

**HISTORY and EXPLORATION  
of the  
GRAND CANYON REGION**



**Natural History Bulletin No. 2  
Grand Canyon Natural History Association  
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# Natural History Bulletin No. 2

November, 1935

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This bulletin is published by the Grand Canyon Natural History Association as a project in keeping with its policy to stimulate interest and to encourage scientific research and investigation in the fields of geology, botany, zoology, ethnology, archeology and related subjects in the Grand Canyon region. This number is one of a series issued at irregular intervals throughout the year.

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# RESUME

## of

# GRAND CANYON HISTORY

By Frederick S. Dellenbaugh\*

**D**ON Lopez de Cardenas, of Coronado's expedition, discovered the Grand Canyon in 1540, as a result of stories told by the Hopi Indians to Don Pedros de Tovar. The old records describe a chasm which seemed to be more than 3 or 4 leagues across in an air line - "que auia mas de tres o quatro leguas por el ayre".

For a long period thereafter the Grand Canyon region and the Colorado River remained practically unknown. It is next recorded as having been seen by two Spanish priests in 1776; Padre Garcés, crossing eastward from the lower Colorado to the Hopi towns, halted, he says, "at the sight of the most profound box canyons which ever onward continue, and within these flows the Colorado," and Padre Escalante, who, in searching for a place to cross from the north after his failure to proceed westward from Santa Fe to Monterey, finally found the old Ute ford, used by Indians for centuries, near the foot of Glen Canyon (in latitude 37°), and by means of it was able to reach Zuni. The ford then became known as El Vado de los Padres - the Crossing of the Fathers - for long the only known crossing of the Colorado in a distance of several hundred miles.

The first American to visit the region was James O. Pattie, accompanied by his father. They trapped beaver on the lower Colorado in 1825 and '26. In 1826, returning eastward, they traveled for 13 days, following, apparently, the Grand Canyon as well as they could, but unable to reach the river at any point, till at last they arrived at a place where the river "emerges from these horrid mountains". This was the first extended trip on record of any human being along the brink of the Grand Canyon.

The same year that the Patties went to the lower Colorado, 1825, General Ashley, in pursuit of his fur-trading enterprise, attempted to descend Green River from near the

\*Explorer, historian, member of Powell's Second Colorado River Expedition, deceased Jan. 29, 1935.

present crossing of the Union Pacific Railroad. He was forced after great hardship to give up the effort in the Unita Valley.

The famous American trapper and pioneer, Jedediah Smith, crossed the river going west in the Mohave Country in 1826 and again in 1827. In this latter year the Patties returned to the lower Colorado and trapped down the river from the mouth of the Gila in dugouts, the first navigators of this portion since Alarcon, of the Coronado expedition, came up in 1840. Quite unexpectedly they made the acquaintance of the great bore at the mouth of the river where they were in waters that Lieutenant Hardy, of the British Navy, had entered the year before.

Other trappers after beaver then followed into the region, and the Government began sending out exploring parties. One of these under Sitgreaves crossed the Colorado in 1851 about 150 miles above Yuma, and three years later another under Whipple, surveying for a railway along the thirty-fifth parallel, crossed a few miles above the mouth of Bill Williams Fork.

When the California gold rush developed, one trail of the Forty-niners led down the Gila and crossed the Colorado at its mouth, and then various activities on the low river began. The first steamboat was brought to the mouth of the Colorado and up it in 1852. It was named the Uncle Sam.

Edward F. Beale, surveying a Government wagon road, crossed and recrossed in 1857 and 1858, near the mouth of Bill Williams Fork, and in January, 1858, the Government exploring expedition under Lieutenant Ives proceeded from the mouth up the river in a small stern-wheel iron steamer, the Explorer, as far as the foot of Black Canyon, whence the ascent was continued in a small boat to the mouth of the Vegas Wash. This was not the first steamer up, however, as Captain Johnson, of a commercial navigation company, had steamed up and passed with his steamboat clear through Black Canyon to its head some days before, mainly to "get ahead" of Ives, who had earlier displeased Johnson. Ives then proceeded overland to the mouth of Diamond Creek and to the Hopi towns via Havasu Canyon.

"It seems intended by nature," says Lieutenant Ives, after vainly trying to reach the rim, "that the Colorado

River, along the greater part of its lonely and majestic way, shall be forever unvisited and undisturbed."

This same year of 1858 saw the first recorded crossing of the Colorado from the north, by white men, since Escalante. This was accomplished by Jacob Hamblin, a well-known Mormon, a missionary and Indian agent, from Utah to the Hopi towns. An Indian guided him to the Ute ford (Crossing of the Fathers) and he used it thereafter almost yearly. These Mormons for long years were the only persons besides Navajos and Utes to cross the river anywhere. The ford, known to few, was difficult and dangerous at all times and impossible except at low water.

In 1862 Hamblin went around the Grand Canyon by the west end to the Hopi towns and returned by the Crossing of the Fathers at the east end, practically, as Marble Canyon begins a few miles below. The next year he again went around by the west end to the Hopis, visiting on the way the "hermit" tribe, the Havasupais, in their deep canyon home, being the first white man on record to do so after Lieutenant Ives. The party returned to St. George around the west end of the Grand Canyon. Nobody, as yet, went to the rim and there was no known crossing of the Grand Canyon itself anywhere by white men.

Another attempt to descend Green River from the California Trail (near the present Union Pacific Railroad) was made in 1849, by William Manly and party. They expected to find a shorter and easier road to the California gold fields. After a hard time they emerged into Uinta Valley, where they met the noted Ute chief Wakar ("Walker"), who was good to them and urged them not to try to go farther down the river.

In 1867 a man named James White was picked up from a raft near Callville, below the mouth of the Virgin, in an exhausted condition, and those who aided him immediately but erroneously assumed that he had come down through the Grand Canyon, the result of an ignorance as great on their part as on that of White. He knew nothing about the interior of the great canyon and mentioned that he had run one big rapid, whereas he should have mentioned big rapids by the dozen.

So nothing was definitely known about the mysterious interior of the Grand Canyon or of the canyons of the Colorado River above as far as the Uinta Valley or Green River until

Major John Wesley Powell, one-armed veteran of the Civil War, made his famous passage of all the canyons. He started with nine men and four boats from Green River City, Wyo. (on the Union Pacific Railroad, then the only railway across the continent), on May 24, 1869. One of the men (Goodman) was disheartened and left the party in the Uinta Valley.

The terrifying water-falls and underground passages described by trappers and Indians were not found, but the declivity was often extremely great and continuous (as in Cataract Canyon, where it is continuous for about 20 miles), producing violent cataracts, with huge waves and a water velocity of over 20 miles an hour, frequently studded with giant rocks.

The trip was one of incredible hardship and danger, led by the one-armed major, who had lost his right arm at the Battle of Shiloh. The plunging rapids in the whole length of the journey numbered several hundred to overcome the 6,000 feet difference in altitude between Green River City and the sea. The boats were often upset and the passage of many of the rapids was perilous to a degree. Frequently the party would be forced to embark on long foaming declivities without being able to discover what other, perhaps greater, falls might lie around the precipitously walled bends in front of them.

One of the boats, some of the scientific instruments, and a considerable amount of the food supply were lost in the Canyon of Lodore; and some that was rescued had to be left, as the remaining boats were overloaded. For weeks the clothing of the adventurers was never dry; and when they finally entered the mighty depths of the Grand Canyon itself, in August, there was little food remaining.

The sharpest rapids occur in the granite, and the first Granite Gorge, running past the Powell Monument, contains the worst portion of the whole river. When, therefore, another "Granite Gorge" developed below Diamond Creek, the men, stalwart and full of nerve though they were, were disheartened, having become somewhat demoralized by lack of food and tremendous strain. Three of them consequently announced that they would go no further.

This was desertion, but they preferred it to risking the difficulties they saw ahead. They believed they could climb out and reach the well-known Mormon settlements on the north,

and they believed a river party would be lost or starve.

"At one time", says Powell in his report, "I almost concluded to leave the river. But for years I have been contemplating this trip. To leave the exploration unfinished, to say that there is a part of the canyon which I can not explore, having already almost accomplished it, is more than I am willing to acknowledge, and I determine to go on. . . .For the last time they entreat us not to go on, and tell us that it is madness to set out in this place," - the same appeal that Dunn made to Hawkins, the cook of the party, as Hawkins himself tells it.



### POWELL MEMORIAL South Rim of Grand Canyon

William R. Hawkins, writing of this in after years, says the three men had "made up their minds to go, and Dunn said he hated to leave Hall and myself, as we had been together a long time, and that we would perish in the river. (Note the fear of the river which had developed in the minds of at least three.) While we were talking, the major came up to me and laid his left arm (he had no right) across my neck, tears running down his cheeks. By that time the rest of the boys were present, and the major said to me: 'Bill, do you really mean what you say?' (that he would stick to the major on the

river). I told him that I did, and he said that if he had one man that would stay with him he would not abandon the river. I just simply said that he did not know his party."

He certainly had reason, with three men about to desert, to believe that others might. The other five were true, however, and it is only just to say that one of the deserters would have stood true also had it not been for his brother, who was determined to leave. They all then drank coffee together. The boat party went on, the deserters climbed out on the north, each party thinking the other party doomed. The deserters would have fared well enough and would have arrived at the Mormon settlements had it not been that the Shewits Indians on the plateau believed, or said later that they believed, that these were miners who had committed depredations on a tribe to the south. The men were therefore killed not far from Mount Dellenbaugh, and their clothing, rifles, and other equipment appropriated.

The place on the river where they left the major is now known as Separation Rapid. The day after they departed Powell and "the faithful five" reached the end of the great chasm without serious mishap. The names of the three deserters have justly been omitted from the roll of honor inscribed on the Powell Monument.

Powell's journal of this famous voyage is one of the most fascinating tales of adventure in literature. A large part of his meager notes having been lost, Powell repeated the trip on a more extensive basis in 1871 and 1872, obtaining then the data on which his report was based. Afterwards Powell became director of the United States Geological Survey and of the Bureau of Ethnology, which he established.

# THE ORIGIN of HENRY VAN DYKE'S POEM ON THE GRAND CANYON

By John C. Merriam\*

LITERATURE concerning great natural features includes two principal types of writing; one presents description or record of things observed, the other gives us personal or human impressions of what is seen. Though description furnishes essential information, it may not give as accurate an idea of reality as is contributed through the medium of what we sometimes call human appreciation.

For anything possessing as many extraordinary features as the Grand Canyon, it is not to be expected that an adequate representation will be found in description alone. Nor is it to be assumed that any single statement concerning human appreciation will be wholly satisfactory for every one. The most effective picturing may be discovered in a human impression combined with details of description, or it may arise through expression of a human reaction that is in some measure built out of our inheritance from age-long experience in the spiritual life of mankind.

Although the poet is commonly recognized as having such liberty in use of facts that his writings are not to be considered of special value as description of nature, at times his form of statement carries the effect of reality in a manner rarely attained by rigorously accurate scientific description. Such, for example, is the value of the following lines in Tennyson's description of erosion:

The hills are shadows, and they flow  
From form to form, and nothing stands.  
They pass like clouds, the solid lands.  
Like clouds they shape themselves and go.

No other picture has presented so clear a vision of what one senses in the atmosphere and in changing forms of the land at Grand Canyon.

\*President, Carnegie Institution of Washington.

Henry Van Dyke's poem, addressed to "The Grand Canyon" must be classed among the greater efforts to formulate something of the impression made by the Canyon. The origin of these verses illustrates the manner in which a statement that is not narrowly descriptive may convey an idea of reality in terms of human appreciation, when an attempt to delineate elements closely might fail to satisfy the purpose in view.

In a conversation with Dr. Van Dyke some years ago I learned that he had twice visited Grand Canyon with the idea of writing a poem such as was finally embodied in his well known verses. On each occasion, with all of the materials before him, he failed to develop a satisfactory description or conception and left, despairing of ever creating anything approaching his ideal.

After his second attempt to produce a satisfactory picture of the Canyon, Dr. Van Dyke visited one of the Pacific Coast cities where, in an upper story of a large hotel, in the midst of the hurry of business activities, there came to him the ideas he desired.

In giving the story of this experience, Dr. Van Dyke left with me the impression that, on his two visits to the Canyon, study of the multitude of beautiful and sublime objects immediately before him brought such a wealth of thought that selection and definition of the greatest attributes seemed impossible.

Only when from a distance in space and time values of the lesser elements began to fade was he aware of the things so overwhelmingly important that their imprint on his mind remained clear and in proper relation to the picture as a whole.

Among the lines in Van Dyke's poem on the Grand Canyon that are especially impressive one finds the following:

Thou vast profound, primeval hiding place  
   of ancient secrets - - - -  
 Art thou a grave, a prison, or a shrine?  
 - - -A living silence breathes  
 Perpetual incense from thy dim abyss.

Yet no confusion fills the awful chasm;  
But spacious order and a sense of peace  
Brood over all.

Who gave thee power upon the soul of man  
To lift him up through wonder into joy?

Now far beyond all language and all art  
The secret of thy stillness lies unveiled  
- - - - -This is holy ground,  
Thou art no grave, no prison, but a shrine.

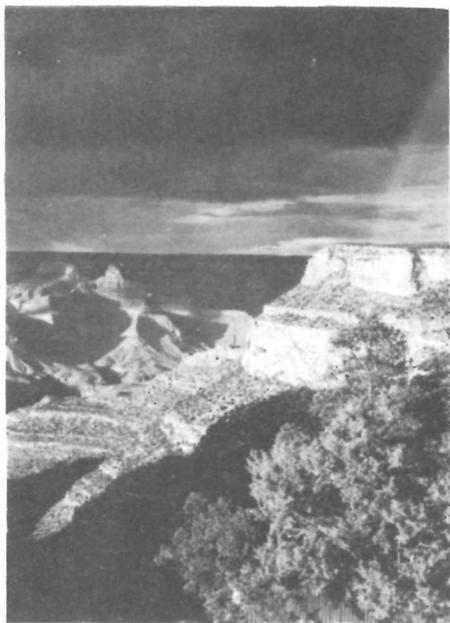


Photo by E. W. Count "

## CHEYAVA FALLS

By Emery C. Kolb\*



AS early as 1902, vague rumors were heard of the mysterious roaring of Thunder River far below the western end of the Kaibab Plateau. That the prospectors and miners who circulated the reports never mentioned a similar roaring of the Cheyava Falls at the head of Clear Creek to the east, is probably due to the fact that during the long winters, cold weather and blankets of snow always drove both animals and men to lower levels towards the north. These elements likewise prevented their return until after the heavy thaw and therefore after the subsidence of the greater part of the spring run-off. The Cheyava Falls, which gush out of the upper part of the Blue Lime Wall (Redwall), make a mighty roar in the early spring as they pour out from under the western rim of the Walhalla in the eastern section of the Kaibab Plateau.

In early May of 1903 William Beeson, now of Flagstaff, who was then driving a tourist conveyance for the Cameron Camp on the South Rim of Grand Canyon, reported seeing from O'Neil (Yavapai) Point a huge sheet of ice, estimated to be several hundred feet in length, glistening over the wall a dozen miles away across the Canyon. Our experiences within the canyon led my brother and me to believe that it would be impossible for ice to withstand the warmth of the canyon walls so late in the spring. Searching with a powerful glass from the veranda of our studio, furthermore, we were repaid by finding that instead of ice, the glistening we could see was the top of a high falls of sparkling, clear water pouring out of the sheer wall. From then on, each spring, generally beginning the middle of April, this was one of the major attractions to be pointed out from O'Neil Point, from where it shows to best advantage.

\*Editor's Note: The Author of the above article is one of the early explorers of the Colorado River through the Grand Canyon. The experiences of his trip of 1911 are interestingly described in his book "Through the Grand Canyon From Wyoming to Mexico".

An urge to visit and photograph the remote and undiscovered sections of the Colorado River canyons was early acquired by my brother and myself but it was not until the spring of 1908 that opportunity to visit upper Clear Creek Canyon presented itself. It came with the development of a cable crossing over the river, and establishment of a tourist camp near the mouth of Bright Angel Creek. The camp was then known as Rust's Camp, later as Roosevelt Camp, because Colonel Roosevelt spent a night there in 1913, and still later as Phantom Ranch. Obtaining the services of one of Mr. Rust's employees, Mr. Israel Chamberlain of Kanab, Utah, my brother Ellsworth prepared for a mad dash out of the Granite gorge and eastward across the Tonto bench to photograph Cheyava Falls. Since the climb and hike of over ten miles was made with heavy plate cameras and with canteens of water, it was impossible to carry blankets so the men spent long nights shivering in the gusts of cold wind off the high plateau. Furthermore, rations were necessarily extremely light and were soon exhausted. My brother and his companion, nevertheless, were gone four days and returned with excellent pictures.

My first visit to Cheyava Falls was by a different but more dangerous route. A friend, Milton Madden, and I rowed and dragged an open fourteen-foot canvas boat with our cameras and luggage, upstream from Bright Angel Creek to Clear Creek. At the mouth of Clear Creek we camped two nights. The trip to the falls and the return to the river occupied a full day. Over this route only cameras and lunch were carried, thus eliminating the weight of our beds. It was all hard work, nevertheless, though thrilling to the utmost. The return trip to Bright Angel Creek down the river was made in only an hour for we were caught in a fast rising river which gave us no little alarm and necessitated quick thinking and quick action.

Since my first trip to Clear Creek, while much thought may have been given to the place by various people, little more was heard about this region until Chief Ranger Brooks, with his aids, planted the stream with trout in 1929. Mr. Brooks reported finding considerable evidence of ancient Indian occupation there. Whether the Indians had access from the Kaibab Plateau at the head of the canyon or followed the tortuous Tonto Bench above Bright Angel Creek and around Brahma and Zoroaster Temples, is a question still to be decided.

Although a topographic map embodying this region was made near the start of the century, not until 1923 was the Clear Creek waterfall marked on U. S. Geological Survey maps.



CHEYAVA FALLS

Photo by E. Kell ©

At this time, Colonel Birdseye, then Chief Topographic Engineer, requested my brother and me to give the falls an Indian name. My brother chose Cheyava, meaning in Hopi, intermittent river, which at the time we thought applicable. Upon later investigation we found that our supposition that the water dried up entirely during part of the year was probably incorrect.

In the middle of September 1930 when my brother and I thought the falls to be entirely dry, we decided to explore the cave. To our disadvantage on the one hand and delight on the other, we were surprised to find considerable water, undiscernible at a distance at that time of the year, running through crevices and brush at the mouth of the cave. This led us to believe that there is some perennial water at the falls.

Reaching the cave at the head of Cheyava Falls was no minor undertaking, although through our telescope it appeared to us that the 2000 foot descent to the top of the Blue Lime Wall could be reached without much rope-work. A final 200 foot sheer drop over this wall to a projection underneath the cave was anticipated.

My brother drove around to the North Rim equipped with ropes, pulleys, beds, etc., to search for the nearest approach by road to a place from which we could make the descent to Cheyava Falls. When this was located, he phoned that all was in readiness. Then to curtail the absence from my daily lectures on the South Rim and thinking the job might be done in about one and a half days, I flew across. My brother met me at the air field and we slept in the pines in order to make a fairly early start in the morning.

At the rim of Grand Canyon where we descended, a huge cut or slide had been formed through the entire Kaibab formation and almost to the bottom of the usually perpendicular Coconino Sandstone cliff. Through the telescope the cut had appeared to be complete, but arriving near the bottom of it with our load of ropes, cameras, food, and other equipment, we were stopped by an eighty foot precipitous drop. Our loads were lowered to the bottom of it with a rope. Then we found a route for ourselves provided by several fir trees which were growing twenty to twenty-five feet from the base of the cliff and which extended up to the ledge on top. The upper part of one of these trees was snared. The other end

of the rope was then fastened around a huge rock and over the rope and down the tree we climbed, over-coming our first difficulty.

At the base of the Coconino cliff food was left for our return. No hats or coats were taken. Our sacks, canteens and huge coils of dangling rope gave us enough trouble in the thick brush. About 400 feet below, another ledge - this one with a drop of about forty feet - was passed with the aid of a wire, which we left there. Then about halfway down the red Supai wall, a huge fir tree which had been stripped of its limbs by rocks, was slid down three hundred feet and over another 40 foot drop. The small end of the tree flopped down first, making the pole difficult to "coon".

One hundred and twenty-five feet of rope were left at a still lower point over a series of sheer ledges. From there on, having nothing but a rough slope to contend with, we were able to climb down to the top of the blue lime without the aid of ropes. The amount of rope distributed over the ledges for our return left us but 400 feet of one half inch line for our block and tackle - just half the amount needed. Darkness was now upon us so we covered ourselves as best we could with knapsacks and whiled away the hours until daylight. We were by this time without food and water, so leaving our cameras and other equipment, we climbed out to obtain more rope and provisions.

On the North Rim about 200 feet of three eighth inch rope was all we could secure, but we decided to make the final 200-foot descent with this addition. The following noon we "topped-off" again, taking what we thought to be sufficient food and water and leaving another cache at the base of the Coconino. It was too late to accomplish much that evening so another night was spent just above the cave. A miserable night it was - no shelter.

My brother and I worked all the following morning constructing a boom over the ledge to attach our pulleys to. The brush hampered our work in stringing out the 600 feet of rope, and it was nearly five o'clock in the afternoon when we were ready for the final descent. A heavy storm was brewing, but as we were out of food and water, Ellsworth decided to take the canteen and make the drop anyway to the sparkling water, 200 feet below us.



Boom & Dully Operated  
by Emory Kullb

Sitting in a loop, down my brother started. As I handled the slack end of the rope, I could peer a thousand feet below into the Clear Creek Canyon. Ellsworth was just half

way down to the cave when we were caught in one of the most terrific rain and hail storms I have ever experienced. The lightning struck close by many times. So strong was the wind, I had fear of being blown from the cliff.\* I withdrew from the edge, tying the rope to a small Pinyon pine, leaving my brother dangling in the air, and since the cliff receded below, he was prevented from steadying himself against the wall. This permitted the wind to whirl him round and round until the three wet ropes became one.

When the storm abated some, I dropped a pole to my brother on a thin line, and he used it to gradually unwind himself. It was a long task but finally the rope slackened. Then inch by inch I let him down.

The cave exploration was necessarily cut very short since we had no lights, also because 200 feet of loose rope had to be untangled from small trees and brush on the ledge below and the hour was growing late. My brother filled the canteen, then I began pulling his 165 pounds of weight up with the three-way rope system which necessitated much more effort than the usual four-way block and tackle. Ellsworth dropped his pole and again the rope spun, but by dark I had him up.

I was exhausted. The strain of pulling my brother up had been such that I developed an uncomfortable rupture and this caused no little annoyance in the climb back over the ropes. Ascending in total darkness, we reached the cache at the base of the Coconino where we remained even though it rained the whole night through.

At the break of day, my brother and I climbed the tree and "cooned" the rope to the base of the big talus slide. Without further delay we "topped-out" reaching our car about 10 a.m. My condition prevented further immediate attempts at

\* Extremely violent storms of short duration, often accompanied by strong winds are not uncommon at the Grand Canyon. On Feb. 25, this year, a storm broke at Clear Creek with such violence that several well put-up and anchored tents at a C.C.C. fly camp which was established there, were blown down, and effects of the camp were widely scattered.

the cave, and I could not then either walk or ride across the canyon by trail, so my return to the South Rim was made by airplane. The trip had lasted six days instead of the allotted one and a half.

At a later time, with the aid of a helper to handle the ropes at the pulley, my brother made two more attempts to reach the cave. A weighted wire was dropped beside the ropes, preventing them from spinning. But not until the third attempt, when he took a twenty-foot ladder to get over rocks in the cave, did he make any real ingress.

The cave as described by my brother is approximately 60 feet high at the entrance, with the lower opening blocked by huge rocks which have fallen from the ceiling. Inside, the ceiling extends upward in the shape of a dome, 100 to 150 feet in height. The width is about 100 feet and a lake extends 600 feet back. This is divided by a huge rock or ledge necessitating the use of a 20 foot ladder. There are no stalactites of importance but many lime crystals and incrustations are in evidence.

Except across 75 feet at the end of the room my brother found no wading necessary. At that point the ceiling tapered down to within two feet of the water. A cataract could be heard beyond, but he made no attempt to duck under the ceiling and examine further.

A fine trail is now being constructed from Bright Angel Creek to the base of the Clear Creek waterfalls, but there is still opportunity for the adventurous person to further explore the cave. Our boom yet hangs over the cliff, patiently waiting for the next explorer.

## BREAKING a TRAIL THROUGH BRIGHT ANGEL CANYON

By Francois E. Matthes\*\*

**T**HIS autumn - in the month of November, to be precise - it will be just thirty three years since the first pack train made its way through Bright Angel Canyon. It was a rough-and-tumble journey the hazards of which may be difficult to imagine by those who now travel safely and comfortably across the Grand Canyon via the excellent Kaibab Trail. The perils that were faced by those hardy explorers who passed through the Grand Canyon in boats, and battled with the rapids of the Colorado River, are now known to many, but the adventures of the first party to cross from one side of the Grand Canyon to the other with a pack train have never been told. Here follows a brief statement of the circumstances.

In the spring of 1902 it was my privilege to be assigned to the task of beginning the topographic mapping of the Grand Canyon for the U. S. Geological Survey. Naturally our party started work on the south side, the Grand Canyon Railroad affording the most convenient route of approach. For several months the surveying operations - triangulation, leveling and plane table mapping - were carried on over the Coconino Plateau and from its rim down into the chasm. Then we began to seek a route across to the north side. But at that time there was no trail across from rim to rim, nor was there a bridge over the Colorado. We found ourselves face to face with a barrier more formidable than the Rocky Mountains, - an abyss 280 miles long containing an unbridged, unfordable, dangerous river.

Not unnaturally we cast longing glances up Bright Angel Canyon - it seemed to us such a convenient, straight avenue.

\* Reprinted from Grand Canyon Nature Notes,  
Vol. 2 No. 6, November 1927.

\*\* Geologist, U. S. Geological Survey.

But Bright Angel Canyon, we were told, afforded no practical route for pack animals, and might be impassible even to the foot of man. Lee's Ferry, at the head of Marble Gorge, of course, was suggested, but to cross the river there would require a detour of some 180 miles, mostly through parched deserts, where feed and water would have to be carried for the animals. There was but one other choice, to go west 35 miles and descend by the Bass Trail, cross the river in some way, and climb out on the north side through Shinumo and Muav canyons. The crossing was known to be dangerous; the Pass Trail was merely a burro trail, still unfinished at the lower end, and the Shinumo Trail was little more than a faint track, seldom used. Yet this was the route we finally selected.

About the middle of August, when the river had subsided to a moderate level, we set out with a pack train of ten animals. W. W. Bass kindly consented to our using his home-made boat, and this, of course, facilitated matters considerably. Unfortunately, however, we found that the boat was on the north side of the river, and two of us, consequently, were obliged to match our strength against the current and swim across to get it.

The camp equipment was quickly ferried over, but the transferring of the horses and mules proved a difficult task. The animals, worn out by the heat, and unnerved by their descent over the great rock slide at the foot of the trail, could not be induced to enter the water. A strategem had to be resorted to. They were led down to a rock platform, ostensibly so they might quench their thirst, then suddenly they were pushed over into the swirling flood. Quickly behind the boat they were then towed across, one by one, but in their frenzy many of them tried to swim back, or down stream, or even to climb into the boat, so that the rowers were more than once in danger of being dragged down over the turbulent rapids below the crossing. Eventually, however, all the animals were landed safely on the north side.

The next day we began the ascent to the rim of the Kaibab Plateau. It took us a day and a half of arduous, exhausting work to gain the top, and the entire trip to Point Sublime, where the mapping operations were resumed, consumed six days.

There was no thought, during the two weeks while we were on the Kaibab Plateau, of sending back to the south side of the canyon for supplies. The Bass crossing could not be

negotiated by one man, nor even by two, and the whole party numbered only four. Instead we sent to Kanab, Utah, although that place was 75 miles distant by trail and the packer had to make a full week's journey to do his shopping there and return to the camp on the rim.



BRIGHT ANGEL CANYON  
Seen From South Rim

As autumn set in, and the prospect of a snow storm grew more and more imminent (heavy snows begin to fall on the Kaibab Plateau usually early in November), we were forced to consider a retreat to the south side. The survey by that time had progressed as far east as the head of Bright Angel Canyon and we found ourselves directly opposite Grand Canyon

station, and only 13 miles distant from it in air line. Again Bright Angel Canyon beckoned to us as a possible avenue, and eagerly we scanned its sides for a practicable way down.

Now Bright Angel Canyon is carved along a great fracture in the earth's crust, - a "fault", as it is termed by geologists, on which the strata are offset vertically by more than a hundred feet, and the lines of cliffs are consequently broken. The same fault extends southwestward into the embayment on the south side of the chasm and has made possible the building of the old Bright Angel Trail, now familiar to the thousands of tourists. It did not take us long, therefore, to discover a route along this fault where the Red Wall, the cliff of the Coconino sandstone, and the lesser cliffs are interrupted by slopes of debris.

On the very day when we started to examine this route, by a remarkable coincidence, there emerged from the head of Bright Angel Canyon two haggard men and a weary burro. These men, Sidney Ferrall and Jim Murray, had explored up through the Canyon and finally had fought their way up along the fault zone. At once the prospects of the return of the survey party by this new route became brighter. However, it does not follow that where a small burro was boosted up, a pack train of heavily loaded horses and mules can come down in safety. Two of the party, therefore, set themselves the task of cutting out brush and rolling out logs and boulders, so as to make a reasonably clear way for the pack train. And this work they carried all the way down to the mouth of the Canyon.

On the 7th of November, when heavy clouds presaged a change in the weather, we hastily broke camp and proceeded down our new trail. So steep was it in certain places that the animals fairly slid down on their haunches. So narrow between the rocks was it at one point, that the larger packs could not pass through and had to be unloaded. Of accidents there were more than can here be chronicled, but none of them fortunately was of a serious nature. The mule carrying the most precious burden - the instruments and the newly made maps - was led with particular care, but she lived up to her reputation and made the trip without a stumble.

By noon the bottom of Bright Angel Canyon was reached, and then the party threaded its way down along the bouldery creek, crossing and recrossing it to knee-depth, no less than

94 times. Camp was made a short distance above the boxed-in lower part of the canyon, and a large bonfire was lit so that the people on the South Rim might see that we had successfully reached that point. (Ferrall and Murray had preceded us and had made known our intention of returning via Bright Angel Canyon). That night it rained and the following morning we beheld the rim of the Kaibab Plateau white with snow. Evidently we had left none too soon.

After a sojourn of several days in Bright Angel Canyon, during which the course of the stream was duly mapped, we proceeded to the river and once more faced the problem of crossing it. With the aid of a boat lent by a friendly prospector, however, this was accomplished with little difficulty, the animals, now homeward bound, having apparently lost their fear of the river. Soon, therefore, we were scrambling up the prospector's steep burro trail and without serious mishap reached our goal on the south side.

The next year, when the survey was extended eastward, Bright Angel Canyon became our regular route of travel across the Grand Canyon, both northward and southward, although the trail remained as rough as ever. A steel row boat, in two sections, was packed on mules to the river crossing, to replace the wooden boat which had been swept away by the flood. Some years later enterprising citizens of Kanab, in order to promote tourist travel to the north rim, improved the trail up Bright Angel Canyon, and spanned the river with a steel cable along which a traveling carriage large enough to hold a pack animal could be hauled across. When the National Park Service took over the Grand Canyon, in 1919, finally, it set to work in earnest to make Bright Angel Canyon the main avenue for travel across the chasm. It built a good modern trail - the Kaibab Trail, as it is called - from Bright Angel Point to Yaki Point and replaced the steel cable by a fine suspension bridge. Needless to say, it has afforded the writer no little satisfaction in 1925 and again in 1927 to travel over this new and to him almost luxurious route.

