

Through the Black Canyon

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BLACK CANYON OF THE GUNNISON NATIONAL MONUMENT

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Through the Black Canyon

text by
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Through the
Black Canyon

Cover: The Narrows, looking downstream
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J. E. 1978

Introduction

Intelligent curiosity is a basic element of humanity leading man to cross the seas, climb the highest mountains, explore the ocean depths and fly to the moon. Besides the satisfaction these exploits give the participants, they provide society with useful information about our environment whether the explored area be the universe or something closer home. Because these journeys seek the unknown and unusual they are exciting and if recorded make for interesting reading.

In July, 1934, a group of men from the small western Colorado town of Montrose participated in an adventurous trip that combined hardship, excitement, challenge, and scientific study. They did not have to go to a remote corner of the earth for their once-in-a-lifetime adventure, but only about twenty miles from home for their week-long journey into the unknown.

The site of their exploration was the Black Canyon of the Gunnison, an awesome gorge a half mile deep whose nearly verticle walls leave its depths swathed in perpetual shadow. The canyon had been known from the earliest days of the Spanish explorers in the eighteenth century. Captain John Gunnison, whose name was given to the snow-fed, tumultuous river which flows through the canyon, reported its presence on his 1853 trip through the region, though he prudently avoided going through the canyon itself.

The earliest effort to traverse, explore, and survey the Black Canyon was made in the winter of 1883 by Byron H. Bryant, who had been commissioned by the Denver and Rio Grande Railroad to survey the canyon from the end of the newly-constructed railroad near Cimarron to Delta. Bryant explored the possibility of extending the railroad through this section of the canyon rather than the route ultimately chosen over Cerro Summit to Montrose.

The next attempt to explore the Black Canyon came in the late summer of 1900 when five Montrose and Delta men sought to determine the feasibility of diverting the waters of the Gunnison River through a proposed tunnel for the irrigation of farm land in the Uncompahgre Valley. William W. Torrence, John E. Pelton, M. F. Hovey of Montrose and J. A. Curtis, E. B. Anderson of Delta, equipped with two wooden boats, spent

nearly a month in the canyon, but gave up the trip after covering about fifteen miles of the river below Cimarron.

The following year during August, A. L. Fellows, an engineer with the U. S. Reclamation Service, accompanied by Torrence of the earlier expedition, traversed the Black Canyon. The information obtained through these early explorations heightened the interest in and hastened formulation of plans for the construction of the present Gunnison Tunnel.

In 1901 the Chief Hydrographer of the United States Geological Survey, F. H. Newell, recognizing the spectacular nature of the canyon, urged the citizens of Montrose, the closest town, to promote tourism in the area. No serious move in this direction was made until the late 1920's, however, when the Montrose Lions Club became interested in developing an automobile access road to the rim of the canyon.

Among the leaders in the project was my father, Mark T. Warner, pastor of the Montrose United Presbyterian Church. For him this began a life-long attachment to the great canyon and its mysteries. The local Lions Club committee made the first rough survey of the road and did the initial construction. Their efforts were supplemented by the county, which completed a dirt road to the rim. This first crude road was dedicated on September 1, 1930, ushering in the era of the Black Canyon of the Gunnison as one of the nation's popular tourist attractions.

About the same time the road was being built, a movement was initiated by the news editor of the *Montrose Daily Press*, Warren Wilcox, my father, and others in the Lions Club to have the Black Canyon designated a National Monument. The National Park Service investigated the site and enthusiastically recommended affirmative action. After the resolution of problems relating to the legal technicalities involved in carrying out the Park Service recommendation, President Herbert Hoover in one of his last acts as president proclaimed the Black Canyon of the Gunnison a National Monument on March 2, 1933.

In July, 1934, the United States Geological Survey sent a party into the canyon to examine in detail the largely uncharted lower depths and to obtain data for the production of a topographic map of the new National Monument. Because they had long been interested in the development of the canyon and were experienced outdoorsmen and mountain climbers, my father and Dexter B. Walker, a photographer from Montrose, were included in the six-man party. My father kept a daily

journal, which provides an accurate account of the trip. Soon after the expedition was finished, he used his notes as a basis for a story which was published on October 1, 1934, in the *Montrose Daily Press*. In July, 1963, a small portion of the narrative was published in the *Colorado Magazine*.

Dexter Walker kept a photographic journal of the trip. A highly skilled photographer with a sensitive eye for detail and for the dramatic, he recorded the journey of the survey party through the canyon. This 1934 narrative and the photographic record, published together here for the first time, furnish a unique first hand adventure story and provide a guide for the contemporary visitor to the Black Canyon. The only substantial changes made in the original account are the extensive footnotes and a revised conclusion. For the present-day canyon visitor the notes are particularly useful, for they describe all the significant points of interest and indicate name changes of prominent points that have been made since the story was written in 1934.

Both of the participants in this account are still living. With more than a half century each of residency on the Western Slope of Colorado, they have seen much of the history of this colorful, mountainous, and beautiful region.

Dexter Walker is a Colorado native. He was born near Castle Rock on March 18, 1891. He graduated from Colorado State College at Greeley in 1921. For several years he served as a science teacher and school administrator before entering the photography business in 1924. He eventually owned studios in Paonia, Delta, and Telluride in addition to Montrose. He also was district state water commissioner and played active roles in local archeological, mineralogical, and historical societies. Now retired, he lives in Montrose and continues to pursue his life long interests.

Mark T. Warner was born in Monroe, Ohio, on February 10, 1889. He attended Muskingum College and was graduated from Antioch College and the Xenia (United Presbyterian) Theological Seminary in 1918. His first and only pastorate was the United Presbyterian Church in Montrose. He stayed with this same congregation until his retirement from the active ministry in 1957, with the exception of the period of 1940-1946 when he was Chaplain (Colonel) in the United States Army. He served in this country and in the Solomon Islands of the Southwest Pacific during World War II. In 1942 Muskingum College awarded him an honorary Doctor of Divinity degree. An

outdoorsman, conservationist, and civic leader, his interest in the Black Canyon was a natural one. The highest point on the south rim of the Monument, clearly visible from Main Street in Montrose, is named Warner Point in recognition of his efforts in securing this spectacular bit of unspoiled scenery for future generations.

This account written thirty eight years ago with its extensive footnotes and splendid photographs is a useful guide to the Black Canyon of the Gunnison and is a unique historical document of the adventures of two men from Montrose, Dexter B. Walker and Mark T. Warner.

Robert M. Warner
Director, Michigan Historical Collections
Professor of History
The University of Michigan
Ann Arbor, Michigan

January, 1972

Through the Black Canyon

The Black Canyon of the Gunnison has always held a strange fascination for those who have had the privilege of peering into its abysmal depths with the eye following the course of the roaring Gunnison River as it tumbles and foams and dashes its way over and among great boulders strewn along the narrow river bed at the base of the precipitous canyon walls. But this fascination and the thrill of the Black Canyon is greatly intensified for those who have been privileged to traverse the rough river bed and view the rugged canyon walls from below. Viewed from the bottom there are hundreds of pinnacles, towers and other peculiar rock formations projecting into the sky which cannot be distinguished at all from either canyon rim because they blend into the colored granite walls. One will never have seen the Black Canyon of the Gunnison in its more majestic and thrilling aspects until he sees it from the bottom, and the plans for developing the national monument for the benefit of the park visitor will never be complete until a satisfactory trail or other means of access to the bottom of the canyon has been completed.

The occasion for the trip through the Black Canyon which will be described in this article was to survey that portion of the canyon lying within the bounds of the newly created Black Canyon of the Gunnison National Monument established by proclamation of President Herbert Hoover on March 2, 1933. In the summer of 1934 Mr. Robert O. Davis, topographer of the U. S. Geological Survey, was sent to Montrose for the purpose of making a detailed survey for a topographic map of the national monument area for the U. S. National Park Service. Other crews of the Geological Survey had been at work in the monument earlier in the summer, running levels and establishing triangulation points preliminary to the actual topographic survey of the monument by Mr. Davis.

Up to the time of this official survey very little accurate information was available concerning the canyon in regard to depth, width and other pertinent facts necessary for the proper appreciation of this stupendous gorge. A survey authorized by the Denver and Rio Grande Railroad and made by Byron H. Bryant and party during the winter of 1882-83 furnished much



Warner looking for an "easy" place to cross.

interesting information relative to the Black Canyon as did also the exploring party of A. L. Fellows, and W. W. Torrence who traversed the river bed of the canyon in the summer of 1901 in the interest of the Gunnison Irrigation Tunnel that was currently being proposed. This information, while very interesting and valuable because it represents the difficult pioneering work along this line, will now be supplemented by the large volume of accurate data obtained by Mr. Davis in his recent survey. This data will prove invaluable to the national monument visitor since it will now be possible to know the actual depth and width of the canyon at all the more interesting points along its course.

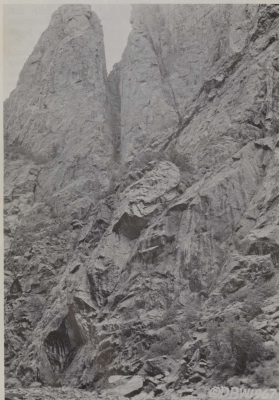
The purpose of the survey through the canyon was to locate or map the river bed in both vertical and horizontal position, showing the plan of the river and illustrating its gradient by means of a level line giving the elevation above sea

level of the river bed along its entire course. With facts relative to the elevation of the canyon rim having been obtained through an accurate survey, by comparing the rim data with that obtained by survey of the river bed it is possible to determine the depth, width and slope of the canyon walls at any point. This interesting information may all be obtained from the excellent topographic map which will be made of the national monument. Since our trip through the Black Canyon a few weeks ago, Mr. Davis has done sufficient work on the canyon survey to be able to compile data relative to the physical features of the canyon and these facts and figures have been gladly furnished me for use in this story. In giving this information to the public, however, before the publication of the map, it should be kept in mind that all elevations and other figures and data are to be regarded as preliminary and therefore subject to adjustment.

Soon after the arrival of Mr. Davis in Montrose he came to visit me telling of his mission and the work he had come to do in connection with mapping the Black Canyon of the Gunnison National Monument. He and Mrs. Davis had come here from the Carlsbad Caverns National Park, where he had been engaged in similar work. Of course I am always glad to furnish information to anyone interested in our national monument, especially if interested in the development of the park, and so after a reconnaissance trip to the monument to look over roads, triangulation points, and other matters of interest, Mr. Davis began his work.¹

In a few days we met together again to make plans for the proposed exploration and survey of the canyon. Mr. D. B. Walker, photographer of the Walker Art Studio, and I had talked at various times of making a trip through the canyon, but no definite plans had been made, so when invited by Mr. Davis to

¹The author's interest in the Black Canyon dates from the first reconnaissance trip to the south rim in the summer of 1928 as a member of a Montrose Lions Club committee consisting of Harry Ireland, Montrose County Agent, L. J. Foster, Superintendent of the Uncompahgre Reclamation Project, and the author. The purpose of the committee's visit to the canyon was to evaluate for the club the scenic values of the canyon and recommend whether or not it would be of sufficient interest to justify the club's undertaking the construction of a passable road to the South Canyon rim. After the visit the committee enthusiastically praised the canyon and advocated the road construction project. Thus the task of making the canyon available to the public was begun.



This tower in the process of formation is an example of erosion in the canyon.

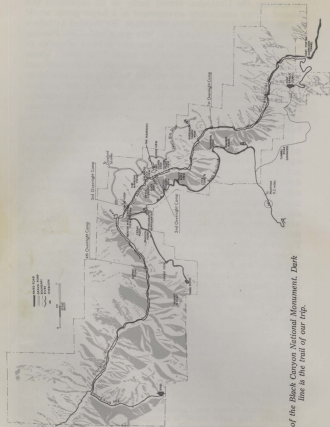
accompany the Geological Survey party on its expedition this seemed a very satisfactory arrangement as a larger group would in many ways prove to be an advantage. We decided to take a "general service man" along with the party and Glen Fleming was chosen for this position.² It was also deemed advisable to employ two other men whom we called "top men" whose mission it would be to help transport our equipment and provisions into and out of the canyon, to bring extra provisions down to us from the south rim, and to follow our progress through the canyon from day to day. The two Kane brothers, Harry and Charles, were selected for this work.³ In addition to those already named, the party consisted of the two rodmen, Palmer Bowen and Robert Eykyn.

In making our plans for the trip we consulted all available information to ascertain just what we might be expected to encounter by way of danger and hardship, and what equipment and provisions would best serve our needs. Many fascinating stories have been told and written concerning the experiences of men who ventured to match their courage and endurance with the treacherous waters of the Gunnison, but we were not alarmed at these stories. We knew that when their explorations were carried on all the water of the river was flowing entirely through the narrow Black Canyon as there was no Gunnison Tunnel to divert any of the water. In our case we did not expect to have to contend with a great deal of water as much of the water was being diverted through the tunnel for irrigation purposes in the Uncompahgre Valley.⁴ Still it was a problem to decide just what to take to be sure that we had all that we actually needed and yet not be encumbered with unnecessary luggage. So we made our selection largely through the process of elimination.

²Fleming was a local boy home from theological seminary for the summer vacation. He was an outdoorsman, acquainted with the mountains, and proved a capable assistant on the expedition.

³The Kane brothers were also local young college men, well acquainted with the mountain country. They made three descents into the canyon during the five days we were travelling through.

⁴The Gunnison Tunnel was constructed by the U. S. Reclamation Service 1905-1909. This water tunnel is approximately six miles long and large enough for passenger automobiles and smaller trucks to drive through, which can be done during winter months when the water is turned out.



Map of the Black Canyon National Monument. Dark line is the trail of our trip.

We agreed among ourselves that no one would take a shaving outfit, feeling that whiskers could be more easily carried on our faces than shaving equipment in our packs. Anyway we were not much concerned about personal appearance as we did not anticipate meeting anyone in the canyon to check up on us, and we did not meet with a single human being during the five days that we were in the canyon except our top men and two fishermen whom we encountered the second day. Each of us carried an army pack containing provisions, face towel, toothbrush, extra socks, mess kit with knife, fork and spoon, a shelter tent half, army blanket, jumper jacket and a few other small articles. The pack as made up would average perhaps thirty to thirty five pounds in weight. In addition to our packs we each carried miscellaneous articles such as cooking utensils, fishing tackle (which had been better left at home), first aid kits, hand axes, wire and nails for making rafts, white and red cloth for making flags to be put up in the bottom of the canyon in connection with the survey, Kodaks, flashlights and a few other necessary articles. Davis carried his surveying instruments consisting of alidade and plane table, Bowen and Eykyn their rods for taking elevation readings. Walker carried his heavy Kodak and three of us carried a fifty foot coil of rope each to be used for life lines if necessary and to aid in climbing over gigantic boulders frequently encountered in our river crossings.

Our food, while not consisting of a very large variety, proved to be quite substantial in more ways than one. For instance we had our bread for the entire trip baked after a recipe which seemed to have originated in the mind of Bowen. I think it contained rye, whole wheat and white flour, did not contain yeast, and each loaf weighed about two pounds. Bowen had told us that this bread would be very firm, that you could not crush it or damage it in any way—and he was exactly right. Strapping it tightly in an army pack did not injure it, nor did contact with the gigantic granite boulders of the Black Canyon. It tasted mighty good, however, and proved quite serviceable, enduring throughout the entire trip. We took along with us such staple camp foods as bacon, ham, dried fruit and condensed milk. In addition to these necessities we were supplied with grape-nuts, lunch meats, chocolate bars and oranges. Most of us preferred tea to coffee, so we drank tea with our morning and evening meals and gallons of Gunnison River water the rest of the time. Among the lunch meats was salami, which has

remarkable powers of holding up well under most adverse conditions. Somehow it never did prove popular with our party except with Davis and myself, I being the only genuine convert to its use.

First Day

All plans having been completed for our trip through the canyon, we left Montrose on Monday morning, July 16, 1934, driving over the old government road to what was known in the tunnel construction days as the Milk Ranch.⁵ Here we put on our packs and other equipment, posed for our first official picture, then started our descent into the canyon. After a brisk thirty minute walk we arrived at the East Portal of the Gunnison Tunnel at 8:40 a.m. Here we rested a few minutes and visited with the genial Mr. Tupper who looks after the River Portal of the tunnel. Davis began his survey of the river bed at this point, tying in with the elevation established by a previous geological survey party. It is interesting to note that at the East Portal of the Gunnison Tunnel the river bed is some 715 feet higher in elevation than the city of Montrose and below Red Rock Canyon at the western boundary of the national monument the elevation of the Gunnison River bed is approximately 435 feet lower than the city, indicating a drop of about 1100 feet in the 12 miles of the river within the monument boundaries.

Leaving our top men, Charles and Harry Kane, at the East Portal, the remaining six members of the party began the five day journey down through the Black Canyon, anticipating some hardships and plenty of thrills, and we were not at all disappointed in either regard. The river bed in this section of the canyon is comparatively flat and smooth and when I use the word "smooth" I mean that it is covered with small boulders rather than large ones such as we encountered a little farther down the canyon. The stream bed in this area averages 150 to 200 feet in width with extreme width in places averaging 250 feet. This average continues generally to the point on the south

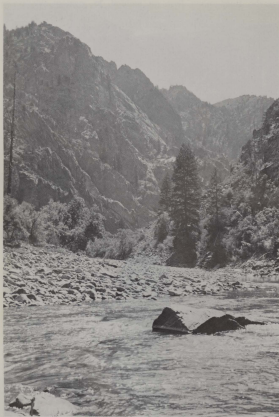
⁵The name Milk Ranch was applied to a small, fairly smooth grassy land bench part way down the government wagon road extending to the construction camp at the River Portal of the Gunnison Tunnel. In this area a pole corral was built in which were kept a few cows to provide fresh milk for the men at the work camp in the canyon.



The party at Milk Ranch from left: Palmer Bowen, rodman; Charles Kane, top man; Harry Kane, top man; Glen Fleming, utility man; R. O. Davis, topographer; Robert Eykhyn, rodman; Mark T. Warner, recorder; D. B. Walker, photographer.



Gunnison River dam at East Portal. Intake of the 6-mile long Gunnison Tunnel (not shown) is to the right above the dam. The tunnel diverts water from the river to irrigate the Uncompahgre Valley.



Wider segment of the river bed, 150 to 200 feet wide, looking upstream.

rim known as Pulpit Rock. The width of the canyon from rim to rim through this area averages 3000 feet and the depth ranges from 1800 feet at East Portal to 1920 feet at a rock point some two miles below East Portal. The canyon walls through this section are rather sloping but quite rugged with rock ridges and pinnacles showing prominently. The gentler slopes are covered with shrubs of various kinds with tall evergreens well scattered throughout the area. The box elder is the prevalent tree of the canyon bottom, growing on the small benches and sandy places along the river bed. A species of cottonwood is also quite common.

Following the left side of the river from East Portal the going was comparatively easy for the first half mile or until we encountered a smooth rock wall some 50 feet high with a great pool of deep water at the base of it. Here we made the decision that wherever possible it would save time and be more satisfactory in every way to cross the river above such pools than to transport our clothes and luggage across the pools. So we waded the river at this point, not stopping to remove clothing or shoes, and found the water about knee deep. Following along the right side of the river for another half mile, we encountered a smooth, perpendicular wall about 100 feet high, again with a large deep pool at its base. It is impossible to climb over these projecting walls, and one must either swim the pool or cross the river above. We crossed the river to the left by wading, the water being a little more than knee deep.

The canyon walls begin to close in at this point; they are smoother and largely bare of trees and shrubs. We found the bed of the river at this point quite narrow and covered with huge black boulders worn smooth by the action of the water. They extend for many miles through the canyon and vary in size from a foot or two in diameter to the size of a small house. We found the travelling very difficult for a couple of hundred yards and the heat from the sun intense. I kept a drinking cup hanging on my waist belt all the time and from this cup we drank gallons of water as we worked our weary way through the canyon. Because of the great heat experienced during the daytime one requires great quantities of water, and if the river water were not available all along, the hardships of the trip would have been greatly increased.

While stopping to rest for a few minutes under a box elder tree, Davis in looking up at the south rim of the canyon



Davis working, Warner resting, Bowen (rodman) catching up. Note the stream bed boulders worn smooth.



Left of center is Fleming picking his way above the river.



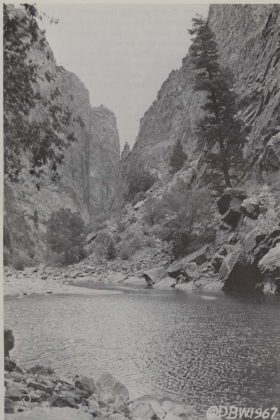
Our first day swimming hole, and after a swim, lunch. Right of center is Warner crossing a sandbar.

discovered a large bird flying among the crags. We all watched this bird as it soared among the pinnacles and finally alighted on a rock point. The bird proved to be a mature golden eagle, which probably had a nest in that locality.

A little farther down the river we discovered a small spring coming out from the base of the canyon wall, the water from which was very clear and cold. At noon we stopped for lunch beside a large deep pool of water just off a great sandbar. Before eating our lunch we enjoyed a wonderful swim for about thirty minutes or more. A couple of us paid dearly for this first day's swim, for we acquired badly sunburned shoulders which made our heavy packs for the next couple of days quite painful to carry. The swim proved so delightful and refreshing, however, that on each succeeding day our stopping place for noon lunch was always determined by a good swimming hole.

Starting down the river after lunch we soon encountered on the left side a rugged wall about 100 feet high with a deep pool at the base. In this case we could take our choice of either scaling the wall or wading the river. Three of us climbed over the wall while the others crossed the river, only to find about 200 yards lower down that they had to cross the river again to our side. Walker took some very fine pictures in this section of the canyon. At station 1.8 we noted two small springs at the base of the canyon wall on the south side, both of which flowed excellent cold drinking water. (The station figures given in this article represent mileage distances from our starting point at East Portal.) In this section of the canyon we found the channel filled with massive boulders and the river almost disappearing among them. At station 3 we crossed the river to the right, Walker and I wading across the swift current considerably above our knees while the others crossed by jumping from one smooth rock to another. This type of rock crossing was always treacherous as with heavy packs and hands occupied with luggage, one could easily lose balance or slip off a rock or worse still, underestimating the distance between rocks, land in the midst of a deep hole or swift rapids usually found between the rocks.

But fortunately no accident of this kind ever occurred. At station 3.2 we came upon a good sandbar and stopped, presumably for the night. But while we sat resting, watching Eykyn and Fleming swim, Davis and I reached the conclusion that if we would go down the river to the next turn we could see Pulpit



Rock tower and balanced rock, center, are 2.3 miles below East Portal. Note the deep pool in the foreground.

Rock on the south rim. So we decided to move on down, somehow feeling that we could sleep better that first night if we were in sight of some point which we could recognize. We were not disappointed in our expectations, for we could easily see Pulpit Rock and Spruce Tree Point farther down the canyon. In order to ascertain our location in the canyon relative to the rim and to check our progress from day to day we had previously placed four black flags at vantage points along the canyon rim which could be seen from the bottom, the first having been placed on Pulpit Rock. We used black cloth for these canyon rim flags, thinking it could more easily be seen looking upward against a white cloud or light blue sky. Coming upon a good sandbar at 5:45 p.m. we stopped for the night, having made three and a half miles the first day.

We learned during the experiences of that first day that there were three things essential for our personal comfort and were guided accordingly by these during the remainder of the trip. We found that we must have plenty of drinking water



Downstream, a short distance from the last picture, is the same balanced rock; but note the large boulders and driftwood. This type of topography of river bed continues to the area of Painted Wall.

Giant black boulders are in the river bed, with water flowing among them, almost disappearing.



throughout the day, which was always obtainable from the river. We must also have a good swimming hole at noon to refreshen us after a hard morning of rock climbing, and at night the chief requisite was a sandbar large enough for sleeping quarters for all of us. These were rather scarce through a large portion of the canyon, especially through that section from Pulpit Rock to High Point, about a mile below the Bridge Site.⁶

It was not long after we had stopped for the night until a camp fire was burning on the sand and the air filled with the delightful aroma of bacon and fried potatoes and onions. Davis and Walker were the chief cooks and they were quite proficient in camp culinary art. Ordinarily I do a great deal of this sort of work in camp, but on this trip I was charged with the responsibility of providing trout each day for the camp menu. However, I would have accomplished more as a cook, for as a trout fisherman I proved almost a total failure, catching just one trout throughout the canyon trip. The others who fished met with the same results. We had nothing by way of bait or lure in which the trout were interested.

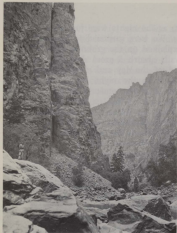
After the evening meal we sat around our camp fire until the embers had died out, then retired to our beds on our sand mattress to await sleep, which was never long in coming after a day of hard work climbing over granite boulders of all sizes. A "sandbar mattress" can be made most comfortable. It can be adjusted to conform perfectly to the particular size and shape of any individual. If you want a pillow of any certain proportion, all that is necessary is to heap up the sand under the head of your blanket to the desired dimensions. If you awaken in the night with a cramp in any part of the body, you only need to reach under the blanket and either pile up the sand or take it away until the affected spot on the body is made comfortable. For bedding we took nothing with us but a thin army shelter tent half to spread on the sand, over which we placed our single army blanket, half of which was under us and the other half

over us. This proved sufficient, as the nights were just delightfully warm even until morning. We were surprised to find this true and it can possibly be explained on the grounds that the sand and rocks and canyon walls absorb a great deal of heat during the intensive heat period of the day and all during the night this heat is thrown off. Even the night breezes were delightfully warm and added greatly to our comfort. Davis and I discovered a few days ago while viewing the canyon from the north rim that this first night's camp can be seen at the farthest bend in the river looking upstream from Pulpit Rock.

I have slept out in the open beneath the stars upon many occasions and in many places, but never in a more elaborately ornamented bedroom than this with the spires, pinnacles and towers of the canyon rim almost completely surrounding us, and it was a rare privilege we enjoyed of lying on our sandbar bed and watching the morning sun illuminate these various points as it slowly flooded the canyon with its descending rays. And this was an experience that we enjoyed every morning—an experience that one cannot have except in the depths of a rugged gorge like the Black Canyon.

During the travels of the first day, Bowen, Fleming and I had worn some very painful blisters on our feet and these had to be taped with adhesive each morning upon rising. Very fine sand would get into our shoes during the day and this, together with water-soaked shoes much of the time, greatly irritated our blistered feet. The sand would even work under the adhesive and when it did the adhesive acted then about like very fine sandpaper. Our greatest suffering was caused by sunburned shoulders and blistered feet. Bowen and Fleming each developed some sort of stomach trouble the second day, which made travel very difficult and slow for them that day. However they stayed with it nobly and experienced no trouble after that.

⁶Bridge Site is the name that in the early days of the development of the monument was applied to the segment of the canyon now known as Chasm View. People locally felt that this would be the logical place to construct the world's highest bridge spanning a deep gorge. With the passing of time, however, we were convinced that a bridge was not desirable, as such a man-made structure would detract from the natural magnificence of the Black Canyon.



A granite rock pillar (note the fissure at top). We discovered two springs of very cold water in this area. Fleming is at left.

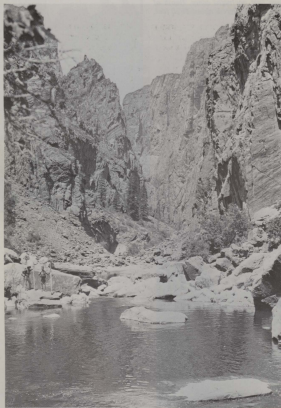
A small portion of pinnacles and rugged rock formations surrounding our first overnight camp. Depth of the canyon here is about 1820 feet.



Davis and Fleming, in center, 3.2 miles below East Portal. Note driftwood in river channel.



Pulpit Rock is the hump on the far distant south rim, center of the picture, as seen from our first overnight camp.



Our rodmen pause for a picture above a large pool (at left in photo). Bowen is on left, Eykyn on right. The river bed follows down the center of the photo at the base of the walls.

Second Day

We had previously arranged with the top men to appear on Pulpit Rock at or about 11:00 a.m. of the second day. In case we should pass before that time we were to put up a red and white flag at the base of a small group of pine trees along the river. This we did and moved on down the canyon. About the appointed time, Davis, looking up through his transit level, discovered the Kane boys standing against the railing at Pulpit Rock. The next thing was to attract their attention in some way. We made a white and red flag and waved that, but they did not seem to see it. Then we hit upon the plan of a signal fire as used for centuries by the American Indians. I hastily built a large fire of driftwood and upon this the others piled green branches and leaves from box elder trees. A huge column of white smoke immediately ascended and in a few moments Davis, watching the boys through his instrument, saw them wave their arms in answer to our signal. They understood then that they were to descend immediately into Black Canyon with an extra supply of provisions sufficient to last throughout the remainder of our trip. They descended through Echo Canyon⁷ on the south rim, just above Rock Point, about half way between Pulpit Rock and park headquarters at Lion Spring.⁸

Before discovering the top men, we had crossed the river on rocks to the left side. When directly under Pulpit Rock, Davis computed the depth of the canyon at this point and found it to be 1770 feet. From Pulpit Rock on for the next four miles the canyon was narrow, averaging approximately 100 feet, the walls rather smooth and straight and the bottom of the canyon filled with immense boulders. We encountered a large pool of deep water just below Pulpit Rock but we were able to get around this without crossing the river by the aid of a rope stretched along the wall. After the last man was over, the rope was given a flip and the loop detached from a pointed rock and

⁷Echo Canyon is the side canyon on the right which you follow as you walk out on Rock Point to the main canyon rim. It was so named because a very distinct voice echo can be heard along this side canyon wall. Through this canyon the hardy climber may descend to the river.

⁸This name in recognition of the Montrose Lions Club was given to the small spring just above the early monument headquarters and ranger station. It flows through a narrow side canyon to the river.



Using ropes at a difficult crossing are, from left, Fleming, Davis, and Warner.



Davis is at lower center, with Warner crossing the river on a log at his right.



Our second day's swimming pool with a large rock in center is at the base of Pulpit Rock and can be seen from there. Davis is at the lower right corner of the photo.



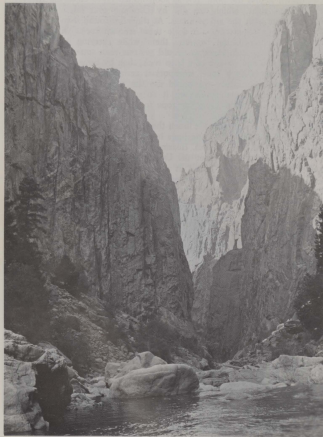
Large logs left by high water. Water was flowing between and under these huge boulders of this rock dam.

drawn across the pool. It was soon necessary to cross the river to the right, which we did by climbing over large smooth boulders with the aid of ropes. At times we found it to be very dangerous to attempt to scale these smooth rocks with swift deep water rushing between them while carrying our heavy packs, so in such cases we would get one man somehow across the rapids and on top of a large rock, then by tying each article of luggage with a rope, transport it across in that way. When necessary for safety we would use the rope for crossing such places, sometimes employing it to climb up a large smooth boulder and again using the rope to descend to a smaller rock lower in the river bed.

We did not stop for lunch the second day until about 1:00 p.m. Meanwhile the Kane boys had reached the bottom of the canyon with our supplies. Hearing us talking they decided to go up the canyon to meet us. Upon reaching the lower side of The Narrows they found it necessary to leave their clothes and swim through. We were enjoying our daily swim when they came upon us and after sharing with them our swim and our lunch and making further plans for the remainder of the trip we learned from them that at this narrow portion of the Black Canyon we would have to swim through and build a raft to transport our luggage. The boys then decided to go back to Echo Canyon to begin their long hard climb to the rim.

Proceeding down the canyon after lunch, about 3:15, we soon passed a good spring of water coming from the south canyon wall. A few yards farther down we found it necessary to cross the river to the right, which we accomplished by the boulder route. Here another spring was discovered coming from near the base of the north canyon wall. Growing on a little grassy bench in the vicinity of this spring were some of the most beautiful wild ferns and Oregon grape that I had ever seen, the latter taking the form of a shrub with branches three feet long. We found the same thing true of great patches of poison ivy which we encountered all through this section of the canyon growing on the little benches and brushy talus slopes just above the canyon bed at the base of the walls. The ivy we found was in the form of a shrub, three to four feet high rather than a vine, and we frequently found it necessary to walk and crawl through these shrubs, but fortunately none of us was affected by the ivy.

Late in the afternoon we found it necessary to cross the



Looking downstream from below Pulpit Rock.

river again on boulders to the left side, which would be the south side of the canyon a short distance above The Narrows. At this crossing we found some very interesting water-worn boulders. Cylindrical potholes have been worn into the very heart of these massive granite rocks by the action of the water, small stones, and sand over a long period of time. In one instance the hole was found to be about six feet in diameter and seven feet deep with an opening worn through the rock at the bottom. Davis and Bowen climbed into this pothole and Walker took a picture with the head of Bowen protruding from the lower opening and the head and arm of Davis showing at the top opening. This particular rock may be seen from the north rim of the canyon, while several others may be seen from the bridge site looking down stream.

We reached The Narrows about 5:00 p.m., having made only one and one half miles this day because of the difficulty of travel, which was intensified as a result of our sore feet and shoulders.⁹ Walker took some very excellent pictures in this section of the canyon, especially of The Narrows. We soon sized up the situation and found that the only possible way to get through The Narrows was to swim and make a raft on which to transport our luggage. Driftwood was rather scarce in this area, but we were able to find enough to build a satisfactory raft. We tied our three, fifty foot lengths of rope together and attached one end to the raft while a couple of us held the other end. The raft was loaded and the other men swam alongside and back of it, pushing it through the water close to the south wall, as the quiet water was along this side of the canyon. With the raft safely on the other side we found that we had used 140 feet of our rope. This hole was much longer and the current very swift along the north wall. With the rope the raft was pulled back up stream for a second and third load of luggage.

We finished transporting our luggage about 6:30 p.m. and finding a double-terraced sandbar in a cove along the south wall we decided to make camp for the night. Davis and Eykyn went down to the mouth of Echo Canyon to look after the provisions

⁹The Narrows is the focal point about half way through the monument area. Through a narrow forty foot opening between the precipitous canyon walls rushes the turbulent water of the Gunnison River. To travel up or down the river bed at this point you must go through the narrow gorge.

that the Kane boys had left and returned bringing with them a cake and copy of the *Denver Post* and *Montrose Daily Press* which Mrs. Davis and Mrs. Warner had sent down with our provisions. We greatly enjoyed our cake that evening and the next day. It was rather an interesting experience to sit around the campfire that second evening in the depths of the Black Canyon and read by the light of the flaming campfire headlines in the *Montrose Daily Press* the story of our going into the canyon the morning before. We very much enjoyed our night at this place. We felt that we were almost completely boxed in by the massive black walls and only a small portion of starlit sky visible above us. Davis was the last man to select his sand mattress for the night and found nothing left except a low spot on the edge of the lower terrace. He smoothed over the sand in this depression and a large rock on the lower side kept him and his bed in place during the night. This sandbar bedroom can be plainly seen from a point on the north canyon rim.

Third Day

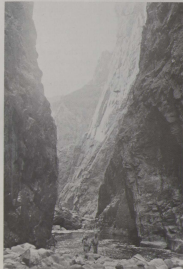
We were up early Wednesday morning and soon making preparations for what proved to be a hard day. After morning camp duties were all finished, one of the rodmen swam through The Narrows for a level reading. We had previously decided to measure the width of the canyon at this point, so Davis and Fleming, each holding the end of a string, swam to the narrow portion of the gorge, Davis taking the north wall with the current. When they reached their respective sides of the canyon, they tightened their string and holding their marks swam back to shore. Upon measuring the marked string we found the canyon at The Narrows to be just 40 feet wide. It is the narrowest place in the entire 52 miles of the Black Canyon from Sapinero to the mouth of its junction with North Fork, and through this narrow gorge the mighty Gunnison pours its turbulent waters. The canyon at this point is 1725 feet deep.

Every member of our party decided that this portion of the Black Canyon for about one and one half miles each way from The Narrows is by far the most fascinating and thrilling of any part, and observed from the bottom is much more magnificent and impressive than from the top.

Leaving The Narrows at 8:00 a.m. Wednesday morning, we proceeded down the canyon on the left side, making our



A giant pothole, with Davis looking out the top; Bowen peers out the bottom.



Looking downstream through The Narrows. The canyon here is 40 feet wide and 1725 feet deep. Men in the foreground are, from left, Bowen, Fleming, and Eykyn.



A rugged boulderfield in the river bed. The black boulders look like huge lumps of coal.



Fleming plans a dangerous log crossing with the aid of ropes.

way slowly over huge, smooth, black boulders which glistened in the light and looked like massive lumps of coal. Upon reaching Echo Canyon we picked up the supplies left by our top men. These added a great deal of extra weight to our packs, and the shoulders of some of us still being sore from sunburn and our feet getting more painful each day and being in the most rugged portion of the canyon, you can imagine perhaps something of our discomfort experienced in that day's travel.¹⁰

At Echo Canyon we had to cross the river to the right side, which we accomplished on large boulders. Along here we found many fresh rock fragments that had evidently been blasted from the road being constructed on the north rim. We were somewhat afraid of this blasting on account of rocks being thrown into the canyon, but fortunately none came over at any point while we were passing along underneath. About 200 yards below our first river crossing of the morning we found it necessary to cross again, this time to the left or south side. This crossing presented a problem. The narrowest channel between boulders was too wide to get a man across. We found a small log lodged among the rocks and this was floated down and so maneuvered as to lodge against the rocks at either side of the channel. One man

¹⁰Near the mouth of Echo Canyon we passed a large overhanging rock wall which made a sizeable cave. Above the high water line of the river we discovered a bench mark placed there by an earlier survey party and marked with the figures 63327 and about ten feet away we discovered another marked the same.



Looking downstream from Echo Canyon.



This clump of trees and shrubs are just above the water-line of the river, about 6 miles below East Portal.

ventured across on the log and reached the other side safely. A rope was stretched across and by the aid of this rope we all crossed without anyone slipping into the rapids.

About 100 yards below we again encountered a perpendicular wall with a deep pool at the base, and it was necessary to cross the river over boulders to the north rim. This crossing made a little before noon was the last one made during that third day. From this point we could see our No. 2 flag which had been placed on a rocky point of the south rim just above the lower dome-shaped island which is a short distance above Lion Spring Canyon. We found a large flat rock in this area approximately 65 feet square and a great many but little smaller. From this point, station 5.8 below East Portal, we could see our flag No. 3 which had been placed at the Bridge Site.

We stopped for lunch about 1:00 p.m. on a sandbar beside a deep swimming hole. Here Walker and I decided to do a little clothes washing before our swim, so he cast his underwear into the pool near the edge and turned to do something else with other articles of clothing. In a few moments he turned around and discovered that his underwear had totally disappeared, pulled under by the current and never to be recovered.

We ate our lunch in the shade of a huge overhanging black rock 42 feet high. Starting out after lunch we kept above the river boulders as much as possible, preferring to go through the ivy, Oregon grape, current bushes and other shrubs in preference

to working our way over the large rocks. At times we would drop back to the river bed for level readings and drinking water. On one of the little benches I found the handle part of an old boat oar washed up there and left during a time of high water. I picked it up and examined it and discovered that it was wrapped with a heavy leather band about eight inches wide and securely nailed to the oar near the handle end. Cut deep in the leather was the name in large letters—KOLB. This oar was undoubtedly used by Elsworth L. Kolb and party on one of the wooden boats used in an attempt to navigate the river through the rugged area of the national monument.¹¹ I stood the oar on end and piled rocks around it to attract the attention of other explorers who might be passing and perhaps bring it out as a museum piece.

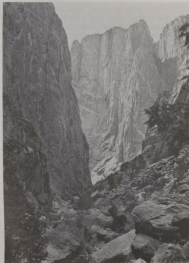
The river through this section makes a tremendous drop of 260 feet in a mile. There are several deep rapids in this mile just above the Bridge Site and one waterfall of 43 feet.¹² As we looked down the canyon from a point above the falls and saw

¹¹The Kolb brothers, Elsworth L. and Emory C., were photographers and for several years had a studio at the head of Bright Angel Trail in Grand Canyon National Park. They were well known Western river canyon explorers and made a photographic trip down the Green and Colorado rivers in 1911-1913. Elsworth was also interested in exploring river canyons tributary to the Colorado. According to Montrose newspaper accounts, Elsworth, in the autumn seasons of 1916 and 1917, after several attempts made the entire trip through the Black Canyon from Cimarron to the town of Austin. He and his companion, Bert Loper of Torrey, Utah, began the expedition at the Cimarron railroad bridge over the Gunnison River in the Black Canyon and after several days came out of the canyon at the East Portal of the Gunnison Tunnel. The section through the National Monument area of the canyon was attempted next and proved a very tough and dangerous challenge for Kolb and companions and required at least three different attempts to complete that section of the river expedition. Loper was with Kolb for part of the trip as were Billie Wright and others. Both canvas and specially constructed wooden boats were employed and eventually wrecked in the turbulent waters of the river. Physical injuries and discomfort of the men. However in September of 1917, Kolb, using a light canvas boat, completed his exploration of the Black Canyon, accompanied by Albert Moore of Montrose. They began this last lap of the expedition at Red Rock Canyon and proceeded to the termination of the canyon near Austin, Colorado, making this last sixteen mile section in four days.

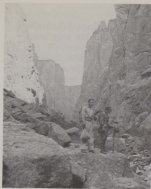
¹²Standing on the canyon rim at Chasm View and looking up the canyon one may see this segment of the rugged river bed with its series of rapids and small waterfalls.



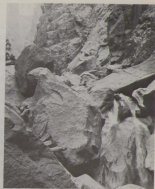
"Underwear Pool," where Walker lost his underwear. This black rock is 42 feet high. This was our lunch spot and swimming hole for the third day.



Looking downstream toward Bridge Site, now known as Chasm View.



Fleming left, and Warner, right, on rock ledge above the river bed, almost directly under Chasm View overlook.



Waterfall above Bridge Site. This is the top of a 43-foot fall, highest and most spectacular in the canyon. It may be seen looking upstream from Chasm View overlook.

the water rushing and plunging among the huge boulders and could see only the tops of the spruce trees below, I can assure you that the outlook did not appear very hopeful especially in view of the fact that it was time to stop for the evening and no sandbars were in sight. However, we made it through after some strenuous rock climbing and directly under the Bridge Site we found a large flat rock 50 feet long by 30 feet wide and with a small sandbar below it alongside a large deep pool of water, and here we spent the night. We found many rock fragments scattered over the sandbar where we would sleep, and the flat rock upon which we would cook and eat and we figured that these fragments were broken from larger rocks which visitors to the Bridge Site had at times hurled over the canyon rim in order to hear them crash. I decided to fish a while before supper in the deep pool and standing at the edge of our sandbar bedroom about the third cast with a small spinner I hooked and with the aid of Fleming landed a nice rainbow trout weighing from one and a half to two pounds. I was very much excited and

optimistic with this success and thought perhaps I had discovered the proper lure, but not so, as this was the only trout caught by any of the party on the entire trip.

Catching this trout however was an inspiration to the boys to hurry and get supper and it was not long until the trout was cut in sections and sizzling in bacon grease over the campfire. It was quite a task to get from our dining room on top of the large rock to our bedroom below. We used a rope to get down off the rock, then had to work our way for several feet between the underside of a flat rock and some driftwood which was rather a tight squeeze. Our luggage and water for cooking was raised and lowered over the large rock by means of a rope. This camp site may be seen from the rocks on the rim just a few feet north of the Bridge Site railing, and can be very readily seen from the opposite side of the canyon.



This is the face of the canyon wall at Chasm View overlook, as seen from the bottom.



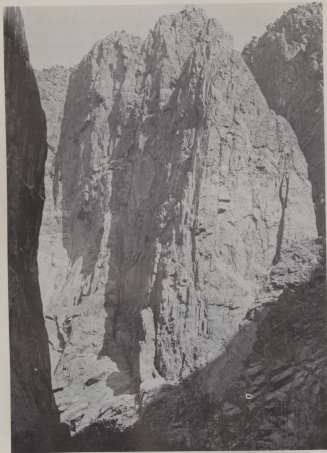
Boulderfield upstream from Chasm View overlook.

Fourth Day

We were rather slow in getting started on Thursday, the fourth morning, as we were tired and worn from the hard day before, although we had traveled only 1.3 miles. Leaving on the right or north side of the river we only went 200 yards until we had to cross to the south side. This crossing was effected by means of using ropes over large boulders, forming a natural bridge. The water runs under and among the large rocks at this point, practically disappearing from view. Some very interesting pot-holes were discovered in some of the rocks of this natural bridge and these, together with the natural bridge, can be seen from the Bridge Site on both canyon rims looking down the river. This crossing was rather dangerous and difficult as in one instance there was a sheer drop of some ten feet to a small round boulder below with a deep and swiftly moving current of water running by. A few yards below we had to cross the river to the north side, this crossing being accomplished with the aid of our ropes. This was our last difficult crossing as the river widens at this point and the boulders are not so large, or at least the large ones not nearly so numerous. Near the last rock crossing we came upon a small waterfall of several feet drop and under a large rock was a cave-like hole filled with mist from the falls. Stepping into this was like stepping into a real refrigerator.

Passing by the mouth of Grizzly Gulch we came upon a large cave that gave evidence of having been used a great deal by fishing parties coming down into the canyon from the north rim. Various cans and cooking utensils were found on a shelf. Some notes written on various kinds of paper were also found. One of the most interesting notes read as follows: "Hello boys just passing through—out of chuck. Found yours, hadn't eaten in 2 days. Thanks a lot boys. Do the same for you sometime." Signed—"The old prospectors." We left a note, giving our names and stating our mission in going through the canyon, then placed all the notes in a glass jar and left it in the cave.

We stopped at station 7.0 for lunch about 12:15. Here we found a beautiful little grove of box elder trees alongside a wonderful swimming pool. It was a most delightful place to stop for the noon rest period, especially as we could see the canyon opening up before us, the rocks getting smaller and the bed of the river smoother, and knowing that the difficult and dangerous part of our trip was over.



Typical specimen of Precambrian rock wall. This photo was taken in early morning with the sun shining on the north canyon wall, looking down river under Chasm View.

Leaving the little grove at 1:30 we started down the canyon on the right and were able to remain on this side the remainder of the afternoon. We crossed over a very large slide rock talus directly under Serpent Point, the highest point along the north rim. At this place Davis compared the south rim elevation with the water elevation and learned that the Black



Natural Bridge, with the river disappearing under huge boulders. Fleming with back-pack and ropes.



The second and last group of potholes discovered in the canyon. These may be seen in the natural bridge area, looking downstream from Chasm View overlook, or from the opposite rim of the canyon.

Canyon here was 2300 feet deep. As we journeyed down the canyon we came to a long pool of comparatively smooth water and swimming among the small rocks were great numbers of fish. This proved a temptation which none of us could resist, so we stopped to try our hand at catching them. In vain we fished and in vain we fished some more, but no success. There being a sandbar at the end of this pool and a good camping place, we decided to spend the night there. So we kept on fishing. Now every trout fisherman knows that the most aggravating thing in a fisherman's experience is to be able to see a lot of fine large trout in the clear water, to dangle all sorts of bait and lures in front of their mouths, and then to have them swim contemptuously away. This was our experience for two hours.

However, there was one recompense, for while sitting on the rocks fishing, Davis happened to look up at our No. 4 flag on a high point of the south rim about a half mile back of us and discovered a group of people standing there.¹³ He hastily got his transit level and looking through it found the parties to be Mrs. Davis, her brother, the Kane boys and one other person whom we did not recognize. We exchanged yells for a time and then proceeded to prepare the evening meal. Our special Black Canyon bread was getting rather hard and dry by this time so Walker, having flour along, said that he would bake us some fresh "twist." He peeled the bark off some green box elder limbs and wrapped his dough around these and baked it over the coals. This was broken off the limb and eaten. Now I am not certain what "twist" should taste like under ordinary circumstances, but I'll never know why Walker did not feed us the bark, as it certainly could have been no more highly flavored of green box elder than was the "twist", and he would have been spared his trouble. Anyway we finished our trip next day on our special bread and had about a half loaf left to feed the fish.

¹³This high point consists of a rather flat rocky area extending out into the main canyon and was in the early days of the monument called "High Point." It was designated a picnic area and equipped with rustic tables and grills. A few very old picturesque juniper and pinyon trees grow on this rock flat and from the precipitous rim one may get a magnificent view of the wider and more open canyon downstream.



River bed above the natural bridge area.



A large sandbar island, unusual for the Black Canyon.



Our last difficult rock crossing. Note the waterfalls.



Looking downstream. Serpent Point is at the upper right corner of the picture. Warner Point is the high point on the distant rim at the center of the picture.



Our last evening meal and last overnight camp in the canyon, July 19, 1934.

Fifth Day

We were up early Friday morning and everyone seemed to go about the morning tasks with a new zeal. Breakfast over, we made up our packs for the last time. They were much lighter now as all of our provisions had been eaten except what we had saved for our last noon lunch. As we started out from camp at 7:30 all were in fine spirits, happy, and two or three of the party even did a little singing. Although we knew we had about three or four miles to make, we felt certain that we could easily finish the survey and climb out Red Rock Canyon and be back to civilization by evening. We crossed a small branch of the river to an island, over the island and across the river again to the north side. The river bed is rather wide in this area, averaging from 200 to 300 feet and travel was rather easy. Of course we encountered a great many large rocks, but in many instances these could be avoided and we could walk over sand or small round river stones. In many places in the moist sand we saw deer and mountain sheep tracks along the water.¹⁴ We found it

¹⁴An interesting observation I made was the scarcity of bird life in the canyon. Soon after starting down the canyon from East Portal we saw many violet-green swallows flying above the water. Then throughout the next few miles we saw the one lone eagle referred to in the story, a Canyon Wren at the natural rock bridge near Grizzly Gulch, a large owl and a few smaller birds near Red Rock Canyon. Except for the sound of rushing waters, the silence of the canyon was unbroken by wild bird or animal life.

necessary to cross the river again to the south side on account of a smooth wall and deep water, and this we did by wading for about 100 feet in water knee deep and with the aid of poles carried in one hand. At station 9.2 we crossed the river by wading and continued down along the north side for about a mile. About two miles above Red Rock Canyon the Kane boys met us and assisted in carrying our luggage. We crossed the river for the last time to the south side by stepping from rock to rock with the aid of hand poles. This crossing was about a half mile above Red Rock Canyon which we reached about noon. We made our best time through this section of the canyon, averaging about one mile per hour. After a good swim, lunch and a long rest, we made ready to climb out of the canyon. The Kane boys had brought Bowen and myself a pair of boots and shoes respectively as we had requested when we last saw them on Tuesday afternoon. These were a great comfort to us as we made the long climb out through Red Rock Canyon to the south rim. We reached the top about 4:00 p.m. Friday afternoon and found Mrs. Davis and brother there with one automobile and the government truck which the Kane boys had left, and we were soon loaded and by evening were back in Montrose.

It was a great experience—our survey expedition through the Black Canyon in the national monument area and although difficult and treacherous at times our mission was accomplished



Our last swim before leaving the river, at the mouth of Red Rock Canyon.



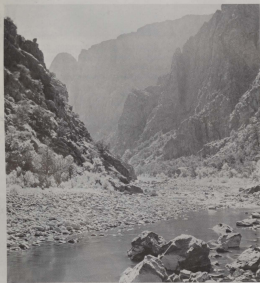
We bring to an end our expedition through the monument area of Black Canyon and make ready to climb out through Red Rock side canyon. Back row, from left: Davis, C. Kane, Eykyn, Bowen, Warner; front row, from left: H. Kane, Fleming, Walker.

without accident or personal injury. There was a certain sense of freedom we felt when we realized we were back again in a world that was vastly different from what we had known for the past five days in the canyon. We had lived and traveled in this spectacular gorge nearly a half mile deep with the blue sky above, the granite walls of the canyon surrounding us, and the restless and ever-moving river beckoning us onward.

Now we were back again in the world of people, of problems and places - a world of things to see and do, a world vastly different from what we saw in the canyon. But we came to love and appreciate the Black Canyon from our very first steps down the rough river bed. It had been good to us all the way. Every area was different, fascinating and challenging, and for a while the canyon was ours—it was our home. We enjoyed the close fellowship of each member of our party. We all shared in the daily tasks and the solution of our problems as we encountered them. We had observed and learned and enjoyed many interesting things about the canyon, especially in the nature of fantastic geological formations, with rock points,

pillars and towers pointing upward toward the open sky. Throughout the entire course of the canyon great evergreens were growing out of the deep crevices and on the talus slopes at the base of the canyon walls. One of the most interesting observations we made, and this should prove valuable for future canyon explorers to know, was that most of the numerous "side canyons" that may be seen along both canyon rims only extend part way down the main canyon walls and only a very few continue their course all the way down to the river bed.

All in all our survey expedition through the Black Canyon of the Gunnison National Monument was a challenging and exciting experience and the factual data and statistics obtained as a result of the survey should prove of interest to the vacationer, the student, or the hardy explorer who might wish to observe and study the canyon more thoroughly.



Looking upstream from Red Rock Canyon; river bed is wider, canyon walls start gradual slope.

Appendix

The following statistical data is provided in order to enable the Black Canyon visitor to better understand and appreciate some interesting features of the canyon. As one stands on the rim of the canyon on either side and looks down into this spectacular gorge ranging from a little more than a quarter to nearly a half mile deep, he is looking into one of America's great canyons. The depth, narrowness, and sheerness of the walls and the rugged geological features impress one with both a sense of terror and of appreciation of majestic beauty. The side canyons are numerous and interesting and should be carefully studied. A few extend from the main canyon rims to the river, but many of them terminate a few hundred yards below the rim.

The deepest part of the Black Canyon—2724 feet—is at Warner Point and the minimum depth is at The Narrows—approximately 1725 feet. Here the canyon is only 40 feet wide at the bottom, or water level, and approximately 1100 feet wide at the rim.

The speed with which the Gunnison River makes its way through the Black Canyon is one of the interesting and unusual features. The river bed gradient is exceptionally steep, dropping 1050 feet in 11 miles, or an average of about 95 feet per mile. In the Pulpit Rock, or Chasm View, area the river drop is approximately 480 feet, or an average of 240 feet per mile through that two mile section. Standing on either canyon rim in this area, one may look down and see the river madly rushing over and among the great boulders and at times hear the muffled roar of the water, but again one is awed by the impressive silence of this stupendous gorge which has been carved through earth's hardest rock formations.

The following statistical tables, with slight modifications, were prepared by Platt Cline, former ranger at the south rim of the canyon in 1936, using figures provided by the author (see next page).

