ancient relics are destroyed, to post labels and directions for the benefit of the visitors, to arrange to make things pleasant and attractive for them, and personally give them the information they are eager to gain....

The wheels of government grind exceedingly slow; and in May of 1922 Anderson again challenged the National Park Service to exert some effort on behalf of the monument. The approach road was still in bad shape, nothing had been done to take care of the "exhibit" at the quarry; and the Carnegie Museum crew was more inclined to keep visitors out of the area than take time to guard it. Anderson requested on May 9, on behalf of the Vernal Commercial Club, that the Park Service make some arrangement "to pay for a guide and guard to be stationed at this quarry from now on to the first of November and since it is urgent that this matter be attended to at once we suggest that you wire the instructions either to our club or to the local register of Vernal land office to procure a man at once. This is important from the national standpoint....."[32]

Cammerer's reply emphasized that "we have no money to put into the protection or development of this monument."[33] Interestingly enough, his amplification of this statement included many observations "lifted" verbatim from Holland's letter of November 8, quoted earlier in this chapter.[34] However, Cammerer verified that some metal signs had been prepared and shipped to Douglass for installation. These three signs, weighing 58 pounds, had been prepared by the Handcety Manufacturing Company of Denver, but so far they had not been received by Douglass.[35] Douglass suggested that they might be at Craig. Actually, they had been shipped to Vernal.[36]

Not deriving much satisfaction from the National Park Service, Anderson next turned his attention to the Carnegie Museum itself. On May 22, 1922, he wrote Dr. Holland, suggesting that perhaps "....you would be glad to have your men entertain the tourists at the quarry in the same manner and with the same spirit that governs at your Museum. This Dinosaur quarry is surely a wonderful place to go and if you cared to give it fuller publicity and furnish the proper guard and guides here, it would be a very material monument to your generosity and to your Institute....."[37]

Douglass joined in Anderson's plea by informing Holland[38] that (probably much to Holland's surprise and consternation) he had had notices prepared for the Vernal Express and for posting in hotels and other public places to the effect that the quarry would only be open to visitors during weekdays from 8 A.M. to 5 P. M. (with other times arranged by telephone in order to obtain admission and a guide). A minimum fee of $1.00 would be charged parties for the services of a guide.[39] Douglass suggested to Holland that "our men could serve and deduct the time spent in entertaining visitors, while outside work-hours they would receive compensation for their time."[40] These notices began appearing in the Vernal Express on June 16 for a period of six weeks.[41]

Douglass, on his own, also wrote the National Park Service, wondering if there were available "copies of the rules which in general apply to National Monuments and National Parks or any which will be of help to me here as I have immediate charge of the Dinosaur Monument here."[42] Douglass went on to note "....So, as I am in charge here, the matter is subject to my judgment except in case that my superiors rule otherwise. This is why any printed regulations or instructions from your department would be welcome.

For example, I wish to know just what I should do in the case of violation of any of the rules, as trespassing, defacing the Monument, taking or mutilating specimens, visiting the Quarry outside the regular hours without an attendant etc."

Inreply, the National Park Service's Chief Civil Engineer, George E. Goodwin, pointed out to Douglass that general regulations for national monuments could be obtained from Washington.[43] With respect to police powers, Goodwin emphasized that since presumably Douglass had none, "...it would hardly be possible for you to make any arrests in case of violations. If I were in your place and I thought a violation had been made, I would tell the person or persons to leave the monument. In case the damage was very great or the violation very serious, I would communicate with the nearest Federal Commissioner and swear out a warrant."

The summer of 1922 found many visitors coming to the quarry, more than a thousand by season's end.[44] One Myrum Moon had considered the tales about the dinosaur remains rather "fishy," until he actually "beheld all the bones of the large animals lying on the ground ready to be shipped...." and realized that "it was a reality and a wonder...."[44] Early in July a group of boy scouts from the Salt Lake Council paid a visit to the quarry and were shown around by Douglass.[45] Douglass also played host to the Salt Lake Uintah Empire Trade Excursionists (who relaxed after their excursion at a "melon bust" in their honor)[46] and showed around dignitaries like Dr. Matthew of the U. S. National Museum, accompanied by Dr. Clement and Dr. Colby.[47]

Inasmuch as the Carnegie Museum was giving strong consideration to curtailing its activities at the dinosaur quarry by the end of 1922, Stewart decided to send Peterson and Coggeshall out from

Pittsburg on an inspection tour in August.[48] Both men were instructed to take photographs and measurements which could be used in making an accurate model of the quarry as it had now been excavated. In addition, Coggeshall was bringing along a motion picture camera and would take movies of the final quarry operations which would be worked into a film on the quarry to be used in educational, work of the Carnegie Institute.

Douglass, sensitive to interpretive opportunities at the quarry, hastily wrote Coggeshall and encouraged him to bring along some photographs of representative Uintah Basin dinosaur skeletons, such as that of Apatosaurus, and of the outside of the Carnegie Museum and its mammal or reptile rooms, so that Douglass could have postcards made of the scenes for tourists and could exhibit them in his officecocabin at the quarry.[49] He pointed out that he had already made available to visitors pictures taken at the quarry during its development (Douglass, himself, was a prolific photographer), and had on exhibit a fine framed pi cture of Apatosaurus and Diplodocus which Coggeshall had sent him.

The two Pittsburg men finally arrived on August 17 and were in the area until mid-September, boarding with Mrs. Douglass.[50] Coggeshall did take motion pictures and also gathered material for a projected article on the quarry for National Geographic Magazine.[51] Before his stay was over, Coggeshall got back some of his processed film; and the Vernal Commercial Club persuaded him to present a lecture on dinosaurs, using slides, the new movies, and an old one that Coggeshall described as showing "live" dinosaurs. The Vernal Express cautiously noted that Coggeshall "did not tell how the record was taken or how he happened to be living so long ago."[52]

The free showing, at the crowded Vogue Theater on Sunday, September 10, was a huge success. The films portrayed camp scenes, exploring for fossils, gathering fossils; "the battle of giants was interesting and instructive, as was all the attempts at making the great fossils alive."[53]

* * * * *

Early in 1922 Horace Albright, director of the National Park Service, had written Roger W. Toll, superintendent of Rocky Mountain National Park, about the possibility of someone from Rocky Mountain visiting the dinosaur quarry on behalf of the Park Service.[54] Months went by without any action. Finally, in mid-October Toll dropped Albright a note, suggesting the possibility that he (Toll) could stop off at Dinosaur for an inspection en route to a meeting in Yosemite National Park in November. "If you care to have such a trip made, I should be glad to have a letter to the representative of the Carnegie Expedition, who is in charge of excavation, and whatever instructions you may have regarding the report, as well as general information regarding the Monument."[55]

Albright replied that because of lack of funds in the monument appropriation Toll's trip could not be authorized. Thus, during that period of the Monument's history from 1915 to 1922 when it was under the supervision of the Carnegie Museum, no representative of the National Park Service ever visited the area; and any protection and interpretation was carried out by the Carnegie Museum personnel, especially Earl Douglass.

(References Cited)

1 - Letter, George Smith, U. S. Geological Survey, to Mather, January 15, 1916. Nat. Archives File 580, Dinosaur.

2 - Report, Dean E. Winchester to Smith and Mather, December 22, 1915. Nat. Archives File 580, Dinosaur.

3 - Letter, William Hanna, Special Agent, General Land Office, to Commissioner, General Land Office, March 23, 1916. Nat. Archives File 580, Dinosaur.

4 - Letter, Yard to Tallman, October 20, 1915. Nat. Archives File 580, Dinosaur.

5 - Letter, Tallman to Yard, October 21, 1915. Nat. Archives File 580, Dinosaur.

6 - Letter, H. Stanley Hinrichs, Chief of Field Division (Salt Lake City), General Land Office, to Commissioner, General Land Office, October 25, 1916. Nat. Archives File 580, Dinosaur. Hinrichs had transmitted Hanna's report to the General Land Office on April 11. When Hinrichs showed the report to W. M. Huntsberger of D&RG, Huntsberger stated "that the railroad company would like very much to have the use of this report for the purpose of reproducing such photographs and printing such portions of the descriptive matter as they desire in connection with certain advertising matter to be published by said company....." Douglass, by the way, provided some of the illustrations for the report.

7 - Letter, Paul to Douglass, November 16, 1916. Douglass correspondence.

8 - Ibid.

9 - Letter, Hanna to Commissioner, General Land Office, March 23, 1916. Nat. Archives File 580, Dinosaur. Marked "confidential."

10 - Ibid.

11 - Vernal Express, September 1, 1916.

12 - Ibid.

13 - Ibid.

14 - Letter, Hamman to Commissioner, General Land Office, December 13, 1916. Nat. Archives File 580, Dinosaur.

15 - This register is with the Douglass correspondence. Some of the entries for the period through 1922 are particularly interesting:

"June 25, 1919: Mrs. Susa Young Gates - Salt Lake City. Who has greatly enjoyed the visit to this interesting region; and whose pleasure has been greatly augmented by

the scientific explanations of Prof. Douglass. O, the infinite patience of a Scientist! Not even a forbearing mother may guess at the long patience of a scholar like Prof. Douglass. May he not weary in well-doing!"
"Sept. 21, 1920: Birthday greeting to the noble wife of Prof. Douglass."
"Sept. 21, 1920: Ruth May Fox, Salt Lake City - O how wonderful are the mysteries of God and the patience and genius of Prof. Douglass and his wife."
People from all over the United States, and even from as far away as New Zealand, were recorded in the register.

16 - Vernal Express, July 14, 1916.

17 - Vernal Express, September 17, 1920.

18 - Vernal Express, November 24, 1916.

19 - Vernal Express, January 12, 1917.

20 - Vernal Express, April 13, 1917. The ladies provided the lunch. "Dr. Douglass had a fine lot of potatoes roasted in the sand. Mrs. Douglass had prepared whipped cream, sugar, and hot coffee. .....Superintendent Thompson discovered a Dinosaur shoe.... Professor Lybbert was kodacked by one of the ladies and expressed his intention to have the resulting picture enlarged..... Master Gawain Douglass told some of the people why they were unable to find arrowheads. He said 'you don't look in the right place.'" The outing obviously was a great success!

21 - Vernal Express, November 30, 1917.

22 - Vernal Express, November 14, 1919.

23 - Douglass had probably been encouraged to give these lectures by F. M. Young of Provo, who visited Douglass at the quarry in July of 1919 and was so impressed by the "greatest dinosaur quarry in the world" that he proposed to the Vernal Express that "the three great schools of Utah ought to engage Prof. Douglas to give their students a series of lectures on the oldest animals and their haunts. No man living today knows so much about the Utah chapter as Prof. Douglas of the dinosaur quarry at Jensen." - Vernal Express, July 25, 1919.

24 - Vernal Express, December 16, 1921. Holland even plugged the quarry at the American Association for the Advancement of Science annual meeting in St. Louis on December 30, 1920, when he observed "How little we appreciate the wonders right at our doors. Everyone should take the time necessary to visit the dinosaur quarry and see this wonder before the bones are all shipped away....." - Vernal Express, January 2, 1920.

25 - Vernal Express, February 4, 1921.

26 - Ibid.

27 - Ibid.

28 - Letter, Anderson to National Park Service, November 1, 1921. Nat. Archives File 580, Dinosaur.

29 - Letter, Holland to Cammerer, November 8, 1921. Nat. Archives File 580, Dinosaur.

30 - Vernal Express, December 2, 1921.

31 - Vernal Express, December 16, 1921.

32 - Letter, Anderson to National Park Service, May 9, 1922. Nat. Archives File 580, Dinosaur.

33 - Letter, Cammerer to Anderson, May 17, 1922. Nat. Archives File 580, Dinosaur.

34 - Ibid. For example, Cammerer pointed out, as did Holland before him, that "This monument is in truth nothing except a gash in the rocks on the mountainside....."

35 - Letter, Douglass to Holland, May 17, 1922. Douglass correspondence.

36 - Letter, Goodwin to Douglass, July 21, 1922. Douglass correspondence.

37 - Letter, Anderson to Holland, May 22, 1922. Douglass correspondence.

38 - Letter, Douglass to Holland, June 1, 1922. Douglass correspondence.

39 - Copy of notices. Douglass correspondence.

40 - Letter, Douglass to Holland, June 5, 1922. Douglass correspondence.

41 - During the week preceding the publication of the notice there was se vere flooding throughout the Uintah Basin, due to heavy snow melt in the mountains, and most of the bridges and roads were washed out. Because of this, Douglass was able to assure Holland that, earlier fears notwithstanding, handling visitors at the quarry was, for the moment, no problem. - Letter, Douglass to Holland, June 9, 1922. Douglass correspondence.

42 - Letter, Douglass to National Park Service, Portland, Oregon, July 8, 1922. Douglass correspondence.

43 - Letter, Goodwin to Douglass, September 7, 1922. Douglass correspondence.

44 - Vernal Express, June 16, 1922.

45 - Vernal Express, July 7, 1922. The group made the trip on July 3.

46 - Vernal Express, September 15, 1922.

47 - Postscript of June 27 on letter, Douglass to Holland, June 23, 1922. Douglass correspondence.

48 - ".....My present plan is to send Mr. Peterson and Mr Coggeshall out to your quarry about the middle of August and after they have gone over the ground with you I would like to have a report from each of you gentlemen as to the best policy to pursue in the work....." - Letter, Stewart to Douglass, July 8, 1922. Douglass correspondence.

49 - Letter, Douglass to Coggeshall, July 20, 1922. Douglass correspondence.

50 - Letter, Douglass to Stewart, September 20, 1922. Douglass correspondence. Douglass sent a bill for $60.00 to Stewart for boarding the men for 20 days.

51 - Vernal Express, August 25, 1922.

52 - Ibid.

53 - Vernal Express, September 15, 1922.

54 - Albright had written Toll on January 4. - Letter, Toll to Director, National Park Service, October 17, 1922. Nat. Archives File 500, Dinosaur.

55 - Ibid.

A MONUMENT FOR VISITORS

III. Dr. A. C. Boyle and the Depression Years (1933-1938)

Earl Douglass had been a unique mentor of the dinosaur quarry, interested in it not only for its scientific value but for its educational possibilities as well. The likelihood of another scientist with similar interests assuming a role in the promotion of Dinosaur National Monument was slight indeed, yet such a man, a mirror image of Douglass in many respects, did appear during the depression years, Dr. A. C. Boyle, Jr., former geologist for the Union Pacific and one-time professor of geology at the University of Wyoming. He came to Dinosaur towards the end of 1933 to supervise the operations of the Utah C.W.A. project there.

At this time the quarry was relatively inaccessible for the casual visitor because of the poor condition of the entrance road, which was "very dangerous on the dugway near the Green River in wet weather....."[1] In fact, in early January when a party including J. LeRoy Kay, D. H. Madsen of the National Park Service, W. C. Crump of the Utah Fish and Game Department, and Dr. Boyle tried to visit the quarry, they had to resort to horseback to get across the "dangerous and slippery" blue dugway between the Mancos shale hills and the Green River.[2]

Actually there was some selfish advantage in having a poor entrance road to discourage tourist travel at this time, "inasmuch as it would be impossible for [Dr. Boyle] and the workmen to do much work if their time was taken up explaining details of the work being done and acting as guides and police."[3] However, efforts were made to get the road graveled before another January

storm made it impassible again for autbmobile travel.[4] And shortly the Road Commissioners alloted $1400 to improve the access road and thus encourage increased visitation.[5] Such improvements as were made to the road were only temporary, however; and six months later a Salt Lake City politician (Leonard A. Brennan, Democratic county chairman of Salt Lake County) promised, after a visit to the monument, "to make a personal call on the state road commission and see if some repair of a permanent nature could not be made of the highway over the blue dugway, on the way to the quarry."[6]

During the winter and spring of 1934 Boyle hosted a variety of groups at the monument, and a register was set up to record the visitors. A picnic for seventy-five, including C.W.A. workman and their wives, was held on a mild February day, and after lunch Boyle took some of the visitors out to see the fossil beds, "helping those who wished to hunt for various fossil remains, such as fish scales and 'Devil's Ink Pens."[7] In March the Fossil Hunters Patrol from the Jensen Boy Scouts made an overnight hike to the quarry,[8] and in April a large crowd including the Boyles enjoyed a picnic dinner at Split Mountain Gorge.[9]

There were some special visitors, too, including Mrs. Earl Douglass from Salt Lake City who with several friends toured the quarry in April and was "much impressed with the work being accomplished there."[10] Also, David Madsen and H. Langley of the National Park Service made an inspection tour in early March, Langley recommending to Boyle that "tourist traffic be discouraged at this time as it would prevent the workmen from doing their work properly."[11]

In March, following in the footsteps of Douglass, Boyle

commenced a series of evening public lectures on geology at the Jensen School House, which were well attended.[12] As a reporter noted, "Although of a technical and scientific nature [Dr. Boyle] has the happy faculty of making the layman understand him."[13]

It appeared that Boyle's contact with the public might be terminated on April 28, inasmuch as all C.W.A. work in the nation was to cease on that date,and thus the C.W.A. camp at Dinosaur would be discontinued.[14] There was some possibility of continuing the project under the Civilian Conservation Corps, and a representative of Governor Henry H. Blodd of Utah, after visiting with Boyle, made a strong recommendation that activities at Dinosaur be supported through the C.C.C. It was emphasized that "tourists have already made inquiry about the wonders to be seen at the Dinosaur quarry. No doubt there will be several thousand tourists this summer who will visit there."[15]

Although the C.C.C. project did not materialize, there was established at Dinosaur in June an F.E.R.A. camp, and Boyle was brought back from Salt Lake City to supervise this enterprise, which would be concerned with continuing the excavation work at the quarry. It was noted that the men would "be instructed by Dr. Boyle in the work and they will receive the same advantages given students of a course at the Columbia University on geology, taught by Dr. Boyle. The instruction will give the men a splendid background of geology and will stimulate a greater interest in the field of science."[16]

By mid-June the new F.E.R.A. camp was operating, and in the first three weeks of renewed activity at the quarry there were over 250 tourists.[17] During the month of July some 427 persons

registered at the Monument, as many as 79 coming on one day (July 4).[18] Most of the visitors came from faraway states (only 6% from Utah), and as Boyle commented, "Although the days are hot, these good people walk with me to points of interest on the Monument, and they frankly state that the possibilities for future development are unequalled in any other part of our country...."[19] Many of the visitors wrote back to Boyle, thanking him for his interpretive services--"I will never forget the fascinating hours we spent there, nor your kindness and interest in our visit"--and Boyle apparently did his best "to give honest publicity to what we have here and the visitors appear to be amply paid for their efforts in trying to reach the place."[20]

During the summer many interesting people and groups visited the monument over an entrance road which by September had been greatly improved.[21] There were three scientists from Germany,[22] a geology professor and twelve students from the University of Utah who spent a number of days studying the fossils and geology of the region,[23] LeRoy Kay and a group representing the National Geographic Magazine,[24] a Stanford University professor and his family,[25] Utah Governor Blood and his wife and several state senators,[26] a Kentucky high school lady principal,[27] students and professors from the University of California;[28] Dr. Barnum Brown on an aerial survey of the Monument area (accompanied in the plane by Dr. and Mrs. Boyle),[29] and three representatives of the Utah State Museum Association.[30] The latter party received a royal tour of the quarry by Boyle and were particularly impressed because Dr. Boyle gave his F.E.R.A. workmen a nightly lecture on subjects in his field.[31]

With increased visitation to the monument came increased

visitor problems. Despite repeated instructions to the contrary, some local people and tourists were exhibiting a disposition to carry away "specimens of bone, fish scales, gastriliths, etc."[32] As a case in point, Frank Wellman, a Boy Scout leader from Jensen, had a large and valuable collection of fossils from the Monument area, collected over a number of years.[33] At the suggestion of the regional National Park Service representative, David Madsen, Boyle called the regulation against collecting to Wellman's attention and received assurance that the collection would be transferred to the monument.[34] Except for a few gastroliths on exhibit in a drugstore in Vernal, Wellman's collection was carefully safeguarded at his home; and in mid-fall of 1834 it was boxed up and turned over to Boyle.[35] Interestingly enough, earlier in 1934 Madsen had predicted that "in order to protect the exposed fossils at the monument it may be necessary to employ special help of some nature. In the past tourists and even our own people visiting at the quarry have destroyed exposed fossils by chipping off what they considered a souvenir. With thousands of visitors coming as anticipated, danger of destruction by vandals will become still greater."[36] Now, in early September, Madsen recommended that Boyle post "proper signs...at points where they are sure to be seen, prohibiting the taking of any specimens of any nature. If necessary to protect the Monument, you should refrain from taking parties to places where they will be able to remove specimens without being detected. Everyone should be advised that it is unlawful to remove even the simplest specimen. We are directly responsible for the strict enforcement of the Law."[37]

Boyle complied with the sign-posting suggestion and imaginatively went on further to conjecture that "Even temporary housing facilities, for the finds which are constantly being made in this region, would be a strong incentive for acquiring everything of a specimen nature which rightfully belongs to the Monument and its environs."[38]

During this period Boyle was giving geology lectures every night to fifty or sixty men of the monument's public works camp and on Saturdays taking them out on geological field trips. These educational efforts, Boyle felt, increased the men's personal interest in the quarry, encouraging them to collect specimens "for lecture demonstrations" and "unconsciously develop into advance publicity agents for the things which help to advertise the monument. Friendly letters have their effect in disseminating accurate and, at the same time, fundamental facts about the possibilities of this great monument....."[39]

Boyle was eager to publicise the monument himself and jumped at a suggestion made by Dr. Barnum Brown of the American Museum of Natural History during an autumn visit at Dinosaur. Brown felt that it might be possible to procure, for the asking, the mechanically operated dinosaur exhibit from the Chicago World's Fair....and Boyle quickly visualized the exhibit set up (on a tract of land leased by the government for the purpose) on the main highway at the entrance road, serving as "one of the best means of advertising the work here that I know of at the present time....."[40]

Dr. Boyle even carried out his publicity campaign for the quarry to the 1934 annual meeting of the Uintah Basin Industrial Convention:[41]

> At the close of the UBIC...the talk veered around to the dinosaur. It seems that Dr. Earl Douglas discovered quite a herd of them several years ago.... ....the

invaders encountered Dr. A. C. Boyle, poet, geologist, archeologist and optimist, who was in chafge of the game preserve, familiar with the ways of the dinosauria and willing to act as guide.

Dr. Boyle knows his fossils and has immortalized them in song and epic. His ode to the one he is now engaged in quarrying entitled "O, Dinosaur! O, Dinosaur" is a masterpiece of mingled scientific lore and poetic fancy which called forth tears of regret over the poor things untimely taking off.

Governor and Mrs. Blodd and party arrived in time to enjoy the program.

RETURNED to

As the year of 1934 came to a close, Dr. Boyle was back at his teaching, offering a course in general geology through the University of Utah Extension Department, every Wednesday evening from 7:00 to 9:00, starting early in January. Beside the classwork there were to be several short field trips in the region. By the end of November a group of 25 had already enrolled, and Boyle expected up to 40 by registration's end on December 5.[42] The Lions Club was pushing the Monument as a tourist attraction, urging that "there be held more than one Dinosaur Day," that photographs of the quarry operation and specimens be obtained from the Carnegie Museum and the University of Utah, and that advertising be gotten out to service stations. [43] Visitation to the monument during November exceeded sixty people but was naturally dropping off as winter approached.[44]

Boyle's pattern of services for the public was to continue throughout his stay at the monument. In July of 1935, upon the recommendations of Madsen and Dr. Harold Bryant, Boyle was officially designated as "Acting Custodian of Dinosaur National Monument until further notice" by Park Service Director Cammerer.[45]

His University of Utah extension course in geology ended in early May. The thirty-three participants gained an abundance of information on the geological background of Ashley Valley and

especially the region of the Monument, where considerable time in the field had been spent.[46] Dr. Boyle reported that the amount of work accomplished together with its high quality is unusual, and in general reflects the painstaking effort of every member who completed the course.[47]

Other adult courses in general geology, mineralogy, and rocks were planned for the fall, to be given from 6 to 7 each Monday or Wednesday at the Uintah High School, plus a number of field trips.[48] In recommendation of Boyle's efforts, the Vernal Express observed that "business men and women of Vernal and surrounding communities, especially service station attendants, should know the interesting facts of the geology of this particular section, to be able to tell the same to our tourist visitors."[49]

Boyle also continued his classes for the F.E.R.A. workers: "Lectures are given daily from seven to nine-thirty. Elementary phases of geology, chemistry, physics, astronomy, etc., are discussed together with the origin of certain important minerals. These lectures are illustrated with lantern slides and blackboard drawings."[50] Some ten or twelve of these men had received sufficient training in geology and paleontology so that they could "guide visitors around the monument explaining the various features to them."[51]

Tourists were visiting the Monument in increasing numbers, so that towards year's end (1935) it was estimated that some 2500 had come to the quarry.[52] Eighty were recorded for Sunday, July 7;[53] and on Sunday, October 13, forty-seven were present for an evening tour by lantern light led by Boyle.[54] Special groups like the eleven students and three geology professors from Brigham Young University continued to use the Monument area for field work.[55] And a Harvard

professor who visited the quarry wrote back to Boyle that "the time spent at the Dinosaur quarry was the outstanding thrill of the entire trip and the big experience of his life."[56]

Dr. Boyle publicised the Monument at the annual U.B.I.C. meeting in August again, with a lecture on the Monument development and features and "the most remarkable display of fossils and illustrations yet gathered on the Dinosaur."[57] His presentations were "of especial interest to old and young."[58] Also in mid-August there was a special radio broadcast over KSL (Salt Lake City) by Dr. J. E. Broaddus on Split Mountain "as an outstanding scenic area of the state of Utah."[59]

In early October of 1935 Dr. Boyle palyed host to members of the Vernal Lions Club, taking them on a tour of the quarry at 5:00 p.m., followed by dinner with the F.E.R.A. workers.[60] It was pointed out that "pen and pencil sketches have been made of the dinosaurs by the men and many have been placed upon envelopes for mailing. Letters mailed at the Jensen postoffice with such a drawing have been accepted without postage, throug the courtesy of Postmaster H. J. Chatwin. One particular sketch called for the use of a quantity of red coloring. The entire camp supply of mercurochrome in the camp was exhausted before the superintendent discovered the men had been using the liquid to color their envelopes.[61]

Boyle's personal efforts on behalf of the Monument and visitors were appreciated by N.P.S. representative Vincent Vandiver, regional geologist, who visited the Monument on October 14, 1935. He noted that "Dr. Boyle is living in a one-room tent with his wife. He uses this room to live in, to store some two thousand dollars worth of personal field equipment, to take care of certain

laboratory work and to entertain visitors who come to see the monument. He has several tables in the open outside with valuable specimens which deteriorate with the weather. A temporary shelter for this material as well as Dr. Boyle's personal field equipment should be established until the museum is completed. Many of the specimens will form an important part of the collection for the museum."[62]

On Thanksgiving Day of 1935 Dr. Boyle played host at the quarry to fifty boys from the Vernal C.C.C. camp. "The visit to the quarry proved to be of great educational value. Dr...Boyle.... explained in a most interesting way the process in the formation of the fossils. His explanation was clear and greatly appreciated by every member of the camp who spent the few hours with nature's prehistoric animals."[63] And again, as the year closed, Boyle was getting ready for his forthcoming University of Utah extension courses in physical geography and general geology, scheduled to start in early January at the Uintah High School. Those registered for the course were "students ranging from the Sophomore class to their instructors in the high school, along with aged and young parents from Vernal and surrounding communities."[64]

In mid-November the F.E.R.A. camps in Utah were closed, including the one at Dinosaur. However, the Dinosaur operation continued under the W.P.A., with Boyle remaining on a temporary basis as supervisor. However, after November 15 he was no longer on the government payroll. A month later government officials were in the process of finding a successor to Boyle, one who possessed his essential qualifications for the particular job, but were not having any particular amount of success. Several names had been presented to Madsen, but he felt unable to judge any of the

men involved, so passed the names on to Congressman Abe Murdock. The Congressman, in turn, wired the Director of the National Park Service to withhold appointment of a successor to Boyle pending Murdock's arrival in Washington on January 1.[65]

The exact status of Dr. Boyle's situation at Dinosaur was somewhat obscure back in Washington, but Dr. Bryant made a realistic plea for Boyle's retention in charge of the quarry:[66]

> This project requires a supervisor who has had experience in fossil bone quarrying.... All the work which has been done to date will be a total loss if quarrying is continued into the fossil bones and these are damaged through improper handling. The situation is much like having the dentist prepare a tooth cavity and then calling in a blacksmith to fill it.

As the situation finally worked out, Boyle was retained as supervisor of the W.P.A. quarry project and acting custodian of the Monument until the area was enlarged in July of 1938.

Dr. Boyle was busy with the University of Utah extension courses by the end of January, 1936, classes being held both at the Uintah and Alterra High Schools.[67] The popularity and impact of Dr. Boyle's courses was borne out when, in late May of 1936, some of the past and present students organized a Saurus Club, to "sponsor field trips during the summer and also a number of entertainments."[68] The last class field trip of the spring, by the way, was to the dinosaur quarry.[69]

In August arrangements were being completed for more evening classes through the University of Utah Extension Division in "General Geology, Mineralogy, Physical Geography and National Park Geology," taught by Boyle, and a little notice advertising the courses was printed in the Vernal Express by Boyle, with the final comment "Why not learn something about the wonderful land in which we live?"[70]

In early October Boyle had two people registered for general geology, two for physical geography, nine for mineralogy, and no one for National Park geology.[71] Only two courses, mineralogy and general geology, finally began, on October 19.[72]

Starting in early 1936 Boyle began sending in monthly reports on the operation of the Monument to the National Park Service, with inclusion of the monthly number of visitors. Thus, after the improved approach road was completed, between June 1 and the end of the year there were 2592 visitors reported for the Monument, despite the fact that during the latter part of this period the quarry wasn't officially open for inspection.[73] In May there had been 1169, a record![74]

During the summer as many as 86 visitors came to the Monument on a single day,[75] twelve states were represented by the 300 visitors in October,[76] and the 45 who came in December arried in ten trucks, cars, and bobsleds.[77] Boyle and his two guide-assistants were busy lecturing to the visitors, in August with "as many as five lectures per day covering physical and geological histories of the dinosaur and monument prior to taking visitors to see the quarry."[78] Twenty-three lectures were given to groups from 29 states in September, one starting as late as 10:00 p.m.[79] Boyle emphasized that "special efforts are made so that no individual who desires to learn about the dinosaurs leaves the Monument disappointed. It is safe to state that in every instance our visitors leave the Monument with (1st), definite information about the dinosaurs, and (2nd), a strong desire to return and learn more of the fascinating story told in the rock formations of this region."[80]

In July of 1936 a storage building was completed at the quarry and was "now being used for housing bone specimens which would be

destroyed if exposed to storms. Several tonsof specimens now there."[81] This storage building, which also served as the Monument's museum, was scheduled to be dedicated on August 27. Speaker for the ceremony was to be Hillory A. Tolson, acting associate director of the National Park Service.[82] During the summer the storage room remained open from 6 a.m. to 10 p.m.;[83] but as winter approached, since there was no heat in the room, the hours were shortened to 7 a.m. to 6 p.m.[84] "Visitors can register in the storage room, as well as sit down and rest."[85] Also, Boyle had made arrangements to borrow a number of large dinosaur bones from the U.B.I.C. (the bones to be returned annually for the convention),[86] and there were Indian artifacts and other items of pertinent interest on display.[87] In December, with the crowds dropping off, the quarry guide "had much free time from guiding visitors and spent it preparing specimens and samples for exhibit, to be put on exhibit in storage room. Specially trained workers in camp are preparing paintings of dinosaurs, in storage room groups of visitors can be assembled to view photos and hear lectures on geological history of the region."[88]

Again in 1936 there were the usual special groups of visitors, hosted either by Dr. Boyle or his assistant, Mr. Hicks. In mid-winter, for example, thirty C.C.C. boys were given a tour of the Monument by Hicks.[89] The March meeting of the Witbeck American Legion Post No. 11 was held at the Monument, and Boyle "gave an interesting talk on the work being done there and the historical data of the Dinosaur quarry."[90] Another group of C.C.C. boys from the Vernal camp were at the Monument in May and were lucky enough to have Dr. Pack of the University of Utah, as well as Hicks, talk to them.[91] On July 31, the Transylvania State College of Kentucky annual tour (of 37 persons) visited the Monument.[92]

One of the noteworthy events of 1936 at the Monument was the first Memorial Day service for Earl Douglass, held at the burial plot of his father and sister at 4:30 p.m., to "avoid the excessive heat generated by the cliffs of sandstone near by."[93] The caravan from Vernal was to leave at 3:30; and over 200 people finally assembled, seated on chairs provided by Dr. Boyle.[94]

> In his opening remarks Donald R. Barr, president of the Vernal Junior Chamber of Commerce, stated that the Vernal Junior Chamber of Commerce would make this an annual event and that the services were held in honor of Dr. Douglass as well as those buried there, even though he was buried in Salt Lake City. The speakers to follow stressed the idea that it was hoped the body of Dr. Douglass would also soon rest there, that all might pay their respects to the great scientist, who had labored so patiently here to reveal the truth, which the past held in store for mankind to learn.
>
> Music was furnished by several members of the Uintah high school band..... 'America' was sung by the congregation.
>
> The invocation was by Floyd C. Noel and the benediction by Kenneth Stringham.
>
> Attorney Wallace Calder, in well-chosen words told of the years of labor of Dr. Douglass at the Dinosaur quarry and his successful efforts in securing the place set apart by congressional action with a bill introduced by Don B. Colton, U. S. representative at the time, designating the Dinosaur quarry as the Dinosaur National Monument. He also paid a loyal tribute to Mrs. Douglass and her work there as a school teacher in the same place with seven pupils.
>
> Dr. A. C. Boyle read a poem composed by members of the transient camp in honor of the work of Dr. Douglass.
>
> Rev. Willard Spence, of the Congregational Church, gave the memorial address, comparing the past as shown by the upturned rocks revealing the burial of the monsters of millions of years past and the intelligence of man as at the present moment was in a unique way memorializing the past and present and thus honoring the work and manhood of Dr. Douglass.
>
> The conclusions of all speakers was to the effect that the truths revealed through the buried past and the life work of Dr. Douglass in uncovering the same, was a boon to mankind.

The winter of 1936-1937 was a rough one at the Monument. Almost two feet of snow were reported for January, an all-time record, and for the first time in over a decade the depth of the

snow warranted use of bobsleds for hauling in coal, ice, hay, alfalfa and wood.[95]

Only six visitors turned up in January[96] and seven in February.[97] But whether there was one tourist at the quarry or a hundred, they were well received by Boyle and his men: "At no time ever have groups of two or three persons, or even a single individual, been denied the same courtesy of a comprehensive explanation of the field evidence which is exhibited at the Dinosaur National Monument. The lectures by the Custodian usually precede the field trip to points of interest on which the guide points out the unmistakable confirming proof as revealed to them by fossil evidence in solid stone...."[98]

Although Dinosaur National Monument was hard to reach this January, its fame spread across the country as Life Magazine carried a four-page illustrated article on Utah dinosaurs and the quarry.[99]

This good publicity, perhaps,[100] and an early spring in March encouraged increased travel. Despite an almost impassible entrance road, 59 visitors came in on Easter Sunday; and one intrepid tourist commented "The roads were in very bad condition, but I would drive over roads twice as bad and go many times the distance to see this place."[101] Indeed, for the year ending April 30, 1937, 4141 people had visited the Monument, a great increase over previous years. On April 24 alone there were 111 people at the quarry, most of them notables from the various civic organizations and clubs of northern Utah, coming in a group on a "Good Will Tour."[102] There was one guide on duty at this time, and his entire time was taken up in April with visitors.

Although May travel was down 30.9% over May of 1936, there were still 808 people,[103] including many "boys and girls of the public

schools in the Uintah Basin..."[104] "In the public schools, especiallyll in Utah, the teachers offered instruction on dinosaurs, and as a part of the requirements for completion of such a course, each tudent was obliged to take a field trip to some point where dinosaur remains could be found and identified... In most instances the Trustees and Boards of Education recommended an inspection trip to the Dinosaur National Monument, as a concluding feature of the closing of the year's work."[105] There were 373 students who came in 12 buses and seven trucks.[106]

Again for Memorial Day there wasnan impressive program planned for the Monument to honor Earl Douglass, the "Second annual Memorial exercises," with special addresses, bands playing, congregational singing; and the Sons of the American Revolution to give recognition to participants in the patriotic oratorical contest.[107] However, a severe rainstorm unfortunately canceled the ceremony.[108] Mrs. Earl Douglass had come over from Salt Lake City and had given one of the main speakers, William F. Bulkley, Archdeacon of the Utah diocese, a letter to be read by him at the services:[109]

> I wish to express my appreciation of your kind remembrance of Mr. Douglass, his father and his sister.
>
> Mr. Douglass was a real pioneer--he loved the wilderness--he was a trail breaker. He loved nature--the simple, the plain, the beautiful--the truth.
>
> Your establishing this tradition on this day, in this place, is a very fitting tribute to his nature. I like to call it a monument. It is a worthy monument that you have erected to the memory of a man who left a work for you to complete.
>
> His spirit is with us, and if he were here in person today, with tears in his eyes, he would say, "God bless every one of you.

Official sign boards calling attention to the Monument were finally erected on U. S. 40 at the entrance road in June; and

"since these sign boards were erected, an entirely different class of visitors has registered. Men and women of national and international fame and achievement in all walks of life have made their way to this Monument."[110] Perhaps the most exciting visitor was ex-President Herbert Hoover, who paid the Monument a visit on June 14.[111] It was amusing to note that the signs were erected after a member of the Utah Highway Department, "attempting to find the approach road, upon which repairs had been asked for by the National Park Service, missed the road entirely and did not know about its location until he discovered he was some twenty miles east of the state line in Colorado."[112]

By the end of 1937, 6244 visitors had come to Dinosaur National Monument during the year, "the largest number who have ever inspected the Monument for any similar period."[113] And they had come from all over the world--South Africa, France, Holland, New Zealand, England, Hawaii, Canal Zone, Canada, Mexico, Alaska.[114] The increased visitation was due to a number of factors, such as the Life Magazine coverage, the new signs at the entrance road, an article in Science Digest, the improved condition of Highway 40, favorable summer weather, a more enlightened public.[115]

Visitors were impressed by what they saw and were told, though perhaps not to the degree envisioned by Dr. Boyle:[116]

> Thousands of spontaneous and usually worth-while remarks are constantly being made by those who visit the Monument for the first time, as well as upon subsequent trips. In a way these utterances are the blow-off results of pent-up emotions which have been simmering for a long time and suddenly have been fired to the explosion stage which ultimately terminates in beautiful unhampered appropriate verbal expressions. To quote, even a fractional part of such expressions, would be outside the province of this report, but a general cross-section which reflects public reaction and thought may be obtained

> from the following which is typical: "We left the Monument that night feeling the world was glorious. The bigness of the rocks, the bones, the canyon, the valley, and the river gave us courage to go on our tasks with a grip that was fun. I think I have never seen more glorious coloring in mountains anywhere. The good old State of Utah has much to offer if we but knew it.

Another visitor (Cyril Pennil, District Manager, Neon Sign Company, Denver, Colorado) told Boyle that "this has been an unexpected feast of knowledge, and revelation. I never knew that so small an area could be so intensely interesting. The National Park Service is certainly doing a worth-while job."[117]

Special requests for interpretive services were always granted, and either Dr. Boyle or the "Junior Mineralogist" saw to it that the groups were well hosted. "Brief talks of this character, with blackboard sketches are given on Saturday afternoons and on Sundays of each week-end, as well as after office hours. In not a few instances, the traveling public has been taken to the quarry site, and shown the bones in place, by lamp light."[118]

In addition to the lectures and guiding provided by Dr. Boyle at the quarry, he continued to extend educational services outside of the Monument. Another series of courses through the University of Utah Extension Division were planned for the winter of 1937-38, to include geology, physical geography, mineralogy, and a class in National Parks geology. The first meeting of the latter course was to be on November 22 in the Ag room of the Uintah High School.[119] Also, Dr. Boyle was called away from the Monument on several occasions to give special lectures, such as the one on October 14 to the 47 members of the Fort Duchesne Women's Club on dinosaurs.[120]

Although visitation was up in January of 1938 over the previous January, there was still free time for the guide to work on a

variety of peripheral activities relative to the interpretive program. "Considerable time is spent....in miscellaneous work about the premises, keeping the storage room, where our exhibits are on display, clean and warm; short field trips for collecting additional specimens and study of the specimens already secured and on display to increase his knowledge of these for the benefit of the visitor; and other miscellaneous related work demands his attention from time to time."[121]

As the year proceeded, travel records were broken every month: 138 visitors in January, 108 in February, 112 in March, 706 in April with 368 alone on Easter, 835 in May, 1361 in June, and a crowd of 2251 in July.[122] Visitors were arriving at the Monument from 5:30 a.m. to 9:00 p.m., or even later.[123] When the designated guide was unable to take care of the crowds (and as it was he would often work 12 to 15 hours a day)[124], Dr. Boyle would help out, putting in 57 hours beyond his regular work hours in May, 64 in June, and 69 in July, giving special lectures and showing around special visitors.[125] Next to holidays, Sundays were the busiest visitation days, followed by Saturdays.

"During the entire month of May the hillsides were one mat of wild flowering plants. Every tint and shade of color was gorgeously displayed in blossom and leaf."[126] Boyle estimated that "ten times as many flowering plants made their appearance this Spring than in any previous year in our headquarters area."[127] And to protect these many flowers from the many visitors it became necessary to erect numerous signs inscribed "Admire the Flowers, Don't Pick Them."[128]

The Monument--and the dinosaurs--had been receiving a full share of publicity in 1938, through magazine articles, through

the newspapers, in the publicity on the impending addition to the Monument; there was even talk of a special cachet to be stamped on air mail letters sent out from Vernal, with a sketch of a dinosaur and an inscription "Take U. S. 40 to Dinosaur National Monument, Vernal, Utah, Air Mail Week, May 15-21, 1938."[129]

Even more subtle, but certainly of inestimable importance, was the good reputation which Dr. Boyle and his employees had built up for what until July 14, 1938, was indeed a very small national monument, restricted in scope, development, and financial support. When President Roosevelt added the magnificent wilderness canyon lands to the existing reserve in mid-July, Dinosaur National Monument already had a tradition of visitor service, started by Earl Douglass and brought to a memorable flourish by Dr. A. C. Boyle.

References Cited

1 - Letter, Madson t o Cam meror, January 9, 1934. Nat. Archives Filo 2159, Dinosaur.

2 - Vern al Empress, January 11, 1934.

3 - Ibid.

4 - Ibid.

5 - Letter, Madson to Cammerer, January 9, 1934. Nat. Archives Filo 2159, Dinosaur.

6 - Vernal Empress, July 12, 1934.

7 - Vernal Empress, February 15, 1934.

8 - Vern al Empress, March 22, 1934.

9 - Vernal Empress, April 26, 1934.

10 - Ibid.

11 - Vernal Empress, March 8, 1934. Langley was an engineer from the San Francisco office of the National Park Service

12 - Vernal Empress, March 8 and March 15, 1934.

13 - Vernal Empress, March 22, 1934

14 - Vern al Empress, April 26, 1934

15 - Ibid.

16 - Vernal Empress, June 7, 1934.

17 - Vernal Empress, July 12, 1934.

18 - Vernal Empr ess, September 13 and July 12, 1934.

19 - Letter, Boyle to Madson, Ju ly 24, 1934. Nat. Archives Filo 2159, Dinosaur.

20 - Ib id.

21 - Vernal Empress, September 13, 1934.

22 - Vernal Empress, August 16, 1934.

23 - Vernal Empress, July 26, 1934.

24 - Vernal Empress, August 9, 1934.

25 - Vernal Empress, September 13, 1934.

26 - Vernal Empress, August 9 and August 16, 1934.

27 - Vernal Express, September 13, 1934.

28 - Ibid.

29 - Vernal Express, September 20, 1934. Brown stated that "they could learn more concerning the extent of dinosaur bearing strata in one hour traveling by plane than thru a whole summer's work traveling on the ground."

30 - Vernal Express, September 6, 1934.

31 - Vernal Express, September 13, 1934: "Dr. Boyle is very enthusiastic in his social work...."

32 - Letter, Hadson to Boyle, September 10, 1934. Nat. Archives File 2159, Dinosaur.

33 - ~~Letter, Boyle to Hadson, Hadso~~ Ibid.

34 - Letter, Boyle to Hadson, Septemb or 24, 1934. Nat. Archives File 2159, Dinosaur.

35 - Ibid; Letter, Boyle to Hadson, October 25, 1934. Nat. Archives File 2159, Dinosaur.

36 - Vernal Express, January 11, 1934.

37 - Letter, Hadson to Boyle, September 10, 1934. Nat. Archives File 2159, Din osaur.

38 - Letter, Boyle to Hadson, September 24, 1934. Nat. Archives File 2159, Dinosaur.

39 - Letter, Boyle to Hadson, October 25, 1934. Nat. Archives File 2159, Dinosau r.

40 - Letter, Boyle to Carmoror, November 22, 1934. Nat. Archives File 2159, Dinosaur.

41 - Vern al Express, December 13, 1934.

42- Vernal Express, November 29, 1934.

43 - Vernal Express, October 4, 1934.

44 - Letter, Boyle to Hadson, December 4, 1934. Nat. Archives File 2159, Dinosaur.

45 - Letter, Tolson to Carmoror, July 23, 1935. Nat. Archives File 2159, Dinosaur.

46 - Vernal Express, May 9, 1935. "The course comprised 29 lectures of two hours each. Twenty-seven members of the class completed the work for credit at the university. A credit of 5 hours, thus earned, can be applied on any course for graduation." - Vern al Express, May 23, 1935.

47 - Vernal Express, May 23, 1935.

48 - Vernal Express, October 17, 1935. The geology course was to be for five hours credit, the mineralogy and rocks for three hours apiece, through the University of Utah Extension Service. - Vernal Express, September 12, 1935.

49 - Vernal Express, September 12, 1935.

50 - Letter, Vandiver to Trager, October 21, 1935. Nat. Archives File 2159, Dinosaur.

51 - Ibid.

52 - Ibid.

53 - Vernal Express, July 11, 1935.

54 - Letter, Vandiver to Trager, October 21, 1935. Nat. Archives File 2159, Dinosaur.

55 - Vernal Express, May 23, 1935.

56 - Vernal Express, October 10, 1935.

57 - Vernal Express, July 25, 1935.

58 - Vernal Express, August 15, 1935.

59 - Vernal Express, Auguet 29, 1935.

60 - Vernal Express, October 10, 1935.

61 - Ibid.

62 - Letter, Vandiver to Trager, October 21, 1935. Nat. Archives File 2159, Dinosaur.

63 - Vernal Express, December 5, 1935.

64 - Vernal Express, December 5, 1935.

65 - Letter, Madsen to Director, N.P.S., December 20, 1935. Nat. ARchives File 2159, Dinosaur.

66- Letter, Bryant to Wirth, January 7, 1936. Nat. Archives File 2159, Dinosaur.

67 - Vernal Express, October 22, 1936. There were 61 students registered, altogether.

68 - Vernal Express, May 28, 1936. By this time Boyle had during the past two winters "successfully conducted five classes in geology and physical geography at the Uintah and Alterra High Schools...."

69 - Ibid.

70 - Vernal Express, August 27, 1936. By the way, the course charge was $10, classes to be held at the Uintah High School one or two evenings each week, with 3 to 5 hours credit for courses

71 - Vernal Express, October 1, 1936. Boyle pointed out that more would have to register for mineralogy before it would be given and
72 - pleaded "Why not try the course and learn about our wonderful minerals. Write your intentions to Dr. Boyle, Jensen, Utah, so that an early start can be made.

72 - Vernal Express, October 22, 1936. The mineralogy was scheduled from 5:30 to 7:00, the general geology from 7:00 to 8:30.

73 - Dinosaur National Monument Monthly Reports, June-December, 1936.

74 - Dinosaur National Monument Monthly Report, May, 1936.

75 - Dinosaur National Monument Monthly Report, August, 1936.

76 - Dinosaur National Monument Monthly Report, October, 1936.

77 - Dinosaur National Monument Monthly Report, December, 1936.

78 - Dinosaur National Monument Monthly Report, August, 1936.

79 - Dinosaur National Monument Monthly Report, September, 1936.

80 - Dinosaur National Monument Monthly Report, November, 1936.

81 - Dinosaur National Monument Monthly Report, July, 1936.

82 - Vernal Express, August 20, 1936.

83 - Dinosaur National Monument Monthly Report, September, 1936.

84 - Dinosaur National Monument Monthly Report, November, 1936.

85 - Ibid.

86 - Dinosaur National Monument Monthly Report, August, 1936.

87 - Dinosaur National Monument Monthly Report, November, 1936.

88 - Dinosaur National Monument Monthly Report, December, 1936.

89 - Vernal Express, March 5, 1936.

90 - Vernal Express, March 12, 1936.

91 - Vernal Express, May 21, 1936.

92 - Dinosaur National Monument Monthly Report, July, 1936.

93 - Vernal Express, May 28, 1936.

94 - Vernal Express, June 4, 1936.

95 - Dinosaur National Monument Monthly Report, January, 1937.

96 - Ibid.

97 - Dinosaur National Monument Monthly Report, February, 1937.

98 - Dinosaur National Monument Monthly Report, January, 1937.

99 - Vernal Express, January 21, 1937.

100 - Dr. Boyle credited the Life article for the increased travel in 1937. - Dinosaur National Monument Monthly Report, June, 1937.

101 - Dinosaur National Monument Monthly Report, March, 1937.

102 - Dinosaur National Monument Monthly Report, April, 1937. Dr. Boyle spoke to the group about the potential economic value of the national monument and showed them around the quarry.- Vernal Express, April 29, 1937.

103 - Dinosaur National Monument Monthly Report, May, 1937. The breakdown by states and countries is interesting: Utah, 736; Colorado, 20; California, 16; Missouri, 14; Pennsynvalia, 5; Canada, 5; Illinois, 3; Massachusetts, 3; Holland, 1; Texas, 1; Wyoming, 1; Arizona, 1; Nebraska, 1; and Washington, D.C., 1.

104 - Ibid.

105 - Ibid.

106 - Ibid.

107 - Vernal Express, May 27, 1937.

108 - Vernal Express, June 3, 1937.

109 - Ibid.

110 - Dinosaur National Monument Monthly Report, June, 1937.

111 - Ibid.

112 - Ibid.

113 - Dinosaur National Monument Monthly Report, December, 1937.

114 - Dinosaur National Monument Monthly Reports, 1937.

115 - Dinosaur National Monument Monthly Report, August, 1937.

116 - Ibid.

117 - Dinosaur National Monument Monthly Report, December, 1937.

118 - Dinosaur National Monument Monthly Report, October, 1937.

119 - Vernal Express, November 18, 1937.

120 - Dinosaur National Monument Monthly Report, October, 1937.

121 - Dinosaur National Monument Monthly Report, January, 1938.

122 - Dinosaur National Monument Monthly Reports, January-July, 1938.

123 - Dinosaur National Monument Monthly Report, May, 1938.

124 - Dinosaur National Monument Monthly Report, June, 1938.

125 - Dinosaur National Monument Monthly Reports, May, June and July, 1938.

126 - Dinosaur National Monument Monthly Report, May, 1938.

127 - Ibid.

128 - Ibid.

129 - Vernal Express, April 21, 1938.

THE CANYON COUNTRY JOINS THE MONUMENT

I. Split Mountain Gorge

Looking back at the history of Dinosaur National Monument as a federal preserve, one is constrained to confess that, first, the National Park Service for many years failed to appreciate the public interest value either of the quarry or of the wilderness which surrounded it; and, more pertinent to this chapter, even people in the region figuratively couldn't see the canyon country for the dinosaur quarry. Not, really, until the decade of the Thirties did the Green and Yampa hinterland come in for its due share of attention, eventually leading to its inclusion as part of the Monument.

Although Earl Douglass apparently spent little time in what today represents the interior of Dinosaur National Monument, he at any rate appreciated the geological backdrop for the quarry area:[1]

> From the quarry and from higher peaks and ridges near it, the view is of much interest, to the lover of the picturesque as well as to the geologist. From here can be seen formations, beginning with the old Palaeozoic in the picturesque Split Mountain on the east to the upper Cretaceous and overlying Tertiary rocks in the distant ridge south and west of Vewat - rocks aggregating perhaps three miles in thickness, and representing uncounted millions of years lay open to view, stratum on stratum of various colors and shades. Here one sees mountain gorges, high rugged hills, immense rocky folds, varied rock sculpture, sharp ridges, rugged ravines, a picturesque river valley, terraces, branches, rolling plains, bad lands and more than a hundred physical features.

The river runners probably did as much as anyone to early publicize the wonders of the interior canyon country. During January of 1921 four men from Craig (P. R. Keiser, Dr. L. S. McCandless, Ralph L. White and Neil W. Kimball) explored the Yampa and Green River, especially in the vicinity of Echo Park where they saw "wonderful possibilities" for a winter resort.[2] In 1924 the U.S. Geological Survey sent a boating expedition down the Green River

which was recorded on film by Ralph Woolley, portraying the "beauties of the Green River gorge..."[3] During the summer Woolley presented an illustrated lecture on the trip, "Boating Through the Rapids and Canyon Gorges of Green River," at the U. B. I. C.

It wasn't necessary to run the canyon rivers to appreciate the unique beauty of the Dinosaur region. When Ernest Untermann had visited in the Jones Hole area, he made many beautiful paintings of the scenery there.[4] In the spring of 1924 the Vernal Commercial Club, challenging the National Park Service's statement that the "quarry is simply a hole in the ground from which blocks of stone have been taken," went on to point out that "it is a place of very great interest aside from the scientific aspects.I know of no place in the Rocky Mountains where the various geological ages are so marked and plainly discernible as at this point. The quarry is located near a rugged canyon which is itself very beautiful."[5] And that summer an editorial in the Salt Lake City Tribune extolled the quarry's setting, "in a most interesting geological and historical environment, being within magnificent sight of the famous Split mountain canyon on Green river, overlooking several graceful, tree-trimmed curves of the Green river itself, including the old Indian ford where Padre Escalante and party crossed in 1776....."[6]

In 1926 Douglass and the river men continued to advertise the attractions of the Dinosaur area for those who were interested. During the course of a long letter to Representative Colton, encouraging his support for legislative action on the Dinosaur museum, Douglass noted:[7]

> One cannot conceive of a more fitting setting for such a natural monument as is proposed. This would furnish but one picture--surely a most attractive one--in the great open

book. The scenery around the monument is unique. In the Uinta Mountains and the surrounding country are all varieties of landscape from wide extended plains and badlands, through fertile cultivated areas and foothills to mountain heights with beautiful groves, forests, parks, clear streams and lakes.

Near the monument are camping grounds and pictographs of the people which, so far as we know, first inhabited the country. One ancient picture or "panel" is within a few rods of the Monument.

It was within sight of this Monument that Escalante, in 1776 camped and crossed the Green River by the old Indian Ford. It was within a half mile of it that Ashley and Powell, the Kolb Brothers and others made their daring trips down the Green and Colorado rivers.

A party of five made a trip down the Green River from Wyoming in August of 1926 and were "pleased with the beautiful scenery along the route."[8] But much of this country, as attractive as it might be, was too inaccessible to engender much enthusiasm either at the local or national level, for turning it into a national monument.

Despite its particular isolation, the Pool Creek country near Echo Park made newspaper headlines in early 1929 when Mary E. Chew and her son Rial announced that they planned to turn their holdings into a dude ranch. "We figure 'Pool Creek" will make the finest dude ranch in the west and it will be one place that people haven't yet had a chance to spoil," Rial reported.[9]

Dudes coming cross-country to this proposed ranch would certainly have the experience of their lives:[10]

To reach the Pool Creek Ranch one goes by horseback over the Blue mountain trail about 35 miles from Jensen, Utah, or one proceeds around and up over Blue Mountain from another angle, by wagon road, and a distance of some 65 miles. The last eight miles are down hill and when we say down, we mean down. Wagons are left at the top and supplies are transferred to pack mules. Callers and guests proceed on their saddle horses, except where they dismount and walk behind the ponies. Behind, so that in case any

pony stumbles in the sheer descent one need not be below him to break the fall.

Appreciating travel hazards, Rial enterprisingly announced that he planned to clear a flat near this "garden of Eden" and "have our guests come by plane and leave the same way."

The dude ranch failed to materialize, but the suggestion of air travel added a prophetic note. In mid-June of 1929 Mrs. Chew was brought in to Vernal for treatment of a broken arm.[11] Wanting her family to know of her successful treatment, she procured the services of an airplane pilot who had been in the Vernal area for a few days. With some difficulty he flew her (and her daughter) to the Pool Creek Ranch, circled around the house several times to attract the attention of the family, then from a height of 2500 feet dropped a box of magazines and a letter from Mrs. Chew.

Ernest Untermann was back in the Uintah Basin in the fall of 1929 and planned to devote the next two years to painting the scenery, as well as portraying on canvas some of the fossil mammals and reptiles discovered in the sedimentary outcrops.[12]

* * * * *

Up until 1931 the idea of increasing the present monument to include the colorful canyon country had not really been seriously considered. y As has been seen, some residents and river runners were appreciative of the spectacular scenery but not necessarily to the point where they thought in terms of its inclusion in an extension of Dinosaur National Monument. Starting early in 1931, however, national attention began to focus on the region, primarily with respect to the development of the dinosaur museum but secondarily towards preservation of the surrounding wilderness.

In assessing the status of the existing Monument at the

beginning of 1931, Barnum Brown of the American Museum of Natural History observed that "it is now only a name with nothing for visitors to see except the gorgeous scenery, intensely interesting geology, and a hole in the ground where a great work was done."[13] However, Brown optimistically went on to suggest that "here is an opportunity to create one of the most spectacular attractions in the entire United States ranking in drawing appeal with the Yellowstone Park and the Grand Canyon."[14]

The first actual step by the National Park Service towards enlargement of the Monument came in May, in the form of a recommendation by Mr. Langley to Director Albright that 160 acres be added to the preserve. The addition consisted of four forty-acre tracts, in section 26 which also contained the 30 acres of the quarry, which were covered by Federal Power Project Withdrawal No. 524 and Power Site No. 732, the NW 1/4SW 1/4 by Phosphate Reserve No. 24, Executive Order dated May 11, 1915. Brooks, in transmitting Langley's report to Albright, commented:[15]

> It will be noted that the area proposed to be added is clear of any conflict except the withdrawals above-mentioned. Since these withdrawals are all for Government purposes, I do not believe they would in any way interfere with the monument should it be decided to include the proposed area.
>
> I talked with the Federal Power Commission men and found that A. E. Humphreys, et al, has applied for a power permit on Green River, involving these lands. The Humphreys application by Power Commission letter dated December 15, 1930, was suspended until the investigation and interstate agreements regarding the division of the waters have been cleared. I was informally advised that the Commission will undoubtedly eventually reject this power application.
>
> From the above it will appear that there is nothing that can interfere with the proposed extension as far as the status of the land is concerned, and I would suggest that if it is decided to add this proposed area to the monument we go right ahead and do so and then take the matter up with the various and proper Government bureaus to have all of theprior withdrawals revoked.

On June 26 an official inspection party visited the quarry and Split Mountain Gorge area. Constituting this party were W. P. Weber, National Park Service engineer, Thomas C. Vint, chief landscape architect for the N.P.S., Dr. Pack of the University of Utah, LeRoy Kay of the Carnegie Museum, Dr. Bumpus, an N.P.S. collaborator, and Dr. Brown. The main item of business involved the development of the quarry, but there was incidental attention to the environs. In fact, the side trip to Split Mountain Gorge was made "to determine its geological and scenic possibilities."[16]

It was recommended to Albright by the group "that you and Congressman Colton should wire the Washington office asking for the immediate withdrawal of the area indicated on the map which had been unanimously approved by those convened at Vernal on the previous day."[17] Furthermore, the U. S. Geological Survey, preferably during the current season, should make a topographic map of the quarry area and the immediate neighborhood. Meanwhile, Dr. Pack was to check into several small tracts of land within the desired area which still belonged to Mrs. Douglass.

By month's end (June 29, 1931), Colton was recommending to Albright by telegram an even larger withdrawal of lands "pending determination of question of extending Dinosaur National Monument":[18]

> Patented land total apparently about thirteen forties six of which belong to county and can be quickly secured at no federal cost. Land involved in this recommendation follows sections 22, 23, 24, 25, 26, 27, lot one, section 34, northwest quarter of the northeast quarter and the northeast quarter of the northeast quarter and the southeast quarter of the northeast quarter and lot one lot two lot three in section 35 all in township 4 south range 23 east, Salt Lake meridian, sections 19, 20, 21, 28, 29, 30, township four south, range 24 east, Salt Lake meridian.

The Vernal Lions Club, at its July 7 meeting, heard a report from past president J. A. Cheney, who had accompanied the inspection

party, about the tour and the decision by the group that the museum area should be enlarged to include Split Mountain Gorge, Hub Canyon [?], and the many Indian pictographs found in the vicinity.[19]

The National Park Service prepared a document for transmittal to President Hoover relative to withdrawal of the land for the monument enlargement. This document was routed to the General Land Office for comment. Commissioner Moore hastened to notify Acting Director of the N.P.S. Cammerer that:[20]

> The records of this office show that a considerable portion of the area involved is embraced in a first form reclamation withdrawal in connection with the Colorado River Storage Project, and that 1,240 acres are included in Phosphate Reserve No. 24, Utah No.3, made by Executive order of May 11, 1915.
>
> The papers transmitted with the above letter are herewith returned, and it is suggested that the proposed withdrawal be made subject to the said reclamation and phosphate withdrawals in addition to the power site withdrawals involved. The records also show that only 406.97 acres of the area are embraced in patented entries, and that 80 acres are included in an unperfected homestead entry, whereas it is stated in the draft of letter to the President that 486.97 acres are in private ownership.

On August 8, Joseph M. Dixon, Acting Secretary of the Interior, transmitted to President Hoover the revised Executive Order for withdrawal of lands around the quarry, pointing out to the President that:[21]

> ....It is proposed to examine the lands covered by this proposed withdrawal to determine their quality and suitability for adding to the Dinosaur National Monument. Some of these lands are reported to contain features of scientific interest and some of the lands are needed to improve the administration of the monument.
>
> The area covered by this proposed Executive order contains approximately 7,890.72 acres, and the records of this Department show that 406.97 acres are in private ownership and 80 acres are covered by a homestead entry. The proposed Executive order is made subject to valid existing claims so the rights of the private parties will not be affected if the Executive order is signed. The area contains approximately 5,750 acres of unsurveyed land. Also most of the lands involved are covered by phosphate, first form reclamation, and power-site withdrawals, but it

is believed the execution of this Executive order would not in any way interfere with these withdrawals.

It appears that the area covered by this proposed withdrawal may have greater public value from a scientific standpoint and for the administration of the Dinosaur National Monument than for economic development, and I respectfully recommend that you approve the temporary reservation of these lands as provided in the included form of Executive order.

Finally, on August 12, 1931, President Hoover signed the following revised withdrawal, which marked the first increase in the size of Dinosaur National Monument since the 80 acres of the quarry had been set aside in 1915:[22]

Executive Order
No. 5604

Withdrawal of Public Land Utah

Under authority of the act of Congress approved June 25, 1910, (36 Stat. 847), as amended by the act of August 24, 1912 (37 Stat. 497), it is hereby ordered that the public lands within the following-described areas in the State of Utah be, and the same are hereby, temporarily withdrawan for classification, subject to the conditions of the aforesaid acts and to valid existing claims, and to existing phosphate, first form reclamation, and power-site withdrawals.

SALT LAKE MERIDIAN

T. 4 S., R. 23 E., sec. 22, all (unsurveyed)
sec. 23, all (unsurveyed)
sec. 24, all (unsurveyed)
sec. 25, all (unsurveyed)
sec. 26 N 1/2, NW 1/4 SW 1/4 SE 1/4 and S 1/2 S 1/2, (all unsurveyed)
sec. 27, all;
sec. 34, lot 1
sec. 35, lot 1,2,3,6 N 1/2 NE 1/4 and SE 1/4 NE 1/4

T. 4 S., R. 24 E. sec. 19, all (unsurveyed)
sec. 20, all (unsurveyed)
sec. 21, all (unsurveyed)
sec. 28, S 1/2, and unsurveyed N 1/2
sec. 29, S 1/2, and unsurveyed N 1/2
sec. 30, lots 1 to 13, inclusive, SE 1/4 NW 1/4, E 1/2 SW 1/4, and unsurveyed fractional NE 1/4 east of Green river

This order shall continue in full force and effect unless revoked by the President or by act of Congress

(REFERENCES CITED)

1 - Earl Douglass, "The Carnegie Museum Dinosaur Quarry and National Monument." Ca 1915. Douglass correspondence.

2 - Vernal Express, March 11, 1921.

3 - Vernal Express, August 1, 1924.

4 - Vernal Express, January 27, 1922.

5 - Letter, Colton to Mather, April 17, 1924. Nat. Archives File 580, Dinosaur.

6 - Vernal Express, July 4, 1924.

7 - Letter, Douglass to Colton, April 21, 1926. Nat. Archives File 580, Dinosaur.

8 - Vernal Express, August 20, 1926. The five included Webster V. Todd, a New York City business man, F. L. Page, secretary of the Pennsylvania Trust Company at Pittsburg, Pa., Ogden West, a young lawyer from Chicago, C. P. Hale of Manilla and H. C. Blake of Monticello, Utah.

9 - Vernal Express, January 10, 1929.

10 - Ibid.

11 - Vernal Express, June 20, 1929. She had broken her arm while riding a spirited horse but hadn't gone to a doctor until three weeks later. Meanwhile, the arm had knitted in a crooked position and had to be rebroken and reset.

12 - Vernal Express, September 5, 1929. He was staying at the H. C. Rupple ranch on Brush Creek.

13 - Letter, Brown to Colton, February 6, 1931. Nat. Archives File 580, Dinosaur.

14 - Ibid.

15 - Letter, Brooks to Albright, May 21, 1931. Nat. Archives File 580, Dinosaur.

16 - Vernal Express, July 2, 1931.

17 - Letter, Bumpus to Albright, June 28, 1931. Nat. Archives File 580, Dinosaur.

18 - Telegram, Colton to Albright, June 29, 1931. Nat. Archives File 580, Dinosaur.

19 - Vernal Express, July 9, 1931.

20 - Letter, Moore to Director, N.P.S., July 25, 1931. Nat. Archives File 580, Dinosaur.

21 - Letter, Dixon to Hoover, August 8, 1931. Nat. Archives File 12 1(Part 1), Box 1978, Secretary of the Interior.

22 - Executive Order 5684, Nat. Archives File 580, Dinosaur.

II. The Green River-Yampa Canyonland - 1931-1938

It had been a memorable five days for the four adventurers--Bus and Tom Hatch, Frank Swain and Royce Mowrey.[1] Behind them, as they reached the Jensen bridge towards August's end of 1931, were 150 miles of wild river. Shooting rapids at 35 miles an hour, the sturdy boat had twice staved in on rocks. Oars were broken; a boatman was thrown fifteen feet into the air when the boat on one occasion overturned; and so many of the provisions were lost that food for the trip was reduced to five pounds of jerked meat, four potatoes, one onion and a tomato. A potential bighorn sheep for the menu eluded its desperate pursuers by leaping thirty-five feet to a safer ledge. Yet the impressive memory was of the Green River gorge. Its scenery admittedly rivaled any the four men had ever before seen!

It was this wilderness canyon country, sculptured over the centuries by the persistent swirl of the Yampa, the Green, and their tributaries, which would increasingly become publicized during the 1930's. And the ecstatic publicity by innumerable river runners and overland explorers, coupled with enthusiastic support by public-minded citizens of the region, eventually would ensure the gorges' inclusion within Dinosaur National Monument.

Over the past century this isolated wonderland had been known to only a few white men--General William Ashley (1825), Manly's boat crew of ox-team drivers in 1849, Major John Wesley Powell and his intrepid parties in '69 and '71. The earliest explorers described the exciting country in words: "...its walls and cliffs, its peaks and crags, its amphitheaters and alcoves

tell a story of beauty and grandeur that I hear yet--and shall hear."[2] More recent visitors such as the Kolb brothers in 1911 began to record the spectacular scenery on film.....

Now, as the decade of the 1930's unfolded, Bus and Tommy Hatch were on the river again late the next summer (1932) with a party of "dudes" and a motion picture camera.[3] Members of this expedition described the Ladore Canyon "as equal to the combined beauty of all the parks of Utah..."[4] Edgar McMechen, the director of publicity for the Colorado Association, got a look into the Yampa and Lodore Canyons about this same time and excitedly reported that the "...country will be the mecca of eastern tourists as soon as roads are built and suitable accommodations are provided."[5] End end of September two men successfully navigated the Green in a rubber boat. One, Dr. Plummer of Salt Lake City, enthusiastically announced that "the beauty of Split mountain rivals that of Bryce Canyon" and intended to urge the "building of a scenic highway from the Dinosaur monument through Split mountain gorge, Ladore Canyon and following the river through Flaming Gorge." He admitted that the cost would be tremendous, but the highway would be the "most beautiful in the world."[6] By early December of 1932 the summer's movies, capturing the "marvelous beauty of the canyons," were being shown in Vernal, including to a packed auditorium at Uintah High School and for the First Ward.[7] And so, at long last, the allure of this wild precipice-and-pleateau hinterland beyond the dinosaur quarry began to burgeon.

President Hoover's 1931 executive order withdrawing public lands around the existing monument encouraged some to begin looking forward to an actual enlargement of the monument boundaries and,

perhaps, even national park status. Indeed, the faraway New York American had an October 18th (1932) headline which read "Another national park is planned." In early September of 1932 a large congregation gathered in Vernal to promote the enlargement of the Monument.[8] Participants included Congressman Colton, J. C. Anderson for the Vernal Lions Club, Chatwin for the Jensen Bicentennial Committee, Congressman Ed Taylor and Lt. Governor Ed Johnson sent greetings and support from neighboring Colorado, and even Director Horace Albright in a telegram emphasized that the National Park Service wanted to make Dinosaur "one of the outstanding attractions of the National Park System..."[9]

However enthusiastic the Park Service might have been about expanding Dinosaur National Monument, it had, as usual, only limited funds at its disposal; and there was considerable private land within the proposed boundary which would have to be purchased. Along these lines, H. L. Brooks of the N.P.S. in Washington had suggested to Dr. Barnum Brown that he attempt to have some of the private land donated, as had been done with Black Canyon, Carlsbad, and Colorado National Monument.[10] Brown took to the idea at once, believing that the Vernal Chamber of Commerce and Vernal businessmen "would be interested in the idea and he would take it up with them."[11]

Meanwhile, Chatwin had written to Albright, urging that the monument not only be enlarged but that it be changed to a national park. Albright, in reply, reassured that the N.P.S. would be going ahead with fiscal studies so that a presidential proclamation enlarging the monument might be issued "if that is the thing to do." However, Albright noted that national parks were created by acts of Congress "primarily on account of their outstanding and unique

type of landscape." And he, surprisingly, continued "...in viewing these standard [sic] for the parks and monuments, it would be impossible for us to justify advocating the changing of the Dinosaur National Monument to a national park."[12]

By late spring of 1933, a tentative master plan for Dinosaur National Monument had been completed and was sent to Albright for approval.[13] Also, Roger Toll, Superintendent of Yellowstone, had begun a reconnaissance in the monument area as chief investigator for the Park Service, starting in 1932 and continuing into the winter of 1933-34.[14] Mr. F. Martin Brown of Colorado Springs had done an archaeological surve of the Yampa during the summer of 1933, and Toll was instructed to put Yampa "on the list of areas for investigation which he hopes to get to this winter." Toll had already recommended that the Yampa canyonland with its archaeological sites be made a national monument.[15]

As always with Dinosaur, there seemed to be more talk, nationally and locally, than action. In mid-October of 1933 Wirth was apologizing to Frank Kittredge of the N.P.S. Branch of Engineering for not getting to the boundary enlargement matter earlier--"however, the work has been such that problems of this type have been necessarily postponed"--but hoped that something could be done in the fall or winter.[16] Since nothing could be done about enlarging the monument until the potential inclusions could be investigated, the Park Service was hopeful that Toll could complete such surveys so that the extension could be recommended in the spring of 1934.[17]

With the shift of attention from Dinosaur's quarry area to the canyon hinterland, Colorado citizens began to evince a naturally greater interest in the scenic region. The Lions Club of Craig

some years earlier had initiated a drive to have the Yampa Canyon made into a national monument or national park; and a Lions Club committee headed by L. P. Beckett had succeeded in getting the Colorado Association interested in the plan.[18] Indeed, Edward McMechen's trip with Rev. J. N. Bridges to the Yampa country in 1932 had been promoted by the Moffat Country Commissioners. Towards the end of December, 1933, Colorado's Senator Edward Taylor received a letter from Ralph White of Craig, extolling the singularity of the Yampa and the Lodore canyons--"only surpassed to any degree at all by the Grand Canyon of the Colorado." White went on to say that this canyonland "is one of the few beauty spots of the United States about which but little is known generally."[19] Meanwhile, Frederick Reid, president of the Colorado Association, was writing the Secretary of the Interior about the Yampa country.[20] Governor Ed Johnson of Colorado joined in support of the Yampa Canyon as a national monument by noting that "in my estimation, for grandeur of scenery, expanse of territory and color of formations, this section is exceeded only by Grand Canyon in Arizona."[21] Johnson offered the cooperation of the state of Colorado in promoting the project. The Craig Lions Club in late February (1934) passed a resolution addressed to Congressman Taylor, urging immediate creation of a national monument to include the Yampa.[22] This same month, in a demonstration of impartiality, an adventurous Utah party of four from Jensen made a nine-day trip into Colorado's Yampa Canyon, returning with the glowing declaration that "it is impossible to find words to enable one to describe all the beauties and grandeur of this particular section, which is scarcely ever visited by mankind

except the hardy cowboys and herders of the stock ranging adjacent."[23]

The Park Service had held out some promise that in the spring of 1934 there would be a definite move towards enlarging the monument. On March 30, Cammerer wrote Dr. Barnum Brown that if the private holdings within the proposed boundary extension could be turned over to the government, he would "gladly prepare a draft of a proclamation extending the boundaries of the Dinosaur National Monument and recommend its approval to the Secretary.[24] Brown, in turn, approached the Vernal Chamber of Commerce about expediting the acquisition of lands "either by purchase or by exchange."[25] The initial extension would have included the country around Split Mountain, which had been withdrawn in 1932; but the move bogged down as difficulty was experienced in obtaining rights to the included private lands.[26]

Whether the canyonlands became a national monument or park or not did not daunt the spirits of adventurers who wanted to explore this region. The Hatches took two companions down the Yampa River in early May (1934), coming out at Split Mountain, impressed by the "wonderful scenery, much wild game, rough rowing and a wonderful time."[27] and advocating a "scenic road through the Green river gorge and thence into the Yampa." In late June the Hatches took a much larger group, including some Utah game wardens, through Flaming Gorge and Lodore to Split Mountain in what proved to be an exciting trip. Bill Parhni of Lark, Utah, had the double misfortune of almost drowning at Lower Disaster Falls and then being bitten on the heel by a snake at Jone's Creek, the latter encounter eventually sending him to a hospital in Salt Lake.[28]

No private citizens were rushing to donate their Dinosaur holdings to the federal government at this time, but Uintah County

moved on May 1, 1934, to deed several lots in Section 35 near Split Mountain Gorge to the National Park Service, land which originally eHonged to William Schaefermeyer, had subsequently been sold for deliquent taxes, and finally was conveyed to the countyy[29] After a month-and-a-half consideration, Nathan Margold, a solicitor for the Depaetment of the Interior, informed the Secretary of the Interior that the county had no authority to convey the land but that it could sell the land to a private individual, who could then donate it to the government.[30]

In late summer of 1934
A Barnum Brown had some 350 aerial photographs of the Dinosaur region made which created "world-wide interest";[31] and Madsen, in correspondence with the National Park Service in Washington, was pushigg for the enlargement around Split Mountain, noting that "the gorge...is of outstanding scenic value and will attract a great many visitors."[32]

By the mid-thirties there were two directions to monument enlargement: (1) add the withdrawal lands around the Dinosaur quarry to the existing Dinosaur National Monument in Utah; and (2) create a new monument including the Green and Yampa river canyons in northwestern Colorado, to be designated as "Yampa Canyon National Monument." On January 16, 1935, Arno Cammerer sent a letter to Secretary of the Interior Harold Ickes, recommending that the latter monument be approved "and that a proposed proclamation providing for its establishment be drafted for your consideration and submission to the President."[33] With his recommendation, Cammerer included Toll's report on the Dinosaur region. Ickes approved the memorandum on January 23, and the National Park Service then proceeded with the drafting of a presidential proclamation. However, a stumbling block was

encountered in the form of the power withdrawals on the Green River. Ickes' approval of the proposed monument on January 23 had been made "subject to existing power withdrawals." Cammerer, in a memo of July 30, finally urged that the Secretary write the Federal Power Commission about vacating their power withdrawals in the entire area now under consideration, which would "make possible the establishment of the monument by a proclamation protecting it from any future power development."[34]

During the early summer of 1935 the Park Service sent three representatives--Superintendent Edmond Rogers of Rocky Mountain National Park, and Howard W. Baker and J. R. Anderson of Washington--to carry out a survey of the Green and Yampa Canyons. The Vernal Lions Club feted the men, showed them Alton Hatch's movies of the river country, and hopefully anticipated that forthcoming from the government officials would be a "favorable report on the possibilities of development for tourists of this region by the national parks service."[35]

On November 6, 1935, Ickes dropped Frank McNinch, chairman of the Federal Power Commission, a note about the possibility of its releasing the power withdrawals, so that "the proposed monument would be placed in a much better position from the standpoint of administration."[36] Nothing materialized.

As far as the monument's actual enlargement was concerned, the situation at mid-decade was about as it had been at the beginning of the 1930's: much talk--men in late fall of 1935 who had made an aerial survey with movies of the Yampa Canyon called it "one of the most gigantic scenic regions in the United States, ...should be made a national monument and easily accessible"--[37] but little evident progress.

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6 - Vernal Express, September 29, 1932.

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9 - Telegram, Albright to Colton, September 5, 1932, from Belton, Montana. Nat. Arch. File 580, Dinosaur. Colton in a telegram of August 31 to Albright had invited him to send his greetings to the meeting.

10 - Memo from H. L. Brooks, no date but probably early 1933. Nat. Arch. Box 2159, Dinosaur.

11 - IBid.

12 - Letter, Albright to Chatwin, March 7, 1933. Nat. Arch. Box 2159, Dinosaur.

13 - Letter, Thomas C. Vint, Chief Architect, to Albright, May 16, 1933, Nat. Arch. Box 2159, Dinosaur.

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24 - Letter, Cammerer to Brown, March 30, 1934. Nat. Arch. Box 2159, Dinosaur.

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26 - For example, Cheney of the Vernal Lions Club noted that one desired 80-acre plot across the Green River "will be difficult to get back from private owners to monument." - Letter, Cheney to Brown, %April 27, 1934. Nat. Arch. Box 2159, Dinosaur.

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EARLY POWER AND RECLAMATION ACTIVITIES

"Making the desert bloom" has been the dream of many a resident of the semi-arid West; and the citizens of the Uintah Basin were not exceptions. Long before the creation of Dinosaur National Monument, the water of the Green River--and the Yampa--had been considered for power and reclamation purposes.

By authority of the Reclamation Act of June 17, 1902, portions of the Green River lying within the present boundaries of Dinosaur National Monument, namely at Lodore and Split Mountain, were reserved as part of the Colorado River storage project, and a river gaging station was planned for upstream on the Yampa River by the U. S. Geological Survey.[1] Also, a stream gage was maintained at the Jensen bridge from November 7, 1903 to December 24, 1904 and from March 13 to September 30, 1906 (in addition, this station operated from June 30 to October 17, 1914 and August 1 to December 15, 1915, when it was discontinued).[2] Other early gaging stations were located at Myers Ranch, 16 miles from Lodore, April 24, 1910 to November 30, 1911, and at Vermilion Creek five miles from Lodore, July 1, 1910 to November 30, 1911.[3]

In 1904 a preliminary report was made to the U. S. Bureau of Reclamation calling attention to Browns Park, on the Green River, as a possible reservoir site.[4] After the report, a plane-table survey was made of the area to determine its capacity as a reservoir site, with the proposed dam located at the head of Lodore Canyon.

In 1907 the Bureau of Reclamation accelerated its investigations in Upper Lodore Canyon, expending more than $43,000 in drilling

explorations in conjunction with the Upper Browns Park alternate power reservoir site,[5] putting down ten diamond-drill holes at an upper site and designating a lower dam site about 2 1/4 miles downstream. The deepest of the ten holes was 129 feet, in the center of the gorge, and no bedrock was struck. Work was finally abandoned for the winter of 1907.[6]

The next year ten more drill holes were put down in the upper site area.[7] The 8th and 9th holes in this second series went, respectively, 10.5 and 49.75 feet into bedrock, with total drilling depths of 150 and 185.25 feet. During the drilling of the 9th hole, on September 25, 1908, the river rose 32 feet, overturning the drilling scows. At the 9th hole a crevice was encountered at a depth of 157 feet which took 50% of the water pumped into the hole. In 1908-1909 eleven drill holes were put down at the lower dam site, the deepest being 159.6 feet but apparently without penetrating the bedrock.[8]

The proposed upper dam would eventually contain about 2 1/4 million acre-feet of water and would flood about 23,000 acres.[9] However, discouraging results from the drillings (which disclosed "unattractive foundation conditions), plus the inaccessibility of the narrow rock gorge with vertical half-mile-high walls, the the fact that this reservoir would not be needed after completion of the Flaming Gorge project and would only deplete stream flow through evaporation and tend to inundate valuable ranch lands, resulted in final abandonment of the Brown's Park sites.[10]

In the spring of 1914 there was again a stir of interest in reclamation on the Green River. The district engineer of the U.S. Geological Survey, Elmer a. Porter, received authority from the director of the U. S. Reclamation Service to install automatic

water gauges on the Green River at several locations.[11] A reservoir site was now under consideration along the GreendRiver at Bridgeport, northeast of Vernal; and it was estimated that the water impounded by this dam would back up "for many miles and spread over Brown's park, an almost natural reservoir, capable of holding a large supply of water."[12]

The following spring a preliminary survey was made of the Deadman Bench country, "to ascertain the amount of irrigable land."[13] Later in 1915 a U. S. Reclamation Service's geological surveying party under the leadership of Engineer R. B. Worthy began looking into the possibilities of a dam project in the Split Mountain district to reclaim the Deadman country.[14]

About the same time the Utah Power & Light Company spent considerable money making a reconnaissance survey of the power possibilities of the canyon stretches between Flaming Gorge and the Uinta Basin.[15] Maps were made, but not of the entire gorge.

Power and reclamation activity then temporarily subsided in the area, leaving Douglass to carry out the few actual ventures. He dreamed of the great development of the quarry area, with a fine museum and a nearby hotel whose green lawns would be watered by Green River water pumped up the hill; with rich irrigated agricultural land in the background.[16] Douglass actually did something towards promoting this dream, since in June of 1918 he installed a 25-horsepower pumping plant along the Green River for his farm, a plant capable of irrigating 320 acres.[17] In July Douglass was rejoicing "over the first water from his new pump. The water was feeling its way through the new ditches and creeping into the new reservoir which will mean so much to our pioneer Douglas family."[18]

Again in 1922 federal interest stirred with respect to local reclamation projects, spurred especially by Congressman Colton. The government withdrew the Deadman's Bench lands from entry, and the reclamation program was announced in the Vernal Express as "feasible," eventually to irrigate one-fourth million acres near Vernal.[19]

On July 13, 1922, a U. S. Geological Survey crew under the leadership of K. W. Trimble, a topographic engineer of Washington, D. C., started down the Green River from Rock Springs, Wyoming, to Green River, Utah, "to make a topographic survey of the Green River and tributaries to locate dam sites for power and irrigation purposes, and all other data concerning the water flow of the river."[20] Accompanying Trimble in three special, practically unsinkable boats[21] were J. B. Reeside, Jr., geologist of Washington, H. L. Stoner, a representative of the Utah Power and Light Company, Salt Lake City, which was cooperating in the survey, head boatman Albert Loper of Green River, Utah, H. E. Blake, Jr., rodman and boatman of Monticello, Utah, Lee B. Lint, rodman and boatman from Weiser, Idaho, cook John Clogston, and Ralf R. Woolley, U. S. Geological Survey hydraulic engineer from Salt Lake City.

During early July the party assembled at a camp on Scotts Bottoms, near Green River, Wyoming. The night before the expedition embarked, a dinner was given in honor of the group by the Community Club of Green River; and after a succession of vivid recitals oof earlier unsuccessful attempts at running the river, the members of the surveying team were wished a hopeful "bon voyage."

Ralf Woolley described the expedition's journey through the canyon country which later was to be included in Dinosaur National Monument:[22]

> Browns Park below Swallow Canyon is a broad, open basin, with rolling foothills and brush-covered bottom lands. The river flows through it sluggishly in a meandering course. Small groves of cottonwoods are numerous, and in many places the stream has cut away its soft banks, causing hundreds of trees to fall into the channel.
>
> Canyon of Lodore.--Leaving Browns Park the river flows southward into the Canyon of Lodore, and as the boats glided through the "Gate of Lodore" that same feeling of gloom which Ashley noticed on the countenances of his men was experienced by every man in the party. The canyon is a rock gorge with jagged walls that rise almost vertically many hundreds of feet. The coloring is beautiful, comprising delicate tints of red, pink, and ocher, all blending into a wonderful picture in the soft light of the late afternoon and evening. The rapids not only become more numerous, but many of them are also more violent. The fifth one in the canyon is formed by a huge boulder in midstream with other smaller ones scattered liberally about. The current swings around this boulder and forms a large whirlpool below it. Two of the boats passed the rapid without trouble, but the Utah was caught in the swift current and rammed into the boulder, crushing a hole in the stern just above the water line. This was repaired in about an hour. Later in the day Upper Disaster Falls was reached. Here two rapids about 500 feet apart, full of rocks and having a rocky island between, with shallow rocky channels on either side, furnished another source of diversion. It was here that the Powell party lost one of its boats in 1869.
>
> About half a mile below this rapid is another one which has for some reason unknown to the writer been named Lower Disaster Falls. This rapid is at a sharp turn in the river channel where the stream has cut most of its low-water channel under the sandstone cliff that forms the right-hand wall of the canyon. The current is swift into this undercut channel, and to attempt to take a boat through the rapid without "lining" or "nosing" it would no doubt spell disaster. Camp was made at the head of this rapid. While the cook prepared supper other members of the party made a study of the rapid, and around the bonfire that evening opinions were not wanting as to the best way to get the boats through. Early the next morning the beds and other bulky cargo were packed to a convenient place below the rapid. This work was a great invitation to breakfast. After breakfast the boatmen "nosed" the boats with their lightened loads along the shore; wading alongside of them in water just deep enough to float them and at the same time keep them under control. As soon as the danger point was passed one of the boatmen would leap into the boat and bring it into the still water below. An old shirt, several empty tin cans, and the remains of a camp fire below the rapid bore mute evidence that another party had spent some time at this point.

A short distance farther down the canyon Dunns Peak comes into view. It is a flat-topped portion of the east wall consisting of a capping of gray quartzite on top of the characteristic red sandstone through which the canyon is cut. The contrast between the different-colored rocks is very striking and is greatly enriched by the delicate hues of red in the canyon walls. The peak was named by Powell, and it stands more than 2,000 feet above the river.

At the foot of this peak are the Triplet Falls, three rapids within about 800 feet. These rapids are swift and rough, but the stage of the river was high enough to carry the boats through without trouble. Not far below these rapids became as placid as a mill pond; then suddenly it plunged with a roar into a long steep stretch of channel that is one confused pile of boulders for nearly half a mile. A landing was made in the still water on the left bank near the head of this stretch, and it became apparent very quickly that a portage would be necessary. A copy of Kolb's book was the principal volume of the party's library, and from the pictures given therein it was possible to identify this rapid as Hells Half Mile.

After a careful study the boatmen were satisfied that the empty boats could be run through the rapid. Accordingly they were unloaded and the hatch covers screwed down tightly. Each boatman donned his life jacket, and when all was ready the other members of the party stationed themselves along the bank at places of vantage, some with kodaks and others with ropes. The Utah went through the first plunge of 9 feet fall in a distance of 400 feet and in an eddy along the right-hand bank waited for the other boats. The Wyoming ran it successfully, but for a moment everyone expected to see her dashed against one of the huge boulders and capsized. The Colorado was less fortunate than the other two and was washed high and dry on a boulder. All efforts of her boatmen to dislodge her were futile. After several attempts a line was cast to the boatman from shore, and the boat was finally pulled loose.

The boatmen did some very clever maneuvering to miss as many of the rocks as they did, for the the observer on the banks it appeared impossible to miss them. After the first plunge the river spreads over a channel about 600 feet wide in high water but at this time (August 3, 1922) it was divided into two or three channels, all of them full of boulders. With the exception of about 40 yards of the remainder of Hells Half Mile the boats drifted along under control of the boatmen, but through this 40-yard stretch they were "nosed" because of shallow water and numerous rocks. It was very obvious after the bottom of this rapid was reached that the stage of the river had very much to do with success, for it was easy to see that no end of trouble would have been probable with a stage a few inches lower.

All afternoon the party toiled on the portage of the supplies. The trail led across a small ridge, across a deep red gully, into the high-water channel of the river, over this boulder-strewn course as far as possible, up a steep hillside of loose earth and rocks to a deer trail 75 feet or more above the river, and along this trail around a steep rocky point down to the sand bar, where camp was made.

Forty-three trips were necessary to place the cargoes below the rapid, and the course was very close to half a mile long. Each load was about 60 or 70 pounds, and when the work was done every member of the party was quite exhausted. However, a refreshing plunge in the "swimming hole" just off the sand bar and some dry, clean clothes made a great change, and everyone had a good appetite for supper.

The Canyon of Lodore is about 17 1/2 miles long and has a total fall of 269 feet, or about 15.4 feet to the mile. As Major Powell says:

> It starts abruptly at what we have called the Gate of Lodore with walls never lower than this until we reach Alcove Brook, about 3 miles above the foot. They are irregular, standing in vertical or overhanging in steep slopes, and are broken by many side gulches and canyons. The highest point on the wall is at Dunn's Cliff, near Triplet Falls, where the rocks reach an altitude of 2,700 feet, but the peaks a little way back rise nearly 1,000 feet higher. Yellow pines, nut pines, firs, and cedars stand in extensive forests on the Uinta Mountains and, clinging to the rocks and growing in the crevices, come down the walls to the water's edge from Flaming Gorge to Echo Park. The red sandstones are lichened over; delicate mosses grow in the moist places, and ferns festoon the walls.

Echo Park.--About 6 miles below Hells Half Mile the canyon walls break away and open into Echo Park, where Steamboat Rock, or Echo Cliff, marks the end of the beautiful Canyon of Lodore. Here the Yampa River empties into the Green River from the east. Echo Park is often spoken of in that vicinity as Pats Hole, because an old hermit known as Pat Lynch made it his home and worked a small farm there in connection with some cattle range adjoining.

Upon entering Echo Park the Green River flows southward at the foot of Steamboat Rock, which is about 700 feet high and a mile long; then it turns abruptly to the right and runs back in a northerly course almost parallel to its former direction for nearly another mile, thus having the opposite sides of a long, narrow rock for its right bank. This tongue of rock resembles in general a huge ship and thus obtained its name. It has a mural escarpment along its entire east side, but broken down in places on the west.

The louder sounds around camp at the mouth of the Yampa River were echoed from the cliff with remarkable clearness, and in some places in the park two and three distinct echoes were audible, with fainter ones following as the sound died away.

Whirlpool Canyon.--Leaving Echo Park the river enters Whirlpool Canyon. The walls are high and vertical, the canyon is narrow, and in places the water fills the gorge from wall to wall. The coloring and the pine trees dotting the steep slopes wherever they can cling are similar to the same features in Red Canyon and the Canyon of Lodore, but this one is much narrower through its upper 3 miles, and the walls are much steeper. The water flows rapidly and is made to eddy and spin in whirlpools by projecting rocks and sharp curves.

Near the Colorado-Utah State line the canyon is wider, with more or less space between the stream bed and the walls. High on the sides crags, pinnacles, and towers add to the architecture of the general scene, and a number of wild canyons enter on each side. About halfway through the canyon Jones Hole Creek enters from the north. It is a beautiful crystal stream that was flowing about 100 second-feet on August 8, 1922, and was well stocked with fine mountain trout. The remains of camp fires and tin cans indicated several old camps at this place, either of one or more parties exploring the river or of fishing and hunting parties that may have come down the creek.

A little more than a mile farther down the canyon Sage Creek comes in, also from the north. It is a smaller creek flowing in a rather broad canyon. Prospector's tools, the remains of an old camp, and several prospect holes in the hillside a short distance down the canyon were noticed.

Three miles below Sage Creek the canyon opens into Island Park. The length of Whirlpool Canyon is 9 miles, and the total fall is 93 feet, or an average fall of 10.9 feet to the mile.

Island Park.--Island Park was so named because of the numerous islands along the course of the river in this stretch. From the mouth of Whirlpool Canyon to the head of Split Mountain Canyon, where the river leaves the open area, it flows in a meandering course 7 miles long, though the air-line distance between these points is only a little over 3 miles. The lower part of the park is cut off from the upper part by a tongue of low rolling hills, and the greater part of this area has been called Rainbow Park. Beyond this area is another smaller open area known as Little Park.

Agriculture incident to ranching is carried on in the upper part of Island Park at the Ruple ranch, and some land is irrigated from ditches taken out of the river. A deserted cabin, about a mile northwest of the Ruple cabin, marks the site of an abandoned homestead, and another one at the edge of a cottonwood grove in the Rainbow Park area, with evidences of attempts to cultivate some of the surrounding ground, marks a similar site.

Many small ravines drain into these park areas and carry water during the spring thaws and local showers, but for the greater part of the year they are dry. The channels in several places show evidences of erratic torrential flow. Through one of these ravines a road leads out to Vernal. A small spring of clear water, heavily impregnated with iron, rises about a mile up the ravine, flows a few hundred feet, and sinks. In many places on the smooth rock faces of the walls of the ravine are Indian pictographs.

Split Mountain Canyon.--On leaving Island Park the river goes back into the mountain spur through which it has cut the lower part of Whirlpool Canyon, and when it has reached the center of the spur it turns abruptly to the right, splitting the mountain longitudinally. On account of this feature the gorge was named Split Mountain Canyon. The canyon has a broad, flaring entrance, similar in structure to the mouth of Whirlpool Canyon. It is broad and rugged, with a line of majestic crags and buttresses standing sentinel on each side.

Rapids follow one another in quick succession through the canyon, but none of them are particularly dangerous at the stage of the river to be expected during August in years of average run-off. There were two rapids that might be called worthy of note. The first one of these is at a point where the river turns abruptly to the right, crossing the canyon in a long chute at right angles and striking the opposite wall, where it has partly cut a channel in the solid rock, somewhat similar to that at Lower Disaster Falls, in the Canyon of Lodore, but not so far under. At the other rapid the river channel is contracted to a very narrow width, with a rather steep slope. The current is swift, and the water surface is choppy. The boulders in the channel were all a safe distance below the water surface, and the boats shot through with almost express-train speed. The ride was decidedly thrilling.

Very good camp sites are numerous throughout the Green River canyons above the Uinta Basin, and among the best ones was the site in Split Mountain Canyon on a large sand bar at the foot of a splashy rapid about 4 1/2 miles down the canyon. The eddy from the rapid was a good swimming hole but not very inviting because the water was so muddy. A clear spring near the upper end of the bar furnished good drinking water, the clean, white sand offered plenty of good places for beds, and a large pinon added to the beauty of the scene, with the vertical rock cliffs rising immediately behind it, and the wonderful buttressed wall receding in the distance down the canyon. The coloring is dull gray with a little red and ocher, and the shadows of the late afternoon, extending artistically over the general scene, add a very beautiful effect.

At the mouth of the canyon about 150 feet above the river in the left wall is a large cave. To reach it one must climb up over a mass of huge boulders that have sloughed off the main cliff and nearly sealed the entrance. The cave is about 20 feet in diameter and roughly circular, and the highest place in the ceiling is 8 to 10 feet above the floor. The floor is covered to an unknown depth with sand as fine as theffinest flour, which has drifted in and formed a large mound in the center. Animal bones were strewn around, and from all appearances the place is a resort for wild beasts.

Split Mountain Canyon is 7 miles long and has a total fall of 145 feet, or an average of 20.7 feet to the mile.

Uinta Basin.--After leaving Split Mountain Canyon the river flows with a gentle current in a meandering course among low rolling hills, usually barren of vegetation and lacking in scenic interest. At two or three places, however, attention is drawn by some abandoned machinery and mechanical devices along the banks, marking the sites of old placer operations. At one place a huge dredge was installed and several buildings were erected, but reports indicate that the dredge was never put into operation. Everything is now in a dilapidated condition, and the site is a dismal reminder of an expensive venture.

> In its meanderings the river passes within a mile of the Dinosaur National Monument, about 6 miles northeast of the settlement at Jensen. This quarry, as it is commonly called, is one of the world-famous cemeteries of prehistoric giant beasts, and it has furnished a number of very significant specimens of dinosaurs.
>
> About 3 miles above Jensen Brush Creek enters the river from the west. Its waters are used extensively for irrigating the bench lands in the vicinity of Jensen. At Jensen a bridge spans the river on the Victory Highway and there is a general merchandise store that is the last place at which supplies may be purchased on the eastward trip until the small settlements in the Yampa and White River Valleys in Colorado are reached. . . . . .

Upon coming out of Split Mountain Gorge around August 25 the party was feted at the dinosaur quarry by Earl Douglass and visitors A. S. Coggeshall and O. A. Peterson from the Carnegie Museum at Pittsburgh.[23]

In November Woolley was busy preparing a report on this expedition's findings, including a consideration of water supply, river control, water power and irrigation possibilities. Eventually, the U. S. Geological Survey was to publish a 16-sheet "Plan and Profile of Green River, Green River, Utah, to Green River, Wyoming," a folio including 10 plans and 6 profiles based upon the results of this and earlier reconnaissances. Also, in 1930 Woolley's comprehensive report, "The Green River and its Utilization," was published as Geological Survey Water-Supply Paper 618, incorporating material from the various surveys.

The Lodore Canyon site, of course, had not been considered a feasible location for a dam and reservoir, as previously noted. However, as a result of these surveys a dam was proposed for the head of Whirlpool Canyon where the Green River left Echo Park.[24] This would be a development similar to that planned for Flaming Gorge. The Canyon of Lodore and the Blue Mountain Canyon on the Yampa would form the reservior, with the backwater extending up each stream about 20 1/2 miles, creating a

storage capacity of about 575,000 acre-feet. The static head of the reservoir (with a dam width of about 600 feet at the top) would fluctuate between 280 and 300 feet and would make possible a power capacity of 86,000 kilowatts, although this might be reduced if much water were drawn out for irrigation purposes.

With a dam at this site, advantage would be gained of the combined flow of both the Green and Yampa. No serious inundation of lands in Browns Park would occur, evaporation losses would be at a minimum because of the narrowness of the canyons concerned, and a portion of the reservoir could be used for stream regulation.[25]

Still another power site on the Green River was planned for the lower end of Split Mountain Canyon (about one mile above the gorge end).[26] The proposed dam (similar to that proposed for Flaming Gorge) would have a width of 150 feet at the water surface and the reservoir would have a crest length of 1000 feet at a height of 250 feet. Storage would extend upstream into Island Park. This was the proposal for a power site.

Another plan was suggested for a joint power-irrigation development at this point.[27] This, the Ratliff project, would involve a tunnel from immediately above the proposed dam extending almost due south to Red Wash, about one mile, and then a penstock from its outlet to the mouth of Red Wash at the Green River, about 1 and 1/2 miles. This would give an additional head of 65 feet, adding about 25,500 horsepower to the capacity of the power site after allowing for irrigation of about 12,000 acres of land west and south of the tunnel outlet. The tunnel and related structures would increase the cost of the development but the irrigation features would make it more attractive. If the static

head of the reservoir water were k at an average of 225 feet (with the top 50 foot beyond this u ed for regulation), the power capacity would be 68,850 kilo ts; ultimate irrigation use above the reserv r might reduce this by no more than 15%.

Also during 1922 Warren Oakey, hydraulic engineer for the U. S. Geological Survey, accompanied surveying party down the Yampa River from Craig to its entrance into the Green at Echo Park and prepared a report.[28] Among other recommendations from this expedition was the designation of the Lily Park Reservoir Site, with a proposed dam approximately where the Yampa River enters the present monument boundary (Sec. 20, T. 6 N., R. 99 W.).[29] The proposed dam, about 60 feet high, was not specifically located, however. It could be used for regulation of downstream water flow in conjunction with lower power sites but would be of little significance either for flood control on the Lower Colorado River or for irrigation.

Utah Power and Light Company was continuing its interest in water developments on the Green River; and in mid-1923 the Vernal Express reported that Utah Power would expend between $16,000,000 and $20,000,000 on the Flaming Gorge power project.[30] Meanwhile, there was some optimism that "eastern capitalists are ready to furnish money" for a power plant at the mouth of Split Mountain Gorge which would mean "power for transportation, power for irrigation of lands on the Green river, above and below Jensen; power for the development of the fine placer gold in the rich sands on the Green river; power for a fixation plant to produce atmospheric nitrogen..... The power site is a most perfect one and can be developed at a minimum of cost."[31]

A. E. Humphreys of Denver, who may have been representative of the "eastern capitalists," hired a hydroelectric engineer named Gould in early April of 1924 to examine the Split Mountain dam site.[32] Earl Douglass, by the way, was also employed at this time by Humphreys to work on the geology of the site.[33] Gould was impressed by the dam possibilities and felt that it would be possible to obtain a permit for development from the federal government. However, Woolley of the U.S.G.S. personally did not favor the granting of such a permit to private enterprise.[34]

In August of 1924 Humphreys and J. H. and Mary E. Ratliff of Vernal applied for a power project on the Green River at Split Mountain Gorge, in compliance with the Federal Water Power Act (41 Stat. 1063).[35] The planned dam would be 140 feet high, with a power plant and associated tunnels and irrigation canals.[36] The main use of the power would be for mineral exploitation in the region.

Since Utah Power and Light some time earlier had put in an application for a dam at Flaming Gorge, with the possibility of power site development downstream to Split Mountain,[37] there were now conflicting applications for permits to develop the latter site. This conflict was referred by the Federal Power Commission to Mr. Woolley for recommendations, as if both permits had been filed concurrently.[38]

On September 26, 1924, Utah Power filed an application with Utah State Engineer Lloyd Garrison for water rights specifically involving Split Mountain Gorge.[39] It was the company's proposition to construct a 225-foot-high dam there which would form a reservoir with 2,000,000 acre-feet of water. Through a large diversion tunnel (24 feet in diameter and 4000 feet long, dug through the

canyon wall) 5,500 second-feet of water would be drawn to operate a number of power wheels before returning to the Green River about seven miles upstream from Jensen.

As it turned out, the federal government at this time granted neither application; nor did Utah Power and Light Company get the final go-ahead on the Flaming Gorge Reservoir.[40] Indeed, Humphreys' application was finally suspended by the Federal Power Commission in late December of 1930 until interstate agreements regarding division of the waters of the Colorado had been settled. And it was the Power Commission's personal feeling that the Humphreys power application would never be granted.[41]

The decision in the mid-20's to delay developments on the Colorado River tributaries was related to the pending ratification of the seven-state Colorado River Compact.[42] However, Woolley was instructed to proceed to the source of the Green River during the summer of 1926 and "make a determination of the possible storage capacity of numerous lakes that feed the river."[43]

Although nothing came directly and immediately from any of these early ventures, it is certainly evident that there had been much interest and ferment relative to power and reclamation possibilities in the Dinosaur area during the first quarter of the present century; and it comes as no surprise that this interest was to be resurrected and heightened in coming years.

The end compartments were equipped with hatch covers which were fastened with thumb nuts. These covers were made water-tight by lining the contact edges with rubber. The frames of the boats were oak, and the two large ones had ship-lapped sides. The bottoms were flat and were protected by oak strips running lengthwise. Three men, including the boatman, rode on each of the large boats and two on the small one. The passengers sat on the hatches. After some deliberation on names for the boats the question was finally left to the boatmen, with the result that the names Utah, Wyoming, and Colorado were chosen and painted on the respective boats. - Woolley, op. cit., 39-40.

22 - Woolley, op. cit., 45-51.

23 - Vernal Express, August 25, 1922.

24 - Woolley, op. cit., 241-242.

25 - Woolley, op. cit., 234-235.

26 - Woolley, op. cit., 242-243.

27 - Woolley, op. cit., 187, 243. The Ratliff project contemplated a diversion of 200 second-feet of water from the proposed reservoir for irrigation purposes above Jensen.

28 - Woolley, op. cit., 3.

29 - Woolley, op. cit., 124-125.

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22 - Woolley, on. cit., 45-51.

23 - Vernal Express, August 25, 1922.

24 - Woolley, on. cit., 241-242.

25 - Woolley, on. cit., 234-235.

26 - Woolley, on. cit., 242-243.

27 - Woolley, on. cit., 187, 243. The Ratliff project contemplated a diversion of 200 second-feet of water from the proposed reservoir for irrigation purposes above Jensen.

28 - Woolley, on. cit., 3.

29 - Woolley, on. cit., 124-125.

30 - Vernal Express, June 22, 1923.

31 - Vernal Express, August 17, 1923.

32 - Letter, Douglass to Pearl, April 10, 1924. Douglass correspondence.

33 - Letter, Douglass to F. S. Dellenbaugh, May 5, 1924. Douglass correspondence. Douglass looked forward to Humphreys' obtaining the permit, since a construction camp would then presumably be established and Douglass' home could perhaps be rented. - Letter, Douglass to Pearl, Aug. 16, 1924. Douglass correspondence.

34 - Letter, Douglass to Pearl, April 10, 1924. Douglass correspondence.

35 - Vernal Express, August 15, 1924: "...have applied for a power project on Green River in T. 4 S., R. 25 E., Ts. 3 and 4 S., R. 24 E., and Ts. 3 and 4 S., R. 25 E., Salt Lake Meridian, in the vicinity of Split Mountain Canyon."

36 - Letter, Douglass to W. B. White, May 18, 1924. Douglass correspondence.

37 - Vernal Express, September 12, 1924: "Some time ago the commission granted the power company a preliminary permit to build a dam and develop power at the Flaming Gorge on the upper Green river in northeastern Utah."

38 - Ibid.

39 - Vernal Express, October 3, 1924.

40 - Vernal Express, August 13, 1926.

41 - Letter, Brooks to Albright, May 21, 1931. Nat. Archives File 500, Dinosaur.

42 - Vernal Express, August 13, 1926.

43 - Ibid.

POWER AND RECLAMATION FERMENT DURING THE 1930's

Up until 1931 there may have been much uncertainty about the development of Green River water resources; but there had been no conflict with National Park Service jurisdiction, inasmuch as the 80 acres which comprised Dinosaur National Monument did not encompass any part of the river. In the 1930's, however, the proposed and eventually realized enlargement of the Monument to include the canyon country set the stage for future confrontation between use and preservation.

While the withdrawal by presidential executive order of the Split Mountain Gorge area was being considered in 1931, "the first-form reclamation withdrawal in connection with the Colorado River Storage Project" had been noted; and General Land Office Commissioner Moore recommended to Albright that the land be set aside subject to the power and reclamation withdrawals.[1] When Acting Secretary of the Interior Joseph M. Dixon transmitted the tentative executive order to Hoover, he expressed assurance that the execution of this executive order would not in any way interfere with these withdrawals. Dixon also commented that "it appears that the area covered by this proposed withdrawal may have greater public value from a scientific standpoint and for the administration of the Dinosaur National Monument than for economic development...."[2] In the actual executive order of August 12, 1931, which in a sense paved the way for eventual enlargement of the Monument, the Split Mountain Gorge withdrawal was [illegible], made subject to, among other things, the power-site and reclamation claims.[3]

Meanwhile, during this same period (1930-32) Kenneth Berg of Salt Lake City, formerly superintendent of the Strawberry Reclamation Project, had become interested in the possibility of a major transmountain water diversion project which would bring water from the Colorado River drainage into the Great Basin.[4] From a proposed reservoir at Flaming Gorge one million acre-feet could be taken, joined at Whiterocks by water (400,000 acre-feet) from a reservoir at Split Mountain Gorge, power being generated at the latter site to pump the water westward. This plan met with the approval of several members of the Utah Water Storage Commission, including William R. Wallace, and E. R. Dolder of Denver, who spoke on behalf of the project in Washington. What shortly was to become known as the "Colorado River-Great Basin Project", evolving out of these earlier ideas, was itself conceived by Leland H. Kimball, who was metropolitan water district engineer for Salt Lake City.[5]

In 1934 local power and reclamation activities began to pick up. Ralf Woolley was conferring in early January with officials of the U. S. Coast and Geodetic Survey about the establishment of control stations on the Green River and contemplated putting a party of engineers on the Green in the spring to survey the river from its headwaters to Green River, Utah.[6] During the summer the U. S. Reclamation Service had a crew surveying the Yampa River for "possible reservoir sites and irrigable land."[7] The power filing and dam site at Split Mountain Gorge had been indicated on N.P.S. Chief Engineer Kittredge's map of the area (Section 20, T. 4 S., R. 24 E.).[7a] Conrad Wirth appreciated that Dinosaur National Monument had primarily been set aside for

scientific, rather than scenic, reasons but still wondered "what effect this dam if constructed would have on the stream flow below it....."[8]

By 1935 momentum was gathering for actual inclusion of the canyon country in the Monument, a situation which was bound to complicate ~~obviously complicated~~ potential power and reclamation considerations. Utah Light and Power had in January of 1932 filed an application for a preliminary permit for a power site reservation in the Yampa and Green River section (two specific sites were designated),[9] but Arno Cammerer optimistically expressed to Secretary Ickes that "it will be many years before this development will be undertaken, if at all."[10] This also seemed to be the thinking of the Federal Power Commission about private developments, believing that "the public interest in this major power resource is too great to permit its impairment by voluntary relinquishment of two units in the center of the scheme,"[11] referring to Utah Power's two sites. In late spring of 1935 the Utah Light and Power Company voluntarily withdrew its application, which led Cammerer to anticipate ~~(illegible)~~ that "perhaps the power resources of the Yampa and Green Rivers in the region are not important, and that the Federal Power Commission might be willing to reconsider a possible vacation of the power withdrawal."[12] By the way, about this same time Humphreys' application for a power site at Split Mountain was withdrawn.[13]

The Federal Power Commission had assured the National Park Service that it would not object to the enlargement of the national monument, "subject to all existing valid rights,"[14] including power and reclamation claims. Cammerer, however, still

hoped that these governmental withdrawals in the entire area could be vacated, which "would make possible the establishment of the monument by a proclamation protecting it from any future power development."[15] He suggested to Ickes that the F.P.C. be approached with this possibility in mind; and Ickes passed the idea on to Frank R. McNinch, chairman of the Federal Power Commission, in a letter of November 6, 1935,[16] with the thought that "the power resources of the section may not be as important as originally believed." Ickes concluded his note: "I shall appreciate receiving your opinion as to the possibility of releasing the power withdrawals that exist in the area. By such action the proposed monument would be placed in a much better position from the standpoint of administration." The Federal Power Comission did not acquiesce.

In December of 1935 a meeting was held in Salt Lake City for persons interested in a water conservation congress for the Colorado River watershed in Utah; and at this meeting State Senator H. B. Calder from Vernal emph emphasized the great benefits which would be received by the Ashley Valley if a dam could be built at the mouth of the Green River gorge. His comments were well received by those in attendance, including Utah Governor Henry H. Blood; and a resolution was passed "asking full cooperation of all interests for water conservation in the Green River and Colorado river basin for a comprehensive survey of water resources."[17] Representative Abe Murdock promised his full support towards expediting such a survey.

In 1938, as it became evident that indeed the canyon country would imminently be added to Dinosaur National Monument, the

Vernal Lions Club, in indorsing the addition, included a proviso "that a number of power sites be reserved for development."[18] This declaration of interest in Dinosaur National Monument water resources by Vernal citizens was prophetic of the attention which that community's residents were to pay to this topic for years to come.

Despite Cameron's earlier optimism that power withdrawals might be eliminated from the monument addition, President Roosevelt's executive order of July 14, 1938, which incorporated the Green and Yampa canyons into Dinosaur National Monument, delineated that prior power and reclamation rights in the newly enlarged monument would be recognized.[19]

However, investigation at this time by the National Park Service turned up some highly pertinent considerations relative to the status of these holdings within the newly enlarged monument. The 6,400 acres in upper Lodore Canyon (Brown's Park) constituted a Reclamation Withdrawal, made in 1904, which had to be honored even after inclusion in the Monument. The Bureau of Reclamation reportedly was willing to consider restoring these withdrawn lands, if an official request were received.[20]

The remainder of public lands along the Green and Yampa Rivers, on the other hand, had been "reserved and/or classified for power site purposes." Interpreting the amended Federal Water Power Act of August 26, 1935, Section 201 (49 Stat. 838), as it applied to national parks and monuments, it would appear that even though an executive order creating a national monument might pay lip service to such power site reservations, the Federal Power Commission was prohibited from issuing any permits

for development of power on lands so classified: "....development under the Water Power Act can not be permitted even with the provision for it in the proclamation since Congress has defined a reservation to exclude National Monuments."[21] This particular interpretation is worth keeping in mind as the Dinosaur National Monument reclamation controversy unfolds.

Within two months after the signing of the proclamation, there were public meetings held both in Craig (September 17) and Price (September 19) to discuss control of floods, water conservation, soil erosion prevention, etc., on the Green and Yampa in accordance with the congressional act of June 28, 1938. Another hearing was to be held at Salt Lake City on September 20. All hearings were to be conducted by Major Theodore Wyman, Jr., of the U. S. Engineers Corps regional district.[22]

In September the U. S. Reclamation Service had a survey party located at Vernal which under the direction of William G. Nebuniels, engineer-in-charge, was surveying the Split Mountain project "to determine its feasibility as a water storage unit."[23] At a Vernal Lions Club luncheon on September 28 (or possibly September 21), H. B. Calder heralded the possibility of a dam at Split Mountain by pointing out that it "would provide water for the irrigation of 12,000 acres of new land, furnishing new lands and homes for thousands of new settlers in Uintah county....and provide power to develop the vast stores of phosphates and other industries."[24]

Encouraged by the Reclamation Service, representatives of Vernal, Uintah County, the Vernal Lions Club and the Utah Water Storage Commission met on October 1, 1938, to select projects

in Uintah Basin which would merit an investigation by the Service. Recommended, among others, were the Split Mountain site and the White River-Yampa River project for Dead Man Bench, which would take water from the White River or the Yampa near Sunbeam.[25]

Reclamation engineers were busy during January and into late spring of 1939 testing suitable points for a dam site in Split Mountain Gorge; but their informal reports were not very encouraging: "...few places have merit from an engineering point of view. The work however, is progressing and sites which are superior to those which have already been tested may yet be found."[26] This informal commentary noted by Foyle in his Dinosaur monthly report for March, 1939, is especially interesting when compared with a subsequent statement by Reclamation Commissioner John C. Page to Utah Representative J. W. Robinson that "reports current in Utah that surveys thus far made have demonstrated the Green river-Bear river diversion project to be impracticable were declared unfounded.... ....As far as the reclamation bureau know from the facts already gathered, the project was feasible...."[27] Of course, Page was referring to the entire project and not just the Split Mountain dam site.

It was in 1939 that a fever-pitch interest began to generate over the reclamation possibilities of the Green River and its tributaries. A committee of outstanding Utah engineers, after a month-long study, announced in early February that the Split Mountain dam project was "technically feasible and desirable."[28] Building on Kenneth Berg's and Leland Kimball's earlier ideas, the committee envisioned that from the reservoir at Split Mountain water would flow along a 230-mile canal westward into

the Great Basin to irrigate 600,000 acres of arid wasteland, as well as affording electric power. (In addition to the dam at Split Mountain, there would have to be other dams upstream, including one on the Yampa River at Juniper where a reservoir impounding 1,200,000 acre-feet was envisioned.[29] Another "made to order" dam site existed at Flaming Gorge where a reservoir could capture about 1,600,000 acre-feet.[30] (There were projected power plants at Split Mountain, Lily Park and Cross Mountain.) The Utah legislature was to be asked for $100,000, presumably matched by a similar amount from the federal government, to undertake a thorough study of what was now known as the "Colorado River-Great Basin Project," to be carried out by the Reclamation Service or a similar group of technical experts.[30a]

This rather grandiose idea moved towards realization with the introduction into the Utah state legislature during the week of a bill seeking the appropriation of the $100,000, to be matched by federal funds. This bill, Senate Bill No. 242, was supported by many organizations in the state, including the Salt Lake City Chamber of Commerce, Ogden Chamber of Commerce, Associated Civic Clubs of Southern Utah, Vernal Lions Club, Board of Uintah County Commissioners, and others. The latter sent letters to every member of the Utah legislature. The economic potential of the proposed project ~~(illegible)~~ fired the imagination of the Vernal Express: "...Vernal's population will be increased three-fold over night. All the products of our farms will find a ready market at their door. Land values will shoot skyward and the Basin will see an era of prosperity never before attained."[31]

On March 6, the Utah State Senate, with little opposition,

passed Senate Bill No. 242 to appropriate $62,500 "for a survey of the Green River-Great Basin Water project, which will benefit Utah more than any single legislation passed in the history of the state."[32] Governor Blood signed the bill on March 20.[33]

It was expected that a staff of approximately fifty men would be assigned to the Uintah Basin area to carry out the survey, which would be planned in the Salt Lake City office of the U. S. Reclamation Service.[34] Actual construction work would begin as soon as the survey was completed, possibly within three years. There were now five dams being contemplated: Minnie Maudo, Dowey, Juniper, Flaming Gorge and Split Mountain, with power plants at the last three. In addition to power and reclamation, the Vernal Express visualized that these reservoirs would constitute "new major tourist attractions."[35]

In April the U. S. Senate Appropriations Committee approved funds for the Colorado River-Great Basin reclamation survey, including $65,000 which would match Utah's contribution for the Uintah Basin studies.[36] Soon the state legislature authorized counties, municipalities, metropolitan water districts and conservation districts to levy up to one mill to raise funds for participation in the project.[37] Already, in two applications, the Colorado River-Great Basin Water Users' Association was asking rights to irrigation water and power.[38]

As the project evolved, by July of 1939 there were six proposed dams, including Flaming Gorge (226 feet high, horsepower capacity 176,000), Red Canyon (270 feet high), Swallow Canyon (200 feet high, 175,000 horsepower), Island Park (425 feet high, 358,000 horsepower), Split Mountain (200 feet high, 233,000 horsepower), Curay or Rock Creek (275 feet high, 206,000 horsepower),

and Rattlesnake (300 feet high, 260,000 horsepower).[39] Most of the power generated would be used for pumping water in conjunction with the Colorado River-Great Basin Project, any surplus being marketed "for industrial or other purposes."

$30,000 of Utah funds, plus federal, were allocated for engineering surveys, which were underway by mid-1939, with more than a dozen survey parties in the field.[40] Reclamation Bureau engineers and geologists were investigating dam sites along the Green up to Flaming Gorge and down to the Colorado and the Yampa up to Cross Mountain and studying all possible alternative routes for the 230-mile aqueduct from the Green. A team was busy at Split Mountain Gorge, near where the actual water diversion was planned. Ralf Woolley was conducting further water supply and power studies. In late July, the many activities were summarized by F. H. Richardson, secretary of the Colorado River-Great Basin Water Users' Association, in the first comprehensive progress report since the project got underway.[41]

Towards the end of 1939 a Reclamation Service engineering party consisting of two surveyors and seven assistants was making a topographical survey and map of the Echo Park dam site under the leadership of Junior Engineer Carl E. Roberts.[42] This party was expected to take about six weeks to complete its survey, finishing around Thanksgiving. It was anticipated that later there would have to be drilling in the area to test for dam foundations. Getting to the survey camp was arduous: coming over Blue Mountain by car to Pool Creek, then by wagon to the river, and finally down the river to the campsite by boat.[43]

In a sense Dinosaur National Monument was benefitting from the flurry of activity in its area. For example, in order to

gain easier access to the Split Mountain site, the Reclamation survey crew there had to improve the road--nearly impassible before; and along the improved road came increasing numbers of tourists to view the gorge. Indeed, Glen D. Nasson, in charge of the local U.S.B.R. work, requested the county to send a road grader out...which had been done by the end of April, 1939.[44] Later, the same thing would happen to the road into Echo Park.

At the 1939 Uintah Basin Industrial Convention meeting in August, Governor Blood sounded the clarion for the region's water development: "This Basin must utilize water on every possible acre of land if we are to grow and prosper agriculturally. The public may rest assured that the interests of Utah in the vast water facilities of the Colorado river for irrigation and power purposes are being guarded and protected."[45]

A different note--pertinent to Park Service areas--was sounded by the National Reclamation Association, representing irrigation interests in seventeen western states, at its early winter conclave in Denver. Without a dissenting voice, this group demanded national legislation "to require approval of the people of a state before any further national parks, national monuments, reservoir areas or any other federal reservations or special areas--to be established within the state.... In the case of many...parks and monuments, no such provision was ever made and the states are finding valuable reservoir and power sites tucked away in special areas where they cannot be developed."[46]

(References Cited)

1 - Letter, Moore to Albright, July 25, 1931. Nat. Archives File 580, Dinosaur.

2 - Letter, Dixon to President Hoover, August 8, 1931. Nat. Archives File 1978, Secretary of the Interior.

3 - Executive Order No. 5604, August 12, 1931. Nat. Archives File 580, Dinosaur.

4 - Vernal Express, July 27, 1939.

5 - Ibid.

6 - Vernal Express, July 26, 1934.

7 - Ibid.

7a- This was Federal Power Project Withdrawal No. 524 and Power Site No. 732. - Letter, Brooks to Albright, May 21, 1931. Nat. Archives File 580, Dinosaur.

8 - Letter, Wirth to Littredge, October 29, 1934. Nat. Archives File 2150.

9 - Letter, Ickes to Mellinch, November 6, 1935. Nat. Archives File 1978, Secretary of the Interior. This application was on file in the Denver office of the Reclamation Service.

10 - Letter, Cammerer to Ickes, January 16, 1935. Nat. Archives File 1978, Secretary of the Interior.

11 - Letter, Federal Power Commission to National Park Service, December 13, 1934, cited in Memo, Cammerer to Ickes, July 30, 1935. Nat. Archives File 1978, Secretary of the Interior.

12 - Letter, Edward T. Taylor to Federal Power Commission, June 3, 1935, cited in Memo, Cammerer to Ickes, July 30, 1935. Nat. Archives File 1978, Secretary of the Interior.

13 - Letter, Wendell Little to Ben Thompson, February 2, 1938. Nat. Archives File 2164, Lands.

14 - Letter, Cammerer to Ickes, January 16, 1935. Nat. Archives File 1978, Secretary of the Interior.

15 - Memo, Cammerer to Ickes, July 30, 1935. Nat. Archives File 1978, Secretary of the Interior.

16 - Letter, Ickes to Mellinch, November 6, 1935. Nat. Archives File 1978, Secretary of the Interior.

17 - Vernal Express, December 26, 1935.

18 - Vernal Express, April 14, 1938.

19 - Executive Order, July 14, 1938.

20 - Letter, Kendall Little, Planning Coordinator N.P.S., to Ben Thompson, February 2, 1938. Nat. Archives File 216½, Lands.

21 - Ibid. A sentence in this letter read "The Power Commission apparently did not realize when they wrote the 1936 letter that when the monument is created, they are thereby prohibited from issuing any permit for development." Someone scribbled on Little's letter "Are we ethically obligated to tell the Commission?" And the jotted reply was "No."

22 - Vernal Express, September 8, 1938.

23 - Vernal Express, September 29, 1938.

24 - Ibid. This luncheon was on a Wednesday. Since the Express was published on Thursdays, it could have been September 28, if the newspaper processed news that fast, or September 22.

25 - Vernal Express, October 6, 1938. Attending this meeting were H. D. Calder, R. C. Cooper, John W. Weaver, R. G. Labrum, Byron Goodrich, W. E. Henderson, L. P. Christenson, E. J. Longhurst, and Attorney Wallace Calder.

26 - Dinosaur National Monument, Monthly Report, March, 1939. Dinosaur National Monument Files. The engineering force consisted of Junior Engineer Lane with aides McLeod and Gaskell. These particular individuals finished their assigned field work on March 21, 1939, and returned to Omaha the following day.

27 - Vernal Express, April 6, 1939.

28 - Vernal Express, February 9, 1939.

29 - Ibid.

30 - Vernal Express, February 16, 1939.

30a- Vernal Express, February 9, 1939.

31 - Vernal Express, March 2, 1939.

32 - Vernal Express, March 9, 1939.

33 - Vernal Express, March 23, 1939.

34 - Ibid.

35 - Vernal Express, March 9, 1939.

36 - Vernal Express, April 20, 1939.

37 - Vernal Express, July 13, 1939. L. M. Kimball, Engineer-Manager of the Colorado River-Great Basin Water Project, underlined for Uintah County Commissioners the potential return on any investment the County might make: "For every dollar Uintah county puts into this project there will be a $25 return." He estimated that more than $100,000,000 would be spent in the county. - Vernal Express, August 3, 1939.

38 - Vernal Express, July 13, 1939.

39 - Vernal Express, July 13, 1939.

40 - Ibid.

41 - Vernal Express, July 27, 1939.

42 - Vernal Express, November 2, 1939.

43 - Vernal Express, October 19, 1939.

44 - Vernal Express, April 13, 1939; May 4, 1939.

45 - Vernal Express, August 31, 1939.

46 - Vernal Express, December 7, 1939.

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BLEAU FOR POWER AND RECLAMATION: The World War II Period

In the spring of 1940 plans were moving ahead for diamond drill explorations at the dam site below Echo Park. M. Merriman, U.S.R.S. geologist at Denver, was laying out a system of drill holes; and it was expected that actual drilling would begin in late May of 1940 under the direction of E. G. Nielsen (reclamation engineer supervising Utah projects), with Laurence Kreager, driller, in charge of the field party.[1] The county road grader was improving the Blue Mountain road to the vicinity of Pat's Hole so that the drilling crew could get in more easily.

Meanwhile, agitation for support of the Colorado River-Great Basin Water Project was continuing on several fronts. Reclamation Commissioner John C. Page, Senator William H. King, and Colorado River-Greater Basin Water Users' Association engineer Leland H. Kimball appeared before the Senate Public Lands Committee on April 18, 1940, speaking on behalf of the King Bill which would determine the project's "engineering feasibility and probable cost of construction and operation and authorizing an appropriation of $75,000 to complete the survey....."[2] Page confided to Water Users' secretary R. H. Richardson that the Bureau of Reclamation was hastening the preliminary survey and that it might possibly be completed before the end of the year.[3]

By the beginning of summer, the road from Blue Mountain into the Pat's Hole region had been completed by the county and Reclamation Service, ready for the movement of heavy drilling equipment for testing "of the canyon floor and abutments for the main dam of the Colorado River-Great Basin project."[4] It was the plan to construct a barge in Pat's Hole to hold the drill, then

let it downriver to the dam site and anchor it.[5] A pipe would be run down through the overburden in the center of the river until solid rock was reached, then a 1¾" core 100 feet deep drilled. There would also be test holes in the abutments on the sides of the canyon. The crew probably would consist of seven men, with a main camp in Echo Park and a "spike camp" downstream at the drilling site, either on the barge itself or ashore.[6]

It was expected that drilling would be completed about the middle of July, and the crew would then move to the location of Rattlesnake Dam just above the confluence of the Price and Green Rivers. Meanwhile, the survey crew working at Rattlesnake would soon be moving to the Cross Mountain storage reservoir site on the Yampa River.[7]

Then, suddenly, in mid-October of 1940 the fervor over the Colorado River-Great Basin Project abated with the announcement by the Reclamation Bureau that the project "is not feasible now or in the immediate future." However, the Bureau reassured that "it does have possibilities for the far future."[8]

The conclusions of the Bureau were presented at a meeting in Washington by Reclamation Commissioner Page and Chief Hydraulic Engineer E. B. Debler after closed-door hearings which climaxed more than a year-and-a-half of intensive surveys. It was pointed out, among other things, that the cost of the Colorado River-Great Basin Project would have represented about four-fifths of the entire assessed valuation of the state of Utah.[9]

It was not long before "possibilities for the far future"

were being explored, with an emphasis, especially on power. Utah's new governor Herbert B. Maw promised his full support for the tabled project to the officers and directors of the Colorado River-Great Basin Water Users' Association in February of 1941, at which time Flaming Gorge was already up for major consideration.[10]

During the 1941 summer, with European war as a background, the federal government sent Dr. Charles E. Merriam, vice-chairman of the National Resources Board, to visit the proposed sites of five Utah water projects: Flaming Gorge, Dark Canyon, Dewey, Split Mountain, and the Rattlesnake Dam. Dr. Merriam's report would be used by Secretary of the Interior Ickes and others in "re-determining where best the government should undertake power development in the state."[11] The Bureau of Reclamation allocated $67,000 for a "comprehensive survey of hydroelectric power possibilities on the Green, upper Colorado and Yampa rivers" which was to commence in August,[12] and in June it re-established its office in Vernal.[13] The first work was scheduled for the Flaming Echo Park site, which was touted by Reclamation Bureau engineers "as one of the brightest power prospects in the area." Much survey work had already been carried out, of course, but this investigation would "fill in the gaps and prepare a comprehensive report on the power possibilities of the entire area."[14] By July there was a Reclamation engineering crew surveying along the boundary near Douglas Mountain.[15]

Using defense industry needs for power as a talking point, the Bureau of Reclamation towards the end of July, 1941, recommended to the Senate Public Land Subcommittee the immediate

construction of huge power plants at Split Mountain and in Echo Canyon. Acting Reclamation Commissioner Bashore emphasized that construction of those facilities would "avert what otherwise may be catastrophic consequences."[16] The Echo Park project would be given highest priority "because the storage capacity of this project can be utilized for all the other proposed power developments."[17] If began immediately, it was estimated that the Echo Park project could be completed in 1945, and its power plant could deliver between 75,000 (firm power capacity) and 125,000 (rated capacity) kilowatts.[18] The Vernal Lions Club[19] hastened to send Senator Murdock a telegram urging a power site for Split Mountain, pointing out that after the war emergency was past, the power could be used for the production of phosphate.[20]

By September the number of power sites being considered for development had "simmered down" to two, the Dewey site in Grand County and the Echo Park site.[21] The Vernal Express urged in an editorial that "a carefully prepared outline, showing the merits of the project, forwarded to Washington and supported by letters, wires from County Commissioners, Lions Clubs and various other organizations....would be very effective."[22]

During mid-November (1941) the Echo Canyon power site was visited by a party of officials from the Bureau of Reclamation and National Park Service "to determine the number of sections of land which would be required for the proposed dam and reservoir."[23] The group also visited the Split Mountain site. Reclamation representatives prophesied that "the immense lake which would be created by the Echo dam would become one of the big recreational areas of the west...." and would "form a nucleus of the large scale development of the scenic areas of

the Yampa and Green River canyons."[24]

Citizens of the Uintah Basin were becoming re-excited at this time by the possibility of power projects in Dinosaur National Monument. The Uintah County Commissioners again pledged their support for the Echo Park project,[25] and the Uintah Basin Federated Women's Clubs at a special meeting on November 28 prepared a petition to be sent to various Washington officials urging that work be started immediately on the Echo Park power site.[26] The Women's Clubs' move was hailed by the Vernal Express as "certain to have a far reaching effect in the development of the Uintah Basin and Eastern Utah."[27]

A Green River Development Association was organized in Vernal in December, to consist of five members each from eastern Utah counties, which would push to obtain a share of the funds available from the government for development of the Upper Colorado River system.[28] A first meeting was set for Price on January 17. Evolving out of this group, probably, in April was the "non-profit" Utah-Colorado River Conservancy Association, whose object was to conserve and develop "water and other resources of the Colorado River basin by a concerted effort of the ten river counties in Utah."[29]

Also in January a delegation of Uintah Basin citizens headed by Vernal Mayor B. H. Stringham sought assistance in the development of the Echo Park project from the State Publicity and Industrial Development Commission and the Colorado River-Great Basin Water Users' Association in Salt Lake City, especially emphasizing the value of the power for the development of the local phosphate industry.[30] Craig and Steamboat Springs Lions

were introduced to the value of supporting the Dinosaur projects by the Vernal Lions in late January and appointed committees to assist the Vernal group.[31]

About this same time the Colorado River-Great Basin Water Users' Association took steps to promote procurement of reclamation funds for Echo Park and the Dewey project;[32] and even the faraway Kansas Highway 40 Association was pushing support.[33] Senator Abe Murdock, Senator E. B. Thomas and Representative Rockwell W. K. Granger of Utah and Senator Ed Johnson and Representative Rockwell of Colorado voiced their approval of the endeavor.[34] Indeed, it was hoped that the project could be included in the O'Mahoney bill now before Congress.[35]

During the summer of 1942 the Bureau of Reclamation was at work again in the Echo Park area. It was the plan to drill eighteen additional test holes to the depth of 200 feet, some in the middle of the stream at the dam site.[36] Two test tunnels, 100 feet in length, were excavated to test the strata on either side of the site.[37] A survey of a proposed road from Island Park to Echo Canyon was conducted;[38] and a crew was checking possible gravel deposits at Island Park to be used in cement work on the proposed structure.[39]

The main camp again was at Pat's Hole, and a motor boat carried men and supplies to and fro the two-mile distance. There was a fairly large staff assigned to the project, including Reclamation Service foreman George Martinson, William McCarrel, Delmaine Martinson, Ny Rasmussen and J. Edwin Collier with the tunnel crew, J. G. Anderson in charge of the gravel survey team,

and Glen D. Lasson of Salt Lake City, assistant geologist, supervising the work at the dam site. Also associated with the staff were H. E. Neilson, William Jacobs, Earl Mar Edwards, Paul B. Olsen, and Rhea Haslem as office secretary.[40]

In August a crew of six men started work on drift ditches at the dam site. The latest plans called for a flow line at 5,500 feet,[41] but this was later changed to 5,600 feet.[42] (In December the survey camp finally broke up, and the personnel moved into Vernal.[43])

As events increasingly seemed to indicate that the dam below Echo Park might become a reality, the National Park Service sent a reconnaissance expedition down the Yampa River from Lily Park, starting on May 31, 1942, to survey archaeological sites which might be inundated by reservoir development.[44] Participants in this survey were Dr. Frank M. Setzler, Department of Anthropology curator at the U. S. National Museum, Dr. Baldwin, junior archaeologist at Boulder Dam Recreational Area, Coordinating Superintendent David M. Canfield of Rocky Mountain National Park, Dan Beard, regional biologist of N.P.S. Region Two (soon to become Dinosaur custodian), Charles Scoggins of the University of Colorado Museum, and Dinosaur custodian Ratcliff. Two boats under the guidance of Dan Hatch were to be used for the expedition, which was expected to last ten days to two weeks.

During the period of World War II, pressure for the power projects in Dinosaur National Monument was obviously enhanced by the national defense immendoes. There were some who felt that Park Service policy was standing in the way of water resources development within Dinosaur National Monument. State

Engineer T. H. Humphreys, secretary of the Utah Water Storage Commission, charged that "the parks people tell us provision is made for water development in these national areas, but if they are in earnest they might show it by recommending liberalization of policies governing the newly created Dinosaur National Monument.... Creation of the Dinosaur monument will stop construction of the Split Mountain dam....."[45]

On the other hand, the Park Service recognized the exigencies of war time and delineated its policy pertinent to Dinosaur water power developments in a report of June 27, 1944:[46]

> If and when it is shown that it would certainly be in the greater national interest to develop the water resources of the Canyon Unit than to retain the unit for national monument purposes and it then becomes evident that authorization for such developments will be given, the status of the unit should be changed to that of a multiple-purpose area in which water-control for the generation of power would be the principal use, and recreation the secondary but also important use.

World War II ended, however, before this policy declaration had to be carried to its ultimate end.

(References Cited)

1 - Vernal Express, May 9, 1940.

2 - Vernal Express, April 25, 1940.

3 - Vernal Express, May 23, 1940.

4 - Vernal Express, May 30, 1940.

5 - The "barge" actually was to be made up of two 30-foot rafts of three-inch Douglas-fir, lashed together and covered with a 11x30 foot deck upon which would be mounted the six tons of drilling equipment. Construction was supervised by Kreager and river-runner Dana Holmstrom. - Vernal Express, June 6, 1940.

6 - Vernal Express, May 30, 1940. L. L. Kreager was the drill foreman, assisted by Joseph Monger, driller, and Rulon Anderson, assistant.

7 - Vernal Express, June 27, 1940. In reality, the drilling apparently was not completed on quite this schedule. In mid-November there was talk of floating the barge down to Jensen "when high water permits." - Vernal Express, November 14, 1940.

8 - Vernal Express, October 24, 1940.

9 - Ibid.

10 - Vernal Express, February 27, 1941.

11 - Vernal Express, July 3, 1941.

12 - Vernal Express, July 10, 1941.

13 - Vernal Express, December 11, 1941.

14 - Vernal Express, July 10, 1941.

15 - Dinosaur National Monument Monthly Report, July 1941.

16 - Vernal Express, July 31, 1941.

17 - Ibid.

18 - Ibid.

19 - The Vernal Lions Club had an active Power Committee, headed by J. D. Jones, as well as an active Dinosaur National Monument committee, headed by J. A. Chaney, both of which were pressing for the power projects within the Monument. - Vernal Express, September 25, 1941.

20 - Vernal Express, August 7, 1941. The Humphreys Phosphate Company assured the Reclamation Service that if the Echo Park power site became a reality, the company intended to use large amounts of "cheap electricity" in its operations. - Vernal Express, October 30, 1941.

21 - Vernal Express, September 4, 1941.

22 - Ibid.

23 - Vernal Express, November 20, 1941. Representing the National Park Service were Frank Law Olmstead, Park Service collaborator, and Neal Puttersfield, Land Planning Division, both from Washington, Howard Baker of Omaha, Regional Chief of Planning, and Harold Ratcliff, Dinosaur National Monument custodian. H. E. Nielson of Salt Lake City, Regional Director, and C. A. Prescott, in charge of local surveys, represented the Bureau of Reclamation.

24 - Ibid.

25 - Vernal Express, December 4, 1941.

26 - Ibid.

27 - Ibid.

28 - Vernal Express, December 25, 1941. Uintah County representatives were Leon F. Christensen, J. C. Hacking, W. S. Henderson, C. C. Wright and Don B. Colton.

29 - Vernal Express, April 30, 1942. This Association, which was attempting to incorporate at this time, included among its 21 directors Don B. Colton and Leon F. Christensen of Vernal and J. Reuben Lee of Price. Later it was to become known as the "21 Counties Association." - Oren Stratton and Phillip Sirotkin. 1959. The Echo Park Controversy. P. 14. University of Alabama Press, University, Ala.

30 - Vernal Express, January 22, 1942.

31 - Vernal Express, February 5, 1942.

32 - Ibid.

33 - Vernal Express, February 26, 1942.

34 - Ibid; Vernal Express, March 5, 1942.

35 - Vernal Express, February 26, 1942. The Echo Canyon site had been omitted from this bill.

36 - Vernal Express, June 4, 1942.

37 - Vernal Express, September 24, 1942.

38 - Ibid. Preliminary reconnaissance indicated that the best place for a road from the gravel deposits to Echo Park would be along the south bank of the Green River. - Dinosaur National Monument Monthly Report, August 1942.

39 - Ibid. A crew was making tests for sand and gravel in the Island Park area in June; Reclamation Service foreman George Martinsen was with the crew all during July, and it was reported in August that adequate gravel for the project had been located. - Dinosaur National Monument Monthly Reports, June-August, 1942.

40 - Ibid.

41 - Dinosaur National Monument Monthly Report, August 1942.

42 - Dinosaur National Monument Monthly Report, December 1942.

43 - Ibid.

44 - Vernal Express, May 28 and June 11, 1942.

45 - Vernal Express, June 20, 1940.

46 - Report, Straus to Secretary of the Interior, December 20, 1949. Nat. Archives File 1276, Secretary of the Interior.

LULL BEFORE THE STORM: Power and Reclamation, 1945-1950. I.

Although Secretary of the Interior Oscar Chapman did not officially announce his decision to include Echo Park among the Upper Colorado River development projects until June 27, 1950, there had been increasing activity directed towards this end during the latter half of the 1940's.

In early 1945, even before World War II ended, the Reclamation Bureau was shaping a report to Congress, under authority of a special 1940 bill by Senator O'Mahoney of Wyoming, about a comprehensive water development plan for the Green River. Among the three proposed power projects was one at Echo Park (others at Desolation and Rattlesnake). A total of $90 million was being recommended for various power and irrigation projects along the Green River.[1] In April it was reported that $75 million had actually been allocated to construct the Echo Park power project and several irrigation projects in the Uintah Basin (Steinaker Draw, Tyzack Ranch, and others).[2]

Anticipating the importance dof the Echo Park project, the Vernal Lions Club in August set up an Echo Park Development Committee which included J. A. Cheney, J. D. Jones and C. R. Holstead.[3] At this time the Reclamation Bureau was expecting the cost of the dam at Echo Park to total $75 million.[4] A complete blueprint "for a long-term program of development of irrigation, power, mineral resources, recreation and flood control" for the region was reportedly to be sent to Washington by summer's end.[5]

Citizens of the Uintah Basin were, naturally, excited about the possible power and reclamation developments. In mid-October

of 1945 the Lions Club Echo Park Committee called a special meeting at the Uintah State Bank in Vernal for a presentation of information on the various projects.[6] Reed Jerman, project planning engineer for the Bureau of Reclamation, outlined the direction of endeavors, all "dependant on the early construction of the Echo Park site..." From the irrigation standpoint, water from the Echo Park reservoir would flow by canal into the existing canals in the Uintah Basin, and a several-mile tunnel would bring Echo Park water to the Tyzack Ranch project. Jerman emphasized that the project would provide water for "all possible acreage in the Uintah Basin," and it was worth remembering that "every dollar spent for irrigation brings back $13." In addition to the irrigation aspect, power from the project could "be used for many new industries in this region," including proposed phosphate and asphalt plants. It was estimated that the Echo Park dam would impound about 2 1/2 million acre-feet, backing water 60 miles up the Green and 40 miles up the Yampa. On his visit to the Uintah Basin, Jerman was accompanied by Neil Murdock, regional geologist of the Reclamation Bureau; and during their stay they had an opportunity, accompanied by H. Eugene Nielson who was in charge of the local Reclamation Office, to run the Green River from Pat's Hole with Bus Hatch and to fly over the proposed Echo Park site.

On November 24, 1945, the Reclamation Bureau made public its "comprehensive plan" for the development and utilization of water resources of the Colorado River and its tributaries, which included the construction of Echo Park dam at an estimated cost of about $43 million.[7] Utah Governor Herbert B. Maw, visiting in Vernal in early December, pledged the State's support to the Echo

Park project, feeling that "the construction of the Echo Park dam was practically assured." With Maw was Ora S. Bundy, chairman of the Utah Department of Publicity and Industrial Development and president of the National Reclamation Association, who reported that the project was so far along that a contract could be let for its construction "within 60 to 90 days and the design of the structure finished as work went along."[8]

In its 1945 Christmas edition, the Vernal Express highlighted the impending reclamation projects, including photographs of the Green River gorge marked to show the height of the proposed dam and extent of the reservoir. It was noted that the Echo Park site was "one of the best for a storage reservoir to benefit Utah." The Split Mountain gorge was also cited as a possible dam site.[9] It was noted that it would be necessary to develop a road to the Echo Park area before the dam could be constructed, and this road-building project was expected to begin in early spring.

Without much initial encouragement from Washington, the local interest in the Echo Park project intensified in early 1946. Small wonder, when one reflects on State Engineer Edward H. Watson's calculation that "the most important problem facing the state in 1946 and subsequent years is the development of the Colorado river waters--a development which, if completed, will double the state's wealth."[10] In February, a series of meetings commenced in Vernal to consider the proposed Uintah Basin water problems and projects.[11] Also, in March, Ora Bundy, before a meeting of the Salt Lake City Optimists, emphasized the impact of Echo Park power on the development of Utah industry.[12]

The Bureau of Reclamation was optimistically increasing its

operations in the Vernal area, its staff having doubled in the early months of 1946 (to 19 in early April). The main function of Vernal office personnel was to aid in project surveys. Two field parties were now at work on the road from Island Park to Echo Park, and soon to be investigated was a Green River pumping project, the Split Mountain project, and other aspects of the Echo Park operation. The multiple-use reservoir there was now planned to impound 6 million acre-feet of water and include a 140,000 kilowatt power plant,[13] with a 600-foot dam. Meanwhile, in early April Leon P. Christensen, Vernal city and county engineer, together with nine prominent Utah engineers and politicians, met with Secretary of the Interior Julius A. Krug in Washington to lay the groundwork for the Central Utah Project, major feature of which, of course, was the Echo Park dam.[14]

The results of the April 9 meeting in Washington between the Utah group and Reclamation Commissioner Michael W. Straus were in part discouraging. Straus emphasized that the preliminary investigations on the Central Utah Project merely represented an initial step rather than an affirmation of the feasibility of the project. Much more surveying needed to be done before the project could be guaranteed. How much planning time would be needed would depend upon the number of engineers who could be assigned to the job and "whether other serious obstacles develop."[15] By the way, both Straus and Krug expected to visit Utah during the coming summer to look over the proposed project personally.

It was felt that congressional approval would not be necessary for the construction of the dam. Rather, the President, upon a recommendation from the Bureau of Reclamation, could

approve the project by decree.[16] However, there was some feeling that greater success would result if the Utah congressional delegation could get a bill before Congress.[17]

Utah officials certainly felt, in late spring of 1946, that the Bureau of Reclamation was wholeheartedly behind the project. Indeed, Utah Governor Maw reported that the Echo Park dam was the Bureau's "number one enterprise," and that the Bureau expected to submit a report, delineating the size of appropriations and other phases, to Congress by the end of June.[18] Anticipating increased activity, the Vernal office of the Reclamation Bureau moved from the county courthouse into its new quarters in the old Central School building on May 20.[19] The upper floor of the new quarters had been completely remodeled to house eleven drafting, engineering and clerical offices, and the staff now included 41 people, with five graduate engineers.

The expansion may have been a little previous, inasmuch as Congress slashed the Bureau's budget in late May,[20] and because of the coal strike trouble it seemed unlikely that Secretary Krug could visit the project in June. However, the topographical surveys for access roads to Echo Park were completed, and it was expected that during the summer survey work on canals and tunnels would occupy the staff.

A revision of plans permitted Krug, accompanied by Straus, to pay a hurried trip to Salt Lake City in mid-June, where they conferred with members of the Utah Water Users' Association and the Sixteen Counties Committee at the state capitol. Attending the meeting from Vernal were Mayor Stringham, Leon Christensen of the Sixteen Counties Committee, and Alma Preece. The two

Washington officials promised 100% cooperation with the Utah reclamation projects but advised that negotiations should be initiated to allocate water among the various western states.[21] The cooperative promise was, naturally, hailed by Utahans; but Senator Abe Murdock strongly attacked the idea of a compact as "unfair" and felt that the Utah project should proceed immediately.[22]

Negotiations among the Upper Basin states commenced in July of this year, but immediately conflicts began to arise. Utah, for example, feared that Wyoming irrigation use (with associated leaching) would pollute water coming into Utah's Green River and thus jeopardize the operation of the Central Utah Project.[23]

While this was going on, a bill authorizing the construction of the $300,000,000 Central Utah Reclamation Project, including Echo Park dam, was introduced into the Senate by Murdock (in June). Financial support for the project was to come directly from the Federal treasury, rather than from the Reclamation Fund; and the project would rank second only to the Columbia River Basin Project among the Bureau of Reclamation's enterprises.[24]

During the summer of 1946 the Bureau of Reclamation released its comprehensive Colorado River Basin Report, which included plans for the developments within Dinosaur National Monument. Central among the 27 proposed projects was Echo Park Dam, which would impound half of all the acre-foot envisioned in the Basin. Also recommended was the power reservoir at Split Mountain and the Lily Park site on the Yampa River. The Echo Park development bore a price tag of $68,800,000, while Split Mountain was estimated at $36,800,000 and Lily Park at $3,040,000.

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Also this summer the U. S. Coast and Geodetic Survey began reconnaissance work for the establishment of a triangulation network in the Central Utah Project area. This survey was in cooperation with the Bureau of Reclamation, and the latter was to assign an engineer to assist in station reconnaissance, approve the location and number of stations, and reimburse the Geodetic Survey for actual costs of the work, including personnel services.[26] Meanwhile, plans were set for an October survey of the water supply of the Green River by the U. S. Geological Survey.[27]

As the year 1946 came to an end, Governor Maw issued a proclamation on behalf of the State Engineer, making it illegal to file on Green River water (except for very small amounts) during the period when the Central Utah Project was being considered. This was done after Reclamation officials explained that "planning for the huge project must be based on water available at the present time and the project must not be hampered during the planning."[28] At this same time, State Engineer E. H. Watson, representatives of the Utah Water Association, and other Utah civic leaders drafted a letter to the Secretary of the Interior, asking federal approval of the Echo Park and other local projects and requesting that work commence on those projects prior to the signing of the Upper Basin States' compact.[29]

[redacted]

The Echo Park dam and other central Utah water developments were named the No. 1 project of the Associated Civic Clubs of Southern and Eastern Utah for the year 1947, and the state legislature was asked to create a State Reclamation Board of 15

members "to be charged with the proper development and protection of Utah's share of Colorado River waters."[30] But as the new year proceeded, it did not seem to be the one favoring the Central Utah Project.

In early May there were several personnel changes in the Vernal office of the Reclamation Bureau. Engineer Nielsen, who had been in charge of that office, was transferred to Salt Lake City where he would be associated with the Weber-Provo River Projects, while Keith Arthur and Christensen were shifted to the Spanish Forks office, still associated with the Central Utah Project, however. J. Gordon Anderson became the engineer in charge of the Vernal office.[31] Congress was making cuts in the Reclamation Bureau budget at this time, but Senator Watkins assured that this would not affect the planning of the Central Utah Irrigation Project.[32]

In early June, a U. S. Geological Survey party, accompanied by personnel from the Utah State Engineer's office, completed its survey of the Green River watershed between Linwood, Wyoming, and Jensen, Utah, the group traveling in two 16-foot, 500-pound compartment boats.[33] But almost concurrently, as the Colorado River Basin report was finally being readied by the Reclamation Bureau for submission to Congress, it was announced that the Central Utah Project would not be included. Instead, the Central Utah projects were supposedly to be incorporated into the Bonneville Basin report, which was being prepared by E. O. Larson, director of the Salt Lake Reclamation Bureau region. Assistant Reclamation Commissioner William E. Warne felt, however, that eventually the Central Utah projects would become part of the

Colorado River Basin development; and he urged that if citizens wanted to hasten this moment, they should see to it that the Upper Colorado River Basin states settle their differences over the allocation of the Basin's water.[34]

In mid-July, both Reclamation Commissioner Straus and Secretary of the Interior Krug echoed the latter sentiment in correspondence, noting that with respect to the inventory report on Colorado River projects, they "cannot now recommend authorization of any project."[35] And Director of the Budget James Webb agreed that authorization of any of the projects "should not be considered to be in accord with the program of the President until a determination is made of the rights of the individual States to utilize the waters of the Colorado River system."[36]

Throughout this period the Upper Colorado River Commission, officially to be created by the Upper Colorado River Compact of 1948, was meeting to consider an equitable division of the waters among the states concerned and insure conformity with the 1922 commitment to deliver 75 million acre-feet at Lees Ferry, Arizona, each decade.[37] The real hazard was that drought periods might well jeopardize any allotment of the water.

All in all, the Utah reclamation picture did not appear optimistic as 1947 drew to a close. Nevertheless, it still came as a great local surprise--"striking with the impact of an atomic-bomb"--when the Reclamation Service announced that the Vernal reclamation office was to close November 1, its operations being transferred to Spanish Fork.[38]

Although into 1948 there continued to be pressure on the part of Utah to energize the Central Utah Project, even Senator

Watkins was becoming pessimistic. He introduced a bill into the Senate which would authorize the construction of the project but warned his constituents in early February that it undoubtedly would not "come up for immediate consideration."[39] The failure of the Basin States to come to an agreement over the water rights continued to be a major stumbling block to progress.

However, in 1948 the Upper Colorado River Basin Compact, which allocated water to the four Upper Basin states and included some other agreements, was completed; and during the following year it was ratified and became effective.[40] This compact authorized the creation of an Upper Colorado River Commission which had broad powers "to engage in a number of engineering and administrative activities and to perform co-ordinative and promotional functions, as well. The Commission consisted of one commissioner from each of the four upper basin states, designated as provided by state law, plus one federal commissioner, appointed by the President, who served as chairman. The Commission employed a permanent staff consisting of a secretary, a chief engineer, and..... eventually an assistant chief engineer."[41] Included as secretary for the original Commission was John Geoffroy Will, who had been assistant chief counsel of the Bureau of Reclamation.

In February of 1949 all of the facts related to pertinent water resources were presented to the Colorado River Commission, with the request that this body "select and recommend jointly those reservoirs which they believed should be included within the plan of development and those which should be in the initial stage. Recommended for inclusion in the initial stage was Echo

Park, as well as Flaming Gorge, with Split Mountain scheduled for construction later.[42]

At this time the Bureau of Reclamation was circulating to the states concerned its plan for Upper Basin development, which was to become known as the Report of 1950.[43] The total cost of proposed projects was to be about $1½ billion; and it was proposed that repayment would be through sale of water to irrigators and municipal users and revenue from electric power.[44] Bureau Engineers emphasized that the two "wheel-horses" of the project were Glen Canyon and Echo Park. These, together with Split Mountain (tied to Echo Park), would provide nearly 70% of the power generating capacity and 60% of the water storage in the Upper Basin project.[45]

On April 11, 1949, Reclamation Commissioner Straus wrote Secretary of the Interior Krug....

> I am glad to inform you that, anticipating the approval by the Congress of the Upper Basin Compact, we are well along on such a plan. Early in February our Regional office at Salt Lake presented a tentative plan to representatives of the Upper Basin States and requested their advice on certain proposals contained therein and their recommendations for projects to be included at this time... As soon as we have received that information we can readily complete a report. In other words, we anticipate having a report on this plan by the end of the fiscal year, and possibly sooner.[46]

Assistant Secretary William Warne returned the note to Straus with an appended suggestion that a statement be released to the press "showing the Secretary's interest and your action and indicating how good it is to have the agreement..."[47] Straus replied that "while we have indicated that we hope to have a firm report on the development by the end of the fiscal year, I am reluctant to tie it down to a public commitment."[48]

While these preliminaries for the reclamation push of the next half-decade were being accomplished, there had also been developing, as will be seen in the next chapter, the first negative reactions to the "invasion" of the Monument. By 1950, thus, the stage was set for what would become a notorious conservation controversy.

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STIRRING OF THE OPPOSITION: Power and Reclamation, 1945-1950. II.

During late summer of 1945, while many regional voices were being raised in favor of the Dinosaur dams, a party of campfire girls from Colorado spent a five-day sojourn in the Yampa River canyon. After camping across from Steamboat Rock, in a spot which would be inundated if the Echo Park dam were constructed, the girls vociferously announced that the construction of such a dam "would be a crime against one of the most natural and scenic spots in the United States." The girls hoped that "Craig and Moffat County people would join their voices immediately in killing such a project, thereby leaving this bit of scenic and historic wonder to the people of the present and future..."[1] Little did the girls suspect that their campsite would shortly become the center of a nation-wide controversy and that their pleas were in the vanguard of thousands who would speak out, in the next decade, against the invasion of Dinosaur National Monument.

The Bureau of Reclamation had rather naturally anticipated that there might be some opposition to the development of reclamation projects within the Monument. Commissioner of Reclamation Harry Bashore suggested the possibility to Senator Ed Johnson in a letter of September 25, 1945:[2]

> There [illegible] are some indications that Echo Park reservoir may have opposition from various recreational interests that would oppose the project because it lies within the Dinosaur National Monument. At this time it is not possible to determine how great this opposition may be... If strong opposition does develop, it may necessitate additional studies with resulting delay for the report on the project.

It was true that most of the opposition would come from so-called "recreational interests;" but there proved to be other initial areas of opposition, too. The Carbon County Associated

Industries, for example, had the questionable honor, in early summer of 1946, "of being the first group in Utah to go on record as opposed to the construction of Echo Park dam and Central Utah Projects."[3] This organization, representing coal interests, was opposed to the power and reclamation projects because, in essence, they would be in competition with coal-produced power. Representatives of Price and Carbon County hastened to point out that the Associated Industries group had a restricted following and by no means represented the dominant opinion in that part of Utah. Which was undoubtedly true.

Strangely enough, the early stand of the National Park Service itself was neither very emphatic nor even very clear. There had been no developments within the enlarged Monument, and little publicity was available on the area even in Park Service files. Indeed, one N.P.S. representative in 1946 discouraged photographic coverage of the area by Ansel Adams because "...there is nothing there."[4] And the Service's Chief of Lands, Herbert Evison, noted at the same time that "We have, so far as I am aware, done virtually nothing to reveal the monument to the public, except in the limited area of the early monument [quarry area]."[5]

However, in a report of June 27, 1944, the National Park Service had stated a tentative position with respect to reclamation projects in the Monument. This statement had been issued under wartime conditions, as well as at a time when, as mentioned earlier, the Park Service had little appreciation of the scenic area involved; but it was to provide ammunition for the Bureau of Reclamation in later confrontations:[6]

> If and when it is shown that it would certainly be in the greater national interest to develop the water resources of the Canyon Unit than to retain the unit for national monument purposes and it then becomes evident that authorization for such development will be given, the status of the unit should be changed to that of a multiple-purpose area in which water-control for the generation of power would be the principal use.

During this period some with in the Park Service felt that dams and reservoirs might enhance the attractiveness of the Monument, while others feared that "its present scenic and scientific values and its wilderness character would be seriously altered."[7] But perhaps more important, there was no particular feeling among Park Service personnel that the dam projects, good or bad, represented impending issues. This impression was evident as late as 1949, when the Park Service replied to a National Parks Association query about the projects by urging the Association "not to worry, as it would be years before any authorization was to be asked for by the Bureau."[8] But about the same time the Director of N.P.S. Region 3 informed the Region 2 Director that it might be "extremely difficulty and ultimately impracticable to block the contemplated projects.... This may be somewhat prematurely facing harsh realities, as viewed from the Service angle, but it appears that very shortly we are going to be confronted with the necessity of giving these matters our most serious consideration."[9]

As 1949 proceeded, the National Park Service began facing up to the realization that the proposed reclamation projects might actually become a reality, if no opposition were forthcoming. Consequently, in April the Washington office belatedly notified field offices that the Park Service would oppose Echo

Park dam.[10] The Reclamation Bureau was already surveying locations within the Monument for power houses and other structures, and David Canfield, superintendent of Rocky Mountain National Park, who had jurisdiction over Dinosaur, urged that the Regional Office evince some delaying action.[11] By fall, the Park Service formally announced that the Monument's "preservation in its natural state represents its highest use."[12] Meetings were called for October and November in Washington and Salt Lake City, to bring representatives of the Bureau of Reclamation and National Park Service together to adjust the conflict. But evidently the Bureau had already committed itself. Thus, on November 4, 1949, Director Drury wrote Secretary of the Interior Krug, asking him to arbitrate the matter and suggest an alternative plan to dams within the Monument.[13] In a few days Krug was to resign, without making any decision on this matter, to be replaced in mid-November by Oscar Chapman.

Despite the fact that there had been talk of dams on the Green and Yampa for three decades at least, the issue was hardly a public one as yet. Indeed, few individuals nationally, including members of conservation groups, even knew about the situation. Drury, aware of this lack of communication, suggested to the new Secretary of the Interior in January of 1950 that "if the Department is to get a balanced response from the people of the country concerning these projects, we should be authorized to keep the national conservation organizations, and all others interested in national park conservation, informed at all times concerning reservoir projects...."[14]

Actually, there had been such an arrangement with former

Secretary Krug. In 1948 conservationists had raised objections to "Reclamation's ability to build up local pressure in favor of proposed projects and thus to secure an edge over other agencies and groups interested in the management of natural resources."[15] The following April 14 Krug penned a letter describing how conservation groups could keep abreast of resource development projects and could present their views to the Department of the Interior through the National Park Service and U. S. Fish and Wildlife Service.[16] Early during his tour of duty, Gray Chapman, at Drury's urging, promised to continue this policy of his predecessor.

By 1950 a few conservation organizations--especially the Wilderness Society, National Parks Association, Sierra Club, and the Izaak Walton League--had already exhibited some stirring of concern over the situation in Dinosaur National Monument. To the Bureau of Reclamation's surprise, and indeed to the nation's surprise, this was just a beginning. And conservationists' views were to go not only to the National Park Service and Bureau of Reclamation but, more important, to members of Congress.

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** It is interesting to note that it was Reclamation's Straus who called the 1944 N.P.S. declaration to the attention of the Secretary of the Interior in late 1949.

ECONOMIC GEOLOGY AND THE MONUMENT AREA

Earl Douglas always dreamed and often spoke of the bountiful geological resources of the Uintah Basin. And even before Douglas's time, John Wesley Powell in 1876 predicted mineral resources for the region, specifically a copper and silver area in the northern part of Brown's Park.[1] Fortunately for the later establishment of the Monument, however, there was really little of economic geological importance in the eastern tag-end of the Uintah Mountains. The few attempts at prospecting simply make interesting but insifnigicant historical reading, involving, beyond oil, minor quests for gold, copper, silver, zinc, iron, phosphate and coal.

Gold prospecting in the main took the form of placering. Source of the gold was unknown, but Brown's Park Pre-Cambrian Rocks of the Red Creek quartzite (the same rock formation, interestingly enough, in which Powell had forecast a "copper and silver area") and the Uinta Mountain group were suspected,[2] as well as the base of a copper-producing sandstone.[3] Indeed, some prospecting was actually done in gravels in Brown's Park northwest of the present Monument, but with little production. Most of the serious placering took place along the Green River from above Split Mountain south to Horseshoe Bend beyond Jensen.

In mid-March of 1913 a chap named Bernard Stewart (or possibly Newton Stewart) and some companions were about to form a gold dredging company for operations at the Lucky Boy claim near the mouth of Split Mountain gorge.[4] When a U. S. Geological Survey party proceeded down the Green River past this point in mid-1922

(about August 8), abandoned machinery and mechanical devices were seen at two or three places along the banks, marking the site of old placer operations, perhaps Stewart's. "At one place a huge dredge was installed and several buildings were erected, but reports indicated that the dredge was never put into operation. Everything is now in a dilapidated condition, and the ~~dead~~ site is a dismal reminder of an expensive venture."[5] During this particular decade around Jensen there was both dredging and sluicing for fine gold in the river gravels; and gold was also reputed to be in the gravel meaas above the Green River. However, successful recovery was limited.[6]

In 1923 when there was talk of developing an electric power plant at Split Mountain gorge, one of the talking points involved the increased availability of "power for the development of the fine placer gold in the rich sands of the Green river."[7] The richness of the sands was questionable by this time; but in 1928 an "$8,000,000 gold deposit" was reported at Horseshoe Bend.[8] The Gravity Gold Mine Company of Los Angeles under T. A. Homewood of Denver was beginning to erect placer mining machinery so that extraction work could begin on July 1 of that year.

During this same period a William Bascom of Vernal was doing some gold prospecting in Harding's Hole near Meeker Cave on the Yampa River, living in a cabin which he deserted in 1932. A group of river boatmen who visited the cabin in 1937 found a receipt made out to Bascom for three ounces of gold at $35 an ounce.[9]

In the spring of 1933 there again was placering activity

near Split Mountain east of the dinosaur quarry. Harry Hicks Brown and several associates from Denver and Los Angeles planned to begin work on their gold claims in early April.[10] Gold operations were still going on in the area in 1935, and a crew of men were engaged in drilling test holes in the bed of Green River from Beaiser Bend to Split Mountain to test the sands.[11] The state was issuing placer leases for river gold, and a California company was planning to employ a flotation process to handle the "flour gold."[12] Two San Francisco men and a Vernal man (A. H. Dakin) were later granted leases for extensive acreage along the Green River in Uintah County, to begin mining not later than November 1, 1936.

Through the some twenty-five years of gold placering operations in the vicinity of the Monument, the Green River terraces south of Dinosaur had been pock-marked with prospect homes sunk to test the gold content of the gravels, and gold dredges had operated on the river both above and below Split Mountain. But in the final analysis, there had been little financial return.[13]

Since before the turn of the century there had been some copper prospecting in the Dinosaur area. Most of the copper was represented by such carbonates as malachite and azurite, with the addition of minor minerals, from clastic beds between the Morgan formation and underlying Mississippian deposits.[14] One of the earliest sites was at the mouth of Sage Creek where it entered the Green River in Whirlpool Canyon. Copper was discovered here about 1896, and in 1899 the five tons

of concentrate, hand-cobbed and shipped to Park City, yielded about 50% copper per ton. The ore was copper carbonate and chalcocite, replacing plant and animal remains in an eight-foot-thick sandstone layer above two seams of coal. There was also some copper in carbonaceous shale below the sandstone.[15] When Woolley's U.S.G.S. survey party came by in mid-1922, "prospector's tods, the remains of an old camp, and several prospect holes in the hillside a short distance down the canyon were noticed."[16]

In 1901 Milton Lyons was prospecting a copper claim at Split Mountain which showed improvement "with every foot of work." Lyons expressed "great faith" in the mining district to the editor of the Vernal Express.[16a] There was another small copper mine northwest of Douglas Mountain, located a short distance outside the present Monument boundary. The pocket, however, was quickly worked out and the Douglas Mountain copper mine was abandoned.[17] Also, near the west end of Brown's Park there were some outcroppings of copper which were worked on a prospect basis.[18] Copper ore had been extracted and put on the mine dumps; but apparently no ore shipments were ever made.[19]

Such low-grade iron as occurred in the Monument area was mainly in the form of limonite and hematite, and prospecting was limited. The name "Iron Mine Basin" applied to the country between Douglas Mountain and the Yampa River suggests that some of the "gopher holes" here may have been for iron.[20] There were also some iron outcroppings in the Pre-Cambrian Red Creek quartzite near the west end of Brown's Park which

were abortively worked.[21]

Small quantities of silver and zinc were only incidentally discovered. At the Sage Creek gold mine in 1899 silver ran about 69 ounces per ton for the five tons of concentrate removed.[22] In the spring of 1953 there was some revived interest in the old Mantle zinc prospect along the north rim of Tank's Peak overlooking the Yampa River. Some of this prospect property actually extended into the Monument, in Mississippian limestones and the contact with the Cambrian Lodore formation. But as geologist G. E. Untermann Noted, "Surface showings give little reason for optimism. Diamond drilling may reveal values which would justify further development, a promise which has not been apparent for the last half century."[23]

There were some coal veins in the lower part of the Mancos shale running west from the Dinosaur quarry area towards Brush Creek, and indeed on Brush Creek several miles outside of the Monument there was at one time an operational coal mine.[24] In fact, on July 17, 1910, there was a coal land withdrawal in the general area where the dinosaur quarry later developed.[25] Southeast of the present Monument about four miles south of Lily Park there was a coal mine near the Dakota sandstone;[26] and there were coal seams near Sage Creek.[27] However, there apparently was no commercial prospecting for coal within the Monument area.

The major mineral withdrawal involving the Monument area was the Phosphate Withdrawal No. 24, Utah No. 3, including parts of T18-26E, R2-4S, by executive order of May 11, 1915.

This withdrawal resulted from a reconnaissance during the summer of 1914 by A. R. Schultz of the U. S. Geological Survey.[28] In reality, within the Monument area on the flanks of Split Mountain there were only a few very thin beds of low-grade phosphate rock, which were never exploited.

When Woodrow Wilson issued the original Monument proclamation on October 4, 1915, it was noted that "the creation of this monument will prevent the use of the lands for the purposes for which said withdrawals were made.[29] In 1931, when the Split Mountain area was added to the Monument, note was again made of the phosphate withdrawal (which here included the NW 1/4 SW 1/4 of Section 26.[30]

Earl Douglas, of course, had been most interested in the oil resources of the Uintah Basin; and eventually there was successful oil drilling outside of the Monument to the south and west. In mid-June of 1923 a party of geologists, searching for soil and asphaltum deposits, came down the Yampa River and stopped at Pat's Hole.[31] But they were mere transients. Within the boundary there appears to have been no soil exploration.

Perhaps the wildest potential prospecting which the Dinosaur region ever experienced was, of all things, for precious stones.[32] In February of 1872 two grizzled "miners" were spreading the story, in various San Francisco saloons, of a fabulous gem mine somewhere in the western wasteland. And they had a bag containing several hundred uncut diamonds and a number of rubies, sapphires, garnets, and emeralds to back up their tale. Shortly a corporation of influential men was

formed called "The San Francisco and New York Mining and Commercial Company" to exploit this great find; and two qualified geologists, Clarence King and James Gardner, were procured to examine the mine which was now being valued at $1,500,000.

The so-called miners by this time had bowed out of the venture, taking $300,000 apiece for their share in the mine. They left behind only a vague idea of where the mine was located, despite the fact that some of the people concerned, including a geologist Henry Janin, had once been taken to the area, though blindfolded. When pressed for location details, the miners had suggested that the gem mine was in Arizona.

King and Gardner, after ingenious scientific detective work, concluded that the gem mountain was actually in north-eastern Utah, and on November 2, 1872, eventually reached the site, now known as Diamond Mountain which lies northwest of the present Dinosaur Monument. At first, nothing of value was found, until an old German prospector with the two geologists indeed did come across a scattering of gems. The next morning the prospector made an exciting find, announcing it by shouting "Look, Mr. King. This diamond field not only produces diamonds but cuts them also!"

Sure enough, the German had found a diamond showing a cut face; and this spelled the beginning of the end for one of the country's grestest gem frauds. A further survey of Diamond Mountain indicated that it had been "salted" with

precious stones by the two wily "miners." King and Gardner, having carried out a geological survey of the region prior to the diamond find, had been convinced that the geological formations here were not gem-bearing ones. And they proved to be correct, much to the chagrin of many other more gullible individuals.

In a sense the diamond fraud typifies the entire story of the economic geology resources of Dinosaur National Monument. Mineral-wise the area was relatively barren, a fact discouraging to exploiters but of comfort to conservationists. In a sense this fact insured that the canyon country of Dinosaur would remain a relatively untouched wilderness worthy of eventual preservation unimpaired.

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