

The South Kaibab Trail from Yaki Point.

Photo Paul Fretheim

CLICK IN IMAGE TO OPEN A 360° PANO OF THIS LOCATION.

Topo Map: Grand Canyon; Coordinates: 36° 06' N - 112° 06' W

The South Kaibab - Bright Angel Loop

by Paul Fretheim

Spectacular – dramatic – magnificent. These adjectives only begin to describe this unparalleled trail which leads from the rim to the river through the grandest part of the Grand Canyon. If you only have time for one trail, the South Kaibab is the one to hike.

If you have a few days, hike down the South Kaibab Trail to Phantom Ranch and then along the river to the foot of the Bright Angel Trail and then up the Bright Angel Trail. Spend a night at Phantom Ranch or the Bright Angel campground and then a second night out at Indian Garden Camp, which is about half way up the Bright Angel Trail. Be sure to hike out to Plateau Point from Indian Garden. The view from Plateau Point is one not to be missed.

History of the Trails

The Bright Angel Trail runs where the Bright Angel Fault bisects the canyon. The rock strata of the canyon are displaced 30 meters, vertically, along the fault, with the land to the west raised above the same layers to east. The fault provides a natural channel for water flowing into the canyon and the flowing water has eroded breaks into the vertical formations of the canyon. Trails through these breaks in the cliffs were used for centuries by the Native people of the Grand Canyon to reach the springs that surface at the lower levels of the canyon and the river below.

The first European settlers in the area of the South Rim of the Grand Canyon were prospectors and ranchers. When they arrived in the latter part of the 19th century, Havasupai Indians were living seasonally at Indian Garden. Indian Garden is located on the Tonto Platform below Grand Canyon Village.

Prospectors used the trail to search for promising ore bodies and to access their claims. Cattlemen and sheep herders used the trail to drive their stock down to graze in the canyon. For the first decade settlers used the trail, from about 1880 until 1890, improvements and repairs to the trail were pretty much a haphazard collection of individual efforts here and there along the trail.



"Big Jim," a Havasupai Indian elder, lived seasonally and grew crops at Indian Garden for many years. In this 1915 photo he is pictured in Emery Kolb's Father's coat.

GRCA #30519

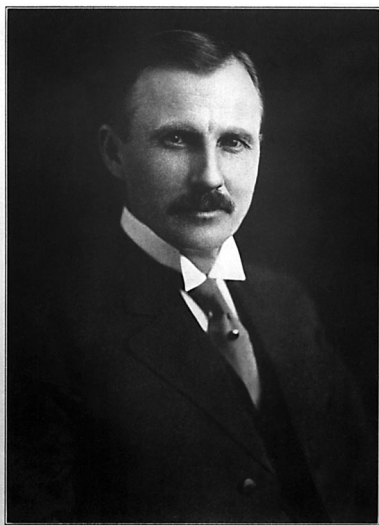
In September, 1890, under the direction of Ralph Cameron, for whom the town of Cameron east of the park is named, the first

organized, pick and shovel efforts were begun to improve the trail from Indian Garden all the way to the rim.

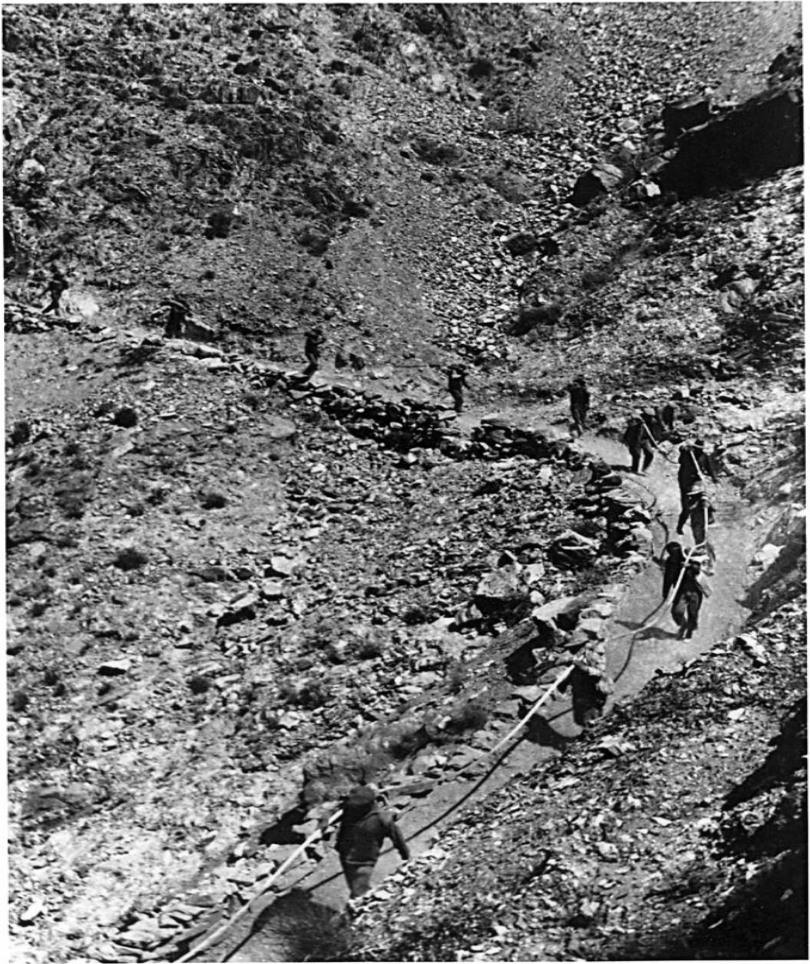
In January, 1991, an associate of Cameron's, Ralph Berry, registered the trail as a Toll Road with Yavapai County. Management was very relaxed, however, and no tolls were charged for many years. Then in 1898, word was received that the Santa Fe Railroad was planning a branch line to the canyon rim and that the railhead would be within a hundred meters of the trailhead. Cameron realized that the right to charge tolls on the trail was a potential gold mine with the railhead to be so close by. He began making plans to provide services to the anticipated flood of tourism that would result from the arrival of the railroad. Cameron proceeded to consolidate the rights to various mining claims and other properties on the rim at the head of the trail, and bought the rights to the Bright Angel Trail Toll Road from his former partners.

Cameron then spent several thousand dollars refurbishing the trail down to Indian Garden and Plateau Point. At Indian Garden he erected several tent cabins and opened his inner-canyon tourist facility he named Indian Garden Camp.

For nearly 30 years there was a constant feud between the Santa Fe Railroad and the preservationist factions of the U. S. Government on one side and Ralph Cameron on the other for control of the Bright Angel Trail. During this time Cameron continued to charge tolls, \$1 for each mounted rider, pedestrians traveled free. Cameron went so far as to become elected to the U. S. Senate as one of the Senators from Arizona to pursue his claims to the trail.



Ralph Cameron owned the right to charge tolls on the Bright Angel Trail for many years.
GRCA Image #17700



In 1928 forty-two Havasupai Indians carried the cables for the South Kaibab suspension bridge down the South Kaibab Trail on their shoulders.

GRCA Image #10111

Finally in 1925, some 6 years after the formation of Grand Canyon National Park in 1919, the Park Service became so exasperated with the situation that they began work on the South Kaibab Trail as

an alternative route to the Colorado River, completely bypassing the Bright Angel Trail and Cameron's tolls by carving The South Kaibab Trail down Cedar Ridge to the Tonto Platform and blasting a series of switchbacks out of solid rock to the bottom of the Inner Gorge just upriver from the mouth of Bright Angel Creek.

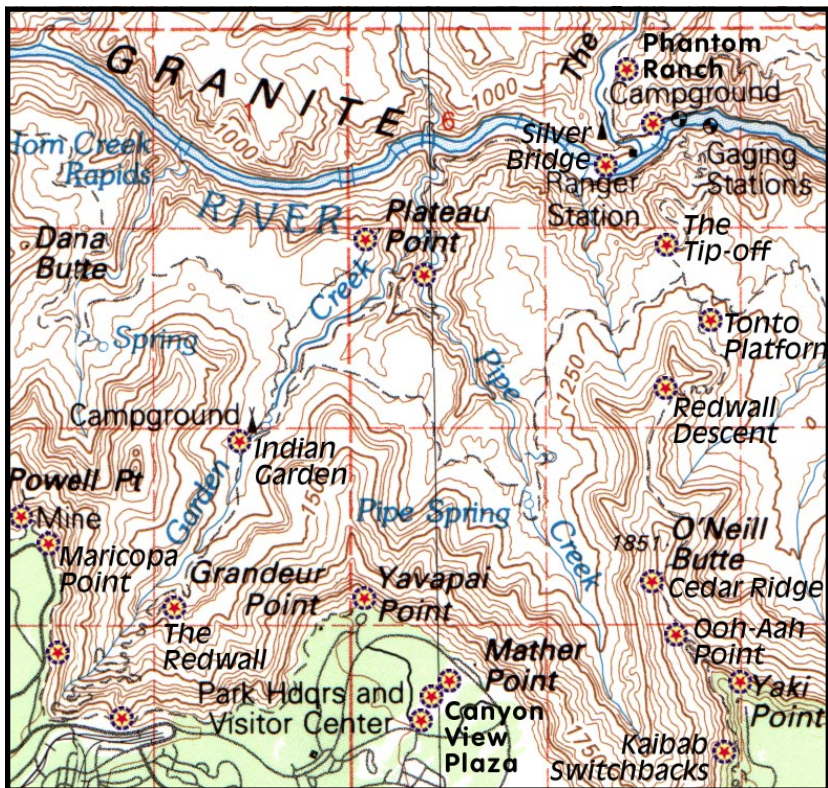
At the foot of the trail a suspension bridge was built across the Colorado River to access Bright Angel Creek and the North Kaibab Trail to the North Rim. The cables upon which the deck of the bridge is suspended are each 168 meters long, 3.8 centimeters in diameter, and weigh 1052 kilograms. Of course the cables had to be delivered from the rim intact, and presented quite a problem, as they could not be loaded on mules. The transportation problem was solved by hiring 42 Havasupai Indians to carry the cables down the South Kaibab Trail on their shoulders. The twisting train of cable and Indians was said to look like some kind of giant centipede coming down the trail. The South Kaibab Bridge, known today as the "Black Bridge" was completed in 1928.

Finally, also in 1928, Ralph Cameron's last efforts to resist take-over of the Bright Angel Trail by the Park Service were overcome and the charging of tolls on the trail ended.

The South Kaibab Trail presents one spectacular vista after from the trailhead near Yaki Point all the way to the river. Most Grand Canyon trails follow old Indian paths down side drainages and other natural breaks in the topography of the canyon. These trails are in enclosed side canyons and, while beautiful, do not offer the incredible panoramic views found all the way down the South Kaibab because of its route down an exposed ridge.

Hiking the South Kaibab Trail

I herniated a disk in my back in the summer of 2000, loading some lumber in to a truck. I had been putting off hiking the South Kaibab - Bright Angel loop because I was concerned about my back, but finally I decided to go do the hike anyway. When I was hoisting my 60 pound pack (VR photography gear is heavy) on my back in the parking lot at the South Kaibab Trailhead in mid-March 2001, I was not sure if I would make it back up on my own power or not, but I was determined to give it a try.



CLICK ON A STAR TO OPEN A PANO OF THAT LOCATION.



The switchbacks near the top of the South Kaibab Trail were icy in mid-March.

Photo Paul Fretheim

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I inquired before leaving on the hike as to what provisions there were for rescuing a hiker from the canyon in the event that someone became injured and could not hike out on their own power.

If you can be carried out on a pack mule, the charge is \$750. If you have to be evacuated by Park Service helicopter, the charge is \$2900. The fee to just go down on a mule and back out is only \$80, so the rescue fee on muleback seemed a little high. I was hoping I would not need to avail myself of the service.

The Coconino Plateau Is Often Snow Covered in March

The first section of the South Kaibab Trail switchbacks down through the Kaibab limestone, which is the uppermost layer of rock on both the North and South Rims of the Grand Canyon where the Colorado has cut through the Kaibab Plateau. The winter Sun does not rise high enough above the rim to shine on this part of the trail.

The trail stays in shadow. The snow which falls on the upper part of the trail is soon packed in to ice by the passage of hikers and mules.

Crampons are required to hike this part of the trail safely when there is snow and ice on the trail. The snow and ice usually have not melted completely from the trail each spring until late March or early April. Each year many people are injured from slips on the ice on this part of the trail. Broken wrists are a common injury as people try to break their fall after losing their footing.

There is no need for this, as you can purchase handy trail crampons that can easily be attached over your hiking boots or shoes at the Fred Harvey General Store at Market Plaza for under \$10. I used them and found them very helpful. Another thing that I would recommend for hiking this trail is hiking poles. I use Leki Extreme poles. They really are a big help.

The Views Open Up

After you descend the switchbacks through the Kaibab formation the South Kaibab straightens out and is a wide, well maintained trail descending at an easy grade along the side slope in the Pipe Creek drainage which is directly west of Yaki Point. Just as the trail drops below the Coconino Sandstone it crosses out onto the Hermit Shale of Cedar Ridge and the entire Grand Canyon is at your feet and surrounds you on all sides as you approach Ooh-Aah Point.

Mule Trains on the Trail

Every morning several mule trains leave Phantom Ranch and climb the South Kaibab to the rim. The first trains are pack trains, followed by the famous mule trains packing tourists on this most spectacular canyon route. From Yaki Point you can watch the mule trains slowly making their way towards the rim along the South Kaibab Trail.

Not far below Ooh-Aah Point the trail winds around the side of the ridge and then drops down in a series of switchbacks to the saddle where the side trail out to the overlook on a point on Cedar Ridge diverges from the main trail. There are hitching posts here and also restrooms. This is where the tourist mule trains stop for lunch on their way to the rim from Phantom Ranch.



A stiff wind was gusting all day as I descended the trail. You can see windblown dust in front of the two girls coming down the trail in this panoramic image from Ooh-Aah Point.

Photo Paul Fretheim

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Cedar Ridge Lookout Makes a Great Day Hike

By the time I reached the junction at the restrooms on Cedar Ridge I was pretty tired, and was just plodding along, putting one foot in front of the other mechanically. I missed the turn for the main trail and the next thing I knew I was out at the point. I was trying not to add any distance to my hike that I could avoid, but once I was out at the point I was glad I went there. The breathtaking view was worth the short extra walk.

The overlook on the point on Cedar Ridge just past the restrooms makes an ideal destination for a day hike. If you have only enough time for a day hike this is the best one to choose. The South Kaibab Trail is well maintained, easy to follow, and has the most spectacular views of any trail in the Park.



The trip to Cedar Ridge makes a perfect day hike.

Photo Paul Fretheim

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The Character of the Trail Changes

After eating lunch I put my pack back on, walked to the main trail and started back down the canyon. The next part of the trail goes along a narrow ridge that leads down through the Supai to the top of the Redwall cliffs. The wind was gusting out of the west with gale force making it a struggle to stay upright. I trudged along, buffeted by the heavy wind. I was glad I had my poles to help me keep steady on my feet.

zthe trail has a more wilderness feel to it after you get below the Cedar Ridge overlook. You see fewer and fewer hikers. The hikers this far down are almost all planning to spend the night in the canyon.

After crossing the ridge down through the Supai, you come to one of the most dramatic sections of the trail, the switchbacks down



Your first glimpse of the river on the South Kaibab comes as you make the descent of the Redwall. One of these hikers lost his balance and was nearly blown over the edge when big gust of wind hit the back of his pack as he was standing at the brink gazing down at the river.

Framed by the natural cut in the Redwall, Wotan's Throne is visible in the distance.

Photo Paul Fretheim

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the sheer cliffs of the Redwall Limestone. On many canyon trails the redwall descent is through places where the cliffs have eroded back to a gentle profile along a drainage or fault line. The Redwall descent on the South Kaibab Trail, however, consists of switchbacks that have been blasted into the solid rock of the Redwall cliffs.

The day I came down the wind was really howling. I was pretty well spent by then and the calves in my legs were starting to feel like someone had been pounding on them for a few hours with a tenderizing hammer. I took off my pack, took out my tripod and other equipment and set up to shoot a panoramic image. You get your first glimpse of the river on your way down the South Kaibab Trail from here.



Below the switchbacks down the Redwall Limestone the trail crosses the open blackbush chaparral of the Tonto Platform.

Photo Paul Fretheim

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After you finish another long set of switchbacks and wind around the Redwall the trail spills out and makes its way gently across the open blackbush chaparral of the Tonto Platform to the edge of the Inner Gorge. This section of the trail crosses the Mauv Limestone, Bright Angel Shale and Tapeats Sandstone before descending into the Vishnu Schist of the Inner Gorge.

Along this stretch of trail Michelle, an eleven year-old girl from Houston, TX who was hiking the South Kaibab - Bright Angel Loop with her father and her older sister, caught up to me and was about to pass. Michelle would have passed me easily, because by now my thighs were also starting to feel like they had recently been tenderized too, but her dad had asked her not to go on ahead of me. Even though it is less than 11 kilometers to Phantom Ranch from the



Below the Tapeats Sandstone the trail drops in a series of switchbacks blasted into the solid rock of the Inner Gorge down to the tunnel leading to the Black Bridge over the Colorado River.

Photo Paul Fretheim

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South Kaibab trailhead on the rim, the continuously steep downgrade can be brutal if you are not in prime hiking condition.

I was too proud to admit that I was about to die, so I kept up a cheerful conversation and pushed ahead a little faster so I wouldn't hold Michelle up too much.

Later I learned that Michelle's father, Winston, works as a flight planning and control engineer. One of the best parts of hiking the South Kaibab Trail is the interesting people you meet along the way.

Before I started creating these interpretive CDs I taught 9-11 year-old children for Seattle Public Schools for several years, and I still very much enjoy the company of kids that age, so it was fun to hike along with Michelle and her family.

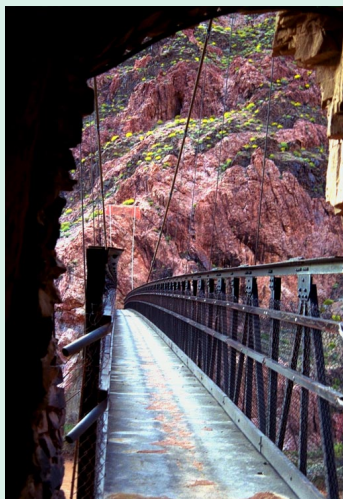


Switchbacks have been blasted into the rock of the Inner Gorge leading down to the Black Bridge. As you can see, the rock of the Inner Gorge is more rose or tan than black.

Photo Paul Fretheim

As it turned out, we had the same itinerary and hiked at about the same pace, so we ended up hiking together off and on for the next two days. They made for interesting and pleasant company.

Winston works very closely with all the astronauts on the Space Station and gets to know them personally as a part of his job. Winston's team sequences the activities and experiments of the space station. When you see a launch on TV, he is one of the people at a computer console, but, evidently because of the important events that Winston's team coordinates such as controlling the life support systems of the spacecraft, Winston's team is in a back room and is not often shown on television.



Brittlebush was in full bloom in the Inner Gorge in mid-March. Note the flowers covering the canyon wall on the far side of the Black Bridge.
(upper right)

Photos Paul Fretheim



The Inner Gorge Was Awash in Flowers

Mid March is a perfect time to do this hike. While there is a bit of ice near the rim, you can easily compensate for that with crampons. The temperatures were very pleasant for hiking, even near the rim. The hottest temperatures at the bottom of the canyon were only in the upper 20s C. (lower 80s F.). Powell and the other early explorers always spoke of the Granite Gorges of the Inner Canyon as dark and forbidding, but I did not find the Inner Gorge was really that way at all. Once the sun was up over the rim it was flooded with sunshine in mid-March and the walls were not really black, but were rose and



Phantom Ranch is a comfortable little cabin resort beneath shady trees at the bottom of the Grand Canyon near the mouth of Bright Angel Canyon.

Photo Paul Fretheim

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magenta and tan. Everywhere the cracks and crevices of the Inner Gorge were overflowing with the brilliant yellow flowers of Brittlebush.

By the time I reached the Tip-off down to the long set of switchbacks leading to the river I knew that my back was going to be OK, as it had been getting better instead of worse. My lack of conditioning was proving to be the biggest problem. Winston and Michelle had passed me by now. I was moving at a snail's pace, but at least I was moving and felt like I would get better once I worked the fat out of my muscles. I was really dragging, but I made it to Bright Angel Campground before dark and was able to lay out my bedroll in the last light of evening.

Phantom Ranch

The next morning I felt better and was ready to resume activities. The first thing I wanted to do was to check out the Phantom Ranch. I had pictured the resort in my imagination for many years. Never having seen a good picture of Phantom Ranch, I really had no idea of what to expect. I had imagined a single, long, low black horse-shoe of a building wrapped around a swimming pool at the edge of the river. It was nothing like what I had pictured. Phantom Ranch really is just an old fashioned cabin resort that happens to be at the bottom of the Grand Canyon. It is strung out along Bright Angel Creek in the shade of some big cottonwoods.



Judy Braun and Randy Haas, archeology students from Northern Arizona University, make an inventory of this Anasazi site at the mouth of Bright Angel Creek.

Powell mentions visiting this site in his journal of the 1869 expedition.

Photo Paul Fretheim

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I spent a couple of hours relaxing at the resort, sitting on the benches, having tea in the cafe, and visiting with the employees and guests. There were people there who hailed from around the globe..

Anasazi Ruins

After spending some time at Phantom Ranch I went back to camp and got my pack ready. Then I started back down the trail to the river. Instead of heading west for the Silver Bridge and the Bright Angel trailhead, I headed east toward the Anasazi ruins near the mouth of Bright Angel Creek.

These stone ruins are remains of an ancient culture that thrived deep in this canyon fastness for hundreds of years, from about 800 AD until 1200 AD. These ruins at the mouth of Bright Angel Creek fascinated John Wesley Powell and were described by him in his [journal of the 1869 expedition](#).

Water Supply for the South Rim

After photographing the ruins I headed west for the Silver Bridge and the Bright Angel Trail beyond. The Silver Bridge was built in 1966 to support a water pipeline across the river.

Because of the porous nature of the bedrock at the South Rim there are no surface streams and little underground water that can be tapped with wells. Because of this, supplying water to Grand Canyon Village and the millions of tourists who visit every year has long been a problem. For many years, from 1901 to 1932, water was brought in by railroad tank car to supply water to Grand Canyon Village.

In 1932 a pipeline was completed to bring water up from Garden Creek at Indian Garden. The Garden Creek water was pumped up 975 meters through 3.5 kilometers of 15 cm diameter steel pipe to the rim. This water supply proved to be adequate for many years.

In the mid 50s new power lines were built to Indian Garden. This stable supply of electricity allowed the National Park Service engineers to install more powerful pumps, which increased pumping capacity, but by 1960, even with the bigger pumps, tourism outpaced the amount of water that could be obtained from Garden Creek, and supply of water via tank car had to be resumed.



You can see the Black Bridge about 1.4 kilometers up river. Mules refuse to cross the grated deck of the Silver Bridge.

Photo Paul Fretheim

[CLICK IN IMAGE TO OPEN A 360° PANO OF THIS LOCATION.](#)

Roaring Springs Solves the Water Supply Problem

There is a group of big springs that feeds Bright Angel Creek from its major tributary canyon, Roaring Springs Canyon. In 1966 the Park Service began construction of a 19.5 kilometer pipeline to bring water from Roaring Springs across the Colorado River to Indian Garden. This pipeline would be built of 20 cm diameter pipe for the first 7 kilometers and 15 cm pipe for the remaining 12.5 kilometers. A 160 meter long suspension bridge had to be built to support the pipeline over the Colorado River. Much of the “pumping” would be provided by the force of gravity, as Roaring Springs, at an elevation of 1750 meters, is 575 meters above Indian Garden. Because Roaring Springs is 575 meters higher than Indian Garden, it takes less electricity to bring water from Roaring Springs to the South Rim than it did to pump Garden Creek water up from Indian Garden, even

though Roaring Springs is 19.5 kilometers farther away! The pressure in the pipeline at the bottom of the canyon is enormous, about 82 atmospheres or 87 kilos per square centimeter!

The Silver Bridge, built as a part of the pipeline project, is used by hikers today to cut 2 kilometers off the distance to the foot of the Bright Angel Trail from Phantom Ranch. Mules, however, continue to use the Black Bridge because the deck of the Silver Bridge is only grated whereas the Black Bridge has a solid, rubber coated steel deck. Mules refuse to cross the Silver Bridge because they can see the rushing waters of the Colorado beneath their hooves through the grated deck and the sight “spooks” them.

It’s about 2 kilomters along the River Trail from the Silver Bridge to the foot of the Bright Angel Trail.

The Devil’s Corkscrew

As soon as you turn left onto the Bright Angel Trail from the River Trail you start to make the long climb to the rim. The switchbacks that take you out of the Inner Gorge are known as the Devil’s Corkscrew. I took my time going up them, with frequent rests and plenty of water breaks and it was not bad, even though my out of shape legs were about as tender as could be by this time. By the next morning things would improve, but I was still in the very sore stage at this point in the hike.

To my surprise I caught up to Winston and his family on the Devil’s Corkscrew. The kids were a little slower on the way up, but they all passed me again when I stopped to shoot the pano of the switchbacks.

I rested for a long time and then packed up my camera gear and started up again. After the climb out of the Inner Gorge on the Devil’s Corkscrew, the trail makes an easy grade along Garden Creek through the Tapeats Sandstone. This part of the trail is through cottonwoods and has the musical accompaniment of Garden Creek as it splashes over cascades and falls along the Tapeats Sandstone above the Inner Gorge.

Along this stretch I again caught up to the family from Houston I had been hiking with off and on since the Tonto on the South Kaibab. Their destination was Indian Garden Campground that night too.



With frequent water breaks I made it up the Devil's Corkscrew pretty easily.

Photo Paul Fretheim

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I was pretty well exhausted when we got to camp. I rolled out my bedroll, ate some trail mix and crashed. Later that night I was awakened by some late arrivals at the campground who were setting up camp noisily in the campsite directly adjacent to mine. I didn't mind the noise so much as it was a moonless night and black dark by then. I understood that it would be a little tough to set up camp in the dark if you weren't used to it. But they kept yelling back and forth to each other even when they had their camp set up and were just cooking dinner. I was in pretty bad shape after two days of tough hiking, and I guess my patience was wearing thin.

"SHOULD WE HAVE BEEF STROGANOFF OR NOODLES!" A FEMALE VOICE YELLED.

"FOR CH - - - S SAKES SHUT UP!" I YELLED BACK.



Indian Garden Campground.

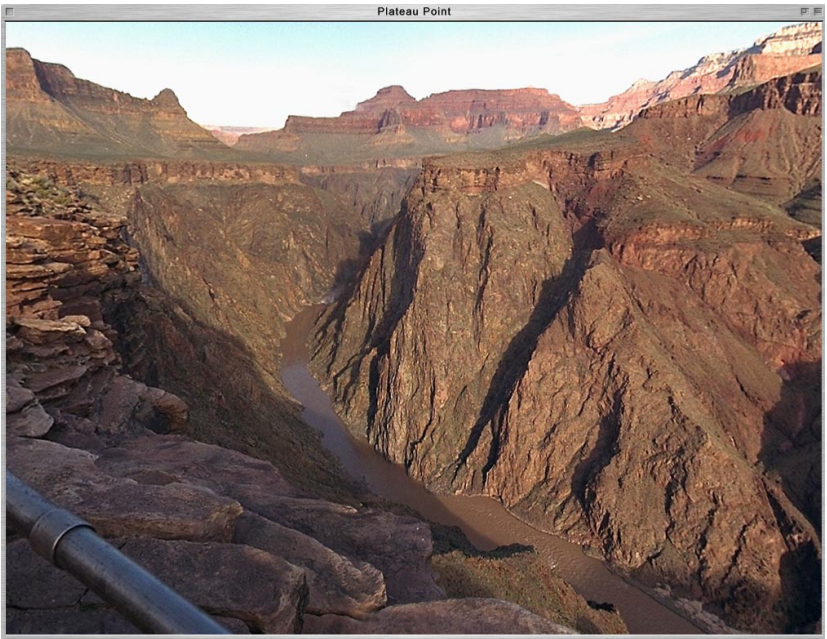
Photo Paul Fretheim

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Finally they seemed to realize that there were people trying to rest all around them in the darkness and my neighbors became reasonable quiet. At least enough so I could drop back into my coma.

The next morning I awoke at dawn, feeling pretty refreshed. I looked down on the trail to Plateau Point many times when I have visited the Grand Canyon and have long wondered what the view must be like from there. I had watched the Park Service evacuate a sick employee from Phantom Ranch the morning before with their Medivac helicopter and I was sure by now that I was going to be OK and would not need a similar rescue. I decided to add the 2 kilometers, each way, to Plateau Point and back to my hike.

Carolyn, Winston's colleague from the Space Center and I had talked about hiking out to Plateau Point as we hiked along the day before, so I walked over to their campsite first to see if she would



Plateau Point in early morning light in March.

Photo Paul Fretheim

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like to join me. Winston said she had already left, so, I walked out to the Point, figuring I would see her along the way.

I got to Panorama Point but did not cross paths with Carolyn. The views were spectacular and I realized I would have to come back and photograph the view from there again in better light. I set up and shot a pano in the morning light and then walked back to camp.

When I arrived I could see that my noisy neighbors were up. One of them in particular was interesting, to say the least. He must have been about 6' 3" (nearly 2 meters), weighing in at about 235 lbs. (over 100 kilos) He looked like he could bench press about 200 kilos. and must have been doing so on a daily basis. He had some sort of Oriental looking dragon like swirling black tatoos that covered his bulging arms from his shoulders to his fingertips and, of special interest, one of those evil looking, chromium plated attack bayonets



- KAIBAB LIMESTONE
- TOROWEAP FORMATION
- COCONINO SANDSTONE
- HERMIT SHALE
- SUPAI GROUP
- REDWALL LIMESTONE
- MAUV LIMESTONE
- BRIGHT ANGEL SHALE
- TAPEATS SANDSTONE
- VISHNU SCHIST

The layers of the Grand Canyon.
Photo Paul Fretheim

with the 4 hole stab grip and a 14" blade in a quick-draw holster strapped to his thigh.

"I wonder if he knows I was the one who swore at his girlfriend and told her to shut up last night when she was making dinner plans?" I thought. "Maybe I can get out of here before I am noticed."

I stuffed everything into my pack and dragged it over to Winston and Carolyn's camp to see what had happened to her. As it turned out, she had left hours before when I was still asleep, mistaking the glow in the eastern sky of approaching moonrise, which came about 4 a.m., for approaching sunrise. I found out that she had been bathing in the stream when I came by, so she hadn't called out to me.

We all got our gear ready. Winston made sure his daughters were organized, and we started out for the rim.

Winston had hiked the trail before. "It's a piece of cake from here," he assured us.

It was about 9:00 a.m. and we had all day. I wasn't so sure the 1000 meter climb was going to be a piece of cake for me, but I knew if would be able to plod steadily along at my usual snail's pace I would eventually make it out to the rim.

Water is available at Indian Garden, even in March, but the other drinking water sources between Indian Garden and the rim are shut off until May because of the danger of freezing, so we were all pretty heavily loaded with water.

Not long after leaving the campground I stopped to take some pictures. As slow as I was I didn't expect to catch my friends again, but as it turned out, we kept leapfrogging each other all day. Maybe I was starting to get back in shape already. My legs were hurting less than the day before anyway.

From Indian Garden to the rim is a long haul. You gain 1000 meters of elevation in 6 kilometers of hiking. The Bright Angel Trail is a masterpiece of trail engineering and the grade is fairly constant the entire way, never exceeding 17%. Nonetheless, it is a long hill to climb, and hikers should allow at least 5-6 hours for the climb if they have heavy packs.



This pano was shot looking back down the Bright Angel Trail from the foot of the Redwall. It was taken on a later trip in early May when the green of spring had moved further up the canyon.

Photo Paul Fretheim

Be sure to memorize the names of the rock layers before you go, or bring a guide to the layers of the canyon with you. One of the things that makes this hike so special is the ability to monitor your progress by checking the colored layers on the far wall of the canyon as you climb. When you leave Indian Garden you are in the Bright Angel Shale of the Tonto Platform. Then you cross the Mauv Limestone, Redwall Limestone, Supai Group, Hermit Shale, Coconino Sandstone, Toroweap Formation, and Kaibab Limestone in sequence as you make progress toward the rim. The section through the Supai has more vertical gain than any of the other layers, and it seems to go on forever.

When you finally get to the contact zone between the red Hermit Shale and the white vertical cliffs of the Coconino Sandstone above the Hermit, watch for the displacement vertically of the rock



Looking down on the Bright Angel Trail and across the Grand Canyon.

Photo Paul Fretheim

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layers along the Bright Angel Fault. It is pretty easy at this spot to see that the contact between the Coconino Sandstone and the Hermit Shale is about 30 meters higher on the west side of the fault, (that is to your right on the way up), compared to the east side.

Once you reach the Coconino, the lower of the big white bands just below the rim, you are nearly to your destination. Only the Toroweap and Kaibab remain after the Coconino, and they go by pretty fast compared to the Supai.

Finally the rim is achieved right at Grand Canyon Village. It's a long and tiring hike, but well worth the effort. On my hike I actually got the added bonus of healing my back problems by getting the exercise I needed carrying a heavy pack over a long trail.

THE END