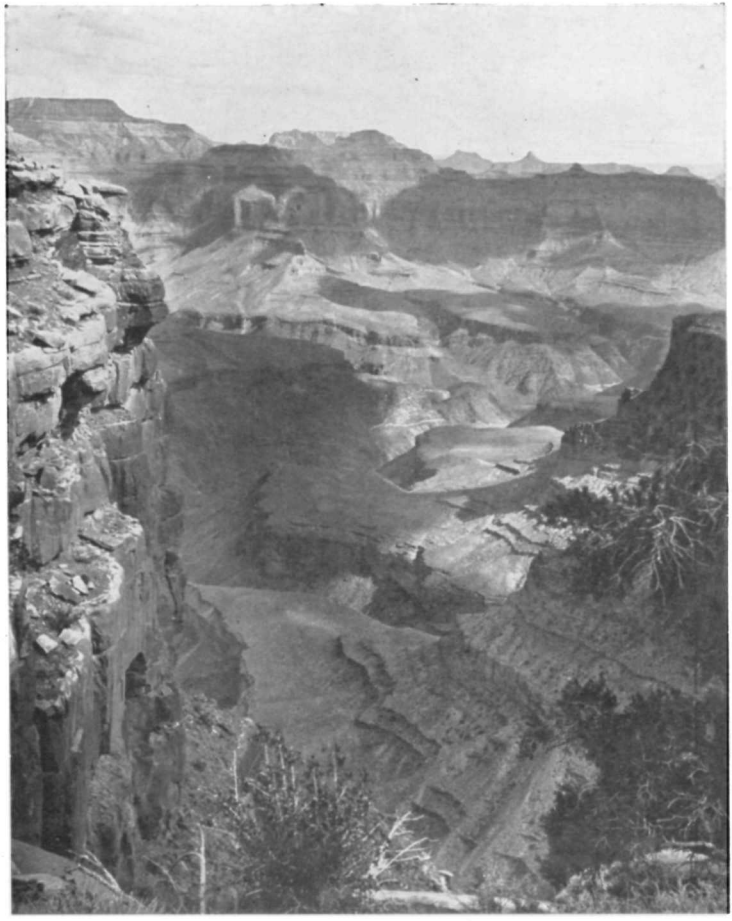


IN AND AROUND THE GRAND CANYON

BY GEORGE WHARTON JAMES

IN AND AROUND THE GRAND CANYON



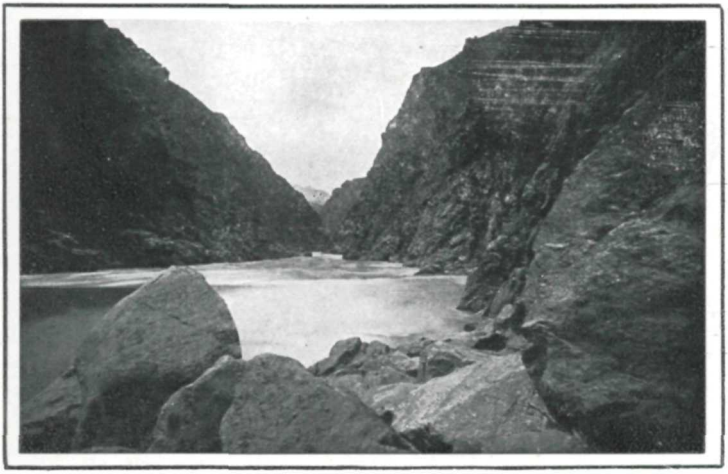
TEMPLES AND BUTTES TO THE EAST FROM THE GRAND SCENIC DIVIDE.

IN & AROUND THE GRAND CANYON

THE GRAND CANYON OF THE COLORADO RIVER IN ARIZONA

By GEORGE WHARTON JAMES

WITH NUMEROUS ILLUSTRATIONS



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TO

JOHN WESLEY POWELL

SCHOLAR, WARRIOR, SCIENTIST, GENTLEMAN, FRIEND

DIRECTOR FOR FOURTEEN YEARS OF THE U. S. GEOLOGICAL SURVEY
ORGANIZER AND DIRECTOR FOR TWENTY YEARS OF
THE U. S. BUREAU OF ETHNOLOGY
WHOSE EXPLORATIONS OF THE CANYONS OF THE COLORADO IN THE
INTERESTS OF SCIENCE CONFIRM HIM ONE OF THE BRAVEST,
MOST HEROIC, AND DARING EXPLORERS
OF THE CENTURY

PREFACE

THIS book is a growth of ten years' visits to the most sublime spectacle of earth. Hence it is not an ordinary book of hasty travel and hurried description, but is the accumulated result of renewed visits and many explorations.

I desire that it should stimulate the interest of those who know but little of the wonders of the Grand Canyon; and serve as a useful handbook to the Canyon traveller before, during, and after his trip.

There are far more trails into the heart of the Grand Canyon region than many professed experts even suspect. On the south walls there are ten, and another ten or more into the fascinating Cataract Canyon where dwell the Havasupai Indians. The ten trails of the Grand Canyon region, beginning at Lee's Ferry eastwards, and continuing southwest to Diamond Creek, are as follows:

1. Lee's Ferry. Reached by wagon from Winslow, Canyon Diablo, Flagstaff, and other points on the Santa Fé Railway.

2. The Marble Canyon Trail, not far from the Shinumo Altar. This trail was used by Navahos and Paiutis for many years. It was recently blown up with dynamite and rendered impassable by cattle

men, to prevent cattle thieves from crossing the river with stolen stock.

3. The old Hopi (Moki) Salt Trail into the Little Colorado and Grand Canyons. Reached from the Hopi villages.

4. The Tanner Trail, a few miles west of the Little Colorado River. This trail can now be reached on horseback or by conveyance from the terminus of the Grand Canyon Railway.

5. The Red Canyon Trail. This was the trail used in the years 1895–98 by the tourists who were taken to the Canyon by stage from Flagstaff. It was incorrectly called "the new Hance Trail."

6. The Old Trail, incorrectly known as "the Hance Trail." This was the first trail used by tourists taken to the Canyon from Flagstaff, prior to the opening of the Red Canyon Trail. As elsewhere explained, it was in use by the Havasupai Indians for untold centuries. Hance improved it and located upon it. It is now washed out and practically inaccessible. The scenery about the head of this trail has become so familiar that it is fully pictured herein.

7. The Grand View Trail. This is the trail to which tourists were taken from Flagstaff in the years 1897–99. It was and is a great improvement in every way over the Red Canyon and Old Trails, and will still afford great satisfaction to the tourist who desires to visit it. Stages or other conveyances run from the terminus of the Grand Canyon Railway, or the horseback rider will find it an

easy ride to go over the trail along the rim from the head of the Bright Angel Trail to the Grand View Trail.

8. The Bright Angel Trail. This is the trail reached by the Grand Canyon Railway. The hotel is located at the terminus of the line and within a few hundred feet of the rim. Its scenic Points are Hopi, Cyclorama, and O'Neill, — the former being a vast promontory thrusting its nose into the heart of the Canyon to the west of the hotel, the latter being within half a mile of the hotel to the east.

9. The Mystic Spring Trail, owned by Mr. W. W. Bass, whose Canyon experiences I have deemed worthy of extended notice in these pages. This is twenty-two miles west of the Grand Canyon Railway terminus, and is reached by regular stages, special conveyance, or horseback.

10. The Peach Springs Road to the mouth of Diamond Creek and the Colorado River. Reached from Peach Springs on the Santa Fé Railway.

In the following pages I shall describe — briefly or otherwise — and picture all these roads and trails, except numbers two, three, and four, which are now practically inaccessible.

For ten years the only method of travel to the Grand Canyon was by stage, from Flagstaff, Williams, or Ashfork. While the major part of the visitors journeyed from Flagstaff, I have described the less known route from Ashfork. Now, the general visitor leaves the Santa Fé transcontinental line at Williams, and, over the tracks of the Santa Fé & Grand Canyon Railway, crosses the Painted

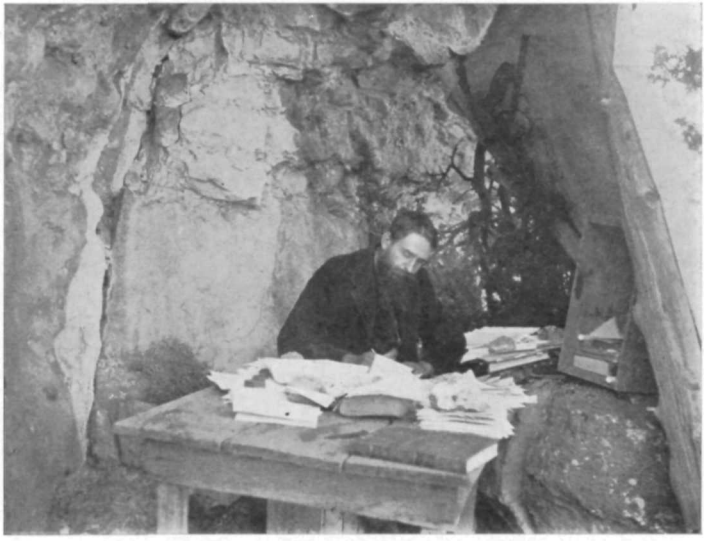
Desert in a parlor or Pullman car as herein described.

My preference for the simple and unaccented English "canyon" over the Spanish accented "cañon" is so marked that I can but characterize as "wilfully perverse" those who persist in burdening our already overweighted language with a new and foreign accent for which there is no necessity.

After consultation with Major J. W. Powell, former Director, and the Hon. C. D. Walcott, present Director of the United States Geological Survey, I have named, with their signal approval, the great promontories or points of the south wall of this peerless gorge after the Indian tribes of the region; and have given the names of the noted earlier and later explorers of our Southwest, and of the great geologists of the world, to those marked interior features of the Canyon seen from popular points of view. To do this it has been necessary to change four names. These were Bissell, Moran, Grand View, and Rowe Points, which have been called Comanche, Ute, Paiuti, and Hopi Points, to correspond with Havasupai, Mohave, Chemehuevi, Wallapai, and Apache Points farther west and south.

And now a few words as to where this book was written and compiled. In as many and varied places, almost, as ever book was transcribed on paper. While stopping for a few moments' rest in descending trails; in the darkness of the night in the depths of the Canyon; on the driver's seat or inside of the jolting stage; stretched on a roll of blankets in a springless wagon; in the heart of a

fierce storm on the Painted Desert; shivering, wet through, at night in a side gorge of the Bright Angel Trail; wearied out, waiting for water and a horse after an exhausting three days in Trail Canyon; stretched on the sand, with the fierce roar of the demons of the Colorado River in my ear;



THE AUTHOR AT WORK AT HIS CAMP IN THE GRAND CANYON.

under the trees at Lee's Ferry; baking in the sun near Willow Spring; on the summit of the San Francisco Mountains; on Williams Mountain, Sunset Peak, or in the deepest depths of the Colorado waterway; on the plateaux above, or by the side of Havasu — the blue water — of Cataract Creek; on foot and on horseback, in bed and in cave, — anywhere, everywhere, whenever a scene demanded

description or a thought suggested written expression, there a part of this book was born.

And here where I am completing and finally arranging it — what book ever had such a composing room! Under the shelter of an overhanging rock with pinion boughs piled up and canvas stretched to completely exclude the sun all day; the purest air of earth freely circulating around me, and the bluest sky of earth ever above me; below, the brink of the greatest gorge known to man, and with its wonders daily and nightly spread out before me; Huethawali, Le Conte Plateau, Mystic Spring Plateau, Dutton Point and Powell Arch, and the great mural fronts of the north wall ever confronting me; now and again aroused by strong breezes blowing through the pinion and juniper trees that dot the sloping talus at my feet; anon thundered and rained upon in the fierce and sharp storm, but, generally, in an absolute stillness that can be felt and that the poet must have experienced when he wrote: —

> "Few are the spots so deathly still,
> So wrapt in deep eternal gloom;
> No sound is heard of sylvan rill,
> A voiceless silence seems to fill
> The air around this rocky tomb."

My paper-weights are pieces of limestone, my shelf a rude pine box, my side desk a huge boulder, my table made in rough camp style, with my seat — a packing box — at one end, and my blankets stretched on the solid rock at the other end, — this is where, and these the circumstances under which,

the tangled threads of description of the past decade are being woven into the warp and woof of connected story. Hence, whatever of reprobation or commendation this book may call forth, it possesses at least one virtue, and that is, of being the highest and best endeavor of which the author is capable, to present truthfully the scenes described under their own inspiration.

GEORGE WHARTON JAMES.

AUTHOR AMPHITHEATRE, BASS CAMP,
GRAND CANYON, August, 1899.

INTRODUCTION

FOR magnificent majesty, gorgeous coloring, and multiplicity of sculptured forms the Grand Canyon of the Colorado River has no rival in the world. Three hundred and fifty years ago Cardenas and his band of Spanish explorers, sent by the conquistador Coronado from Zuni, tried to reach its deeply embedded river, but wearily gave up the attempt. Many, in the years since, have stood upon its awful brink and gazed upon the tiny silvery thread below, and have endeavored to reach it, — generally in vain. Lieutenant Ives of the United States Corps of Topographical Engineers tried to make his way into the heart of the mystical Canyon from the open river of the desert below, but was driven back, baffled and disheartened, by the fierce and raging stream. Then he started to explore it from above, and, after many days of wearisome journeyings, wrote: —

"This region can be approached only from the south, and after entering it there is nothing to do but to leave. Ours has been the first, and will doubtless be the last party of whites to visit this profitless locality."

In 1871 Captain George M. Wheeler, with a band of able assistants and brave men, ascended far above the spot from which Ives had been driven, and in thirty-three days of frightful hardship and incredible

risks and dangers explored the mouth of the Grand Canyon up as far as Diamond Creek.

In the mean time Major John Wesley Powell was making in 1869–71 those full and exhaustive explorations and accomplishing that never sufficiently lauded trip of his down the waters of the Colorado that changed our knowledge of the canyons of this great waterway from fragment and conjecture to completeness and certainty.

These and other explorations are more fully described in later chapters, mainly in the explorers' own vivid and fresh words, and published largely in stern government records. They are more thrilling than the wildest romances, and exhibit exciting pictures of men who, in the interests of science and knowledge, quietly and calmly faced the most frightful dangers and risked awful death so often that they became unconscious of their sublime heroism. To read and picture such scenes, powerfully and healthfully stimulates the soul, and, in these days of money-getting and militarism, it is well not to overlook the glorious deeds of our "heroes of peace."

In the arrangement of this book I have first of all described the Colorado River and its series of connecting canyons. Then, after allotting due space to condensed narrations of the various exploring parties, I have described the stage and railway rides to the Canyon from the main line of the Santa Fé route. After recording a few of the "First Impressions" many visitors have written, I ask the reader to accompany me to various portions of the "rim" of the Canyon and make the descent down

all the easily accessible trails to the river, viz., The Grand View, Bright Angel, Mystic Spring, and Peach Springs Trails, after which several chapters are devoted to the trails more difficult of access; then to the Cataract or Havasu Canyon; the Havasupai Indians; the waterfalls and caves of their canyon; the Botany and Geology of the Grand Canyon; with a final chapter on "Religious and other Impressions" felt and enjoyed at various times while under the Canyon's spell.

If the record of the daring explorations of Ives, Powell, Wheeler, Stanton, and others, and of my own wanderings and adventures in this wondrous region in the heart of the United States, excites in the minds of my readers even a small part of my own enthusiasm, my years of toil, trial, deprivation, and accompanying pleasures will find most adequate and satisfactory complement.

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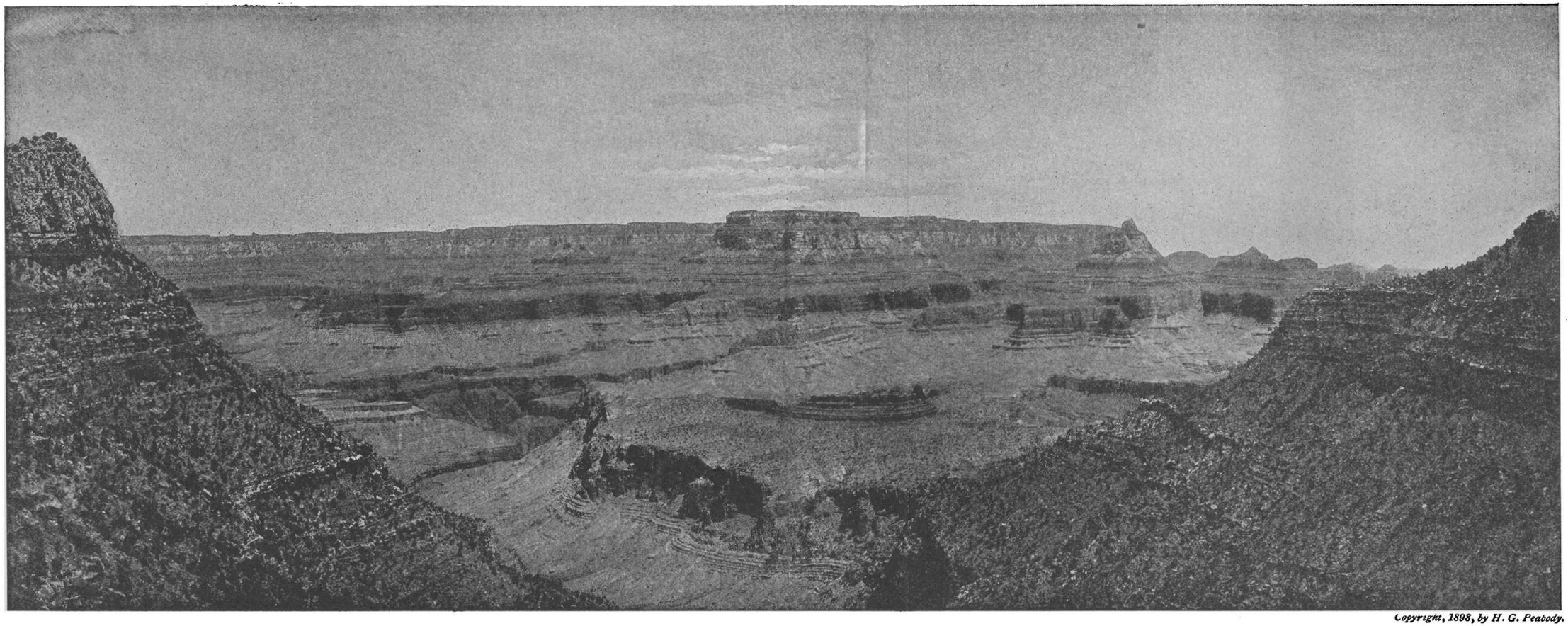
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ACROSS THE CANYON, FROM GRAND VIEW (PAIUTI POINT)—NEWBERRY TERRACE AND VISHNU TEMPLE WELL SHOWN.

IN AND AROUND the GRAND CANYON

CHAPTER I

THE COLORADO RIVER AND ITS CANYONS

THE Colorado River is unlike any other great river in the world. For present purposes it seems to be almost useless. In a large part of its course it drains an arid country which needs every drop of water thus carried away. It is, therefore, a vampire curse instead of a fructifying blessing. It is inaccessible to the general traveller, who, standing on its banks and gazing upon its far-away stream, yet perishes with agonizing thirst. No ordinary boat, whether propelled by oars, steam, or electricity, can live and either ascend or descend its turbulent waters. Practically no fish are found in its undisturbed solitudes. Though the country through which it flows is dreadfully arid, it is so unaccommodating as to refuse to be piped or pumped by any simple method to relieve the Sahara above.

Though its carrying power is enormous, no commerce can place useful loads upon its rudely tossing back. Though its electric potentiality is great, it refuses to yield a single volt for any useful purpose. It is the wild, untamed, ferocious stallion of rivers, proud, self-willed, impetuous,

powerful, wholly unrestrained and unrestrainable, yet attractive, grand, and majestic.

And it is well that man finds such intractable forces in nature. It is good for him to be held in check occasionally. It is not beneficial for the human to imagine that he is so divine that nothing earthly can withstand him. It is good to be made to bow and to wait.

This great river, named by the Spaniards "Colorado," or the "Red," either because of the color of its water or the striking red which is the predominating color of its walls, has its rise in the far-away snowy mountains of Utah, Wyoming, Colorado, and New Mexico. Its upper branches are the Green and the Grand rivers. The former of these, which is the upper continuation of the Colorado, has its source in Alpine lakes, fed by the everlasting snows of the mountains. It heads approximately in latitude 43° 15′ and longitude 109° 45′.

"Thousands of these little lakes, with deep, cold, emerald waters, are embosomed among the crags of the Rocky Mountains. These streams, born in the cold, gloomy solitudes of the upper mountain region, have a strange, eventful history as they pass down through gorges, tumbling in cascades and cataracts, until they reach the hot, arid plains of the Lower Colorado, where the waters that were so clear above, empty, as turbid floods, into the Gulf of California, in latitude 31° 53′ and longitude 115°." — J. W. POWELL.

There are two distinct portions of the basin of the Colorado, — the lower third and the upper two-thirds. This upper portion rises from about four to eight thousand feet above the level of the sea,

and is set about with mountains ranging upwards to over fourteen thousand feet.

"All winter long, on its mountain-crested rim, snow falls, filling the gorges, half burying the forests, and covering the crags and peaks with a mantle woven by the winds from the waves of the sea, — a mantle of snow. When the summer sun comes, this snow melts, and tumbles down the mountain-sides in millions of cascades. Ten million cascade brooks unite to form ten thousand torrent creeks; ten thousand torrent creeks unite to form a hundred rivers beset with cataracts; a hundred roaring rivers unite to form the Colorado, which rolls a mad, turbid stream, into the Gulf of California." — J. W. POWELL.

Measuring the distance from the head of the Green River, in the Wind River Mountains, to the mouth of the Colorado River in the Gulf of California, the whole length of the stream is about two thousand miles.

"The area of country drained by the Colorado and its tributaries is about eight hundred miles in length, and varies from three to five hundred in width, containing about three hundred thousand square miles, — an area larger than all the New England and Middle States, with Maryland and Virginia added, or as large as Minnesota, Wisconsin, Iowa, Illinois, and Missouri." — J. W. POWELL.

It will readily be seen that these waters, dashing down to the sea, laden with rock débris, possess a power of corrasion far in excess of any ordinary river, and, as a result, each of these upper and side streams, as well as the Colorado itself, cuts deeper, and deeper, and deeper still into the rocks through which lie their beds, until their sides are towering

cliffs of solid rocks. And it is to these deep, narrow gorges that the name of *canyons* has been given.

"For more than a thousand miles along its course, the Colorado has cut for itself such a canyon; but at some few points, where lateral streams join it, the canyon is broken, and narrow, transverse valleys divide it properly into a series of canyons." These are all named from some distinctive feature possessed by each, such as Horseshoe Canyon — "where the river takes a course directly into the mountain, penetrating to its very heart, then wheels back upon itself, and runs out into the valley from which it started only half a mile below the point at which it entered, thus forming an elongated letter U, with the apex in the centre of the mountain;" Whirlpool Canyon; Split Mountain Canyon; Flaming Gorge; Canyon of Desolation; Labyrinth Canyon; Stillwater Canyon; Cataract Canyon; Glen Canyon, and Marble Canyon; and last and greatest, and most wonderful of all, THE GRAND CANYON.

The Grand Canyon begins at the mouth of the Colorado Chiquito (the Little Colorado) and terminates at the Grand Wash, a distance of two hundred and seventeen and a half miles; and were it not separated from the Marble Canyon above by the narrow canyon valley of the Little Colorado, it would be sixty-five and a half miles longer, and thus become possessed of additional grandeur.

"The name, the Grand Canyon, has been repeatedly infringed for purposes of advertisement. The Canyon of the Yellowstone has been called 'The Grand Canyon.' A more

flagrant piracy is the naming of the gorge of the Arkansas River in Colorado 'The Grand Canyon of Colorado,' and many persons who have visited it have been persuaded that they have seen the great chasm. These river valleys are certainly very pleasing and picturesque, but there is no more comparison between them and the mighty chasm of the Colorado River than there is between the Alleghanies or Trosachs and the Himalayas.

"Those who have long and carefully studied the Grand Canyon of the Colorado do not hesitate for a moment to pronounce it by far the most sublime of all earthly spectacles. If its sublimity consisted only in its dimensions, it could be sufficiently set forth in a single sentence. It is more than two hundred miles long, from five to twelve miles wide, and from five thousand to six thousand feet deep. There are in the world valleys which are longer and a few which are deeper. There are valleys flanked by summits loftier than the palisades of the Kaibab. Still the Grand Canyon is the sublimest thing on earth. It is so not alone by virtue of its magnitudes, but by virtue of the whole — its *tout ensemble.*

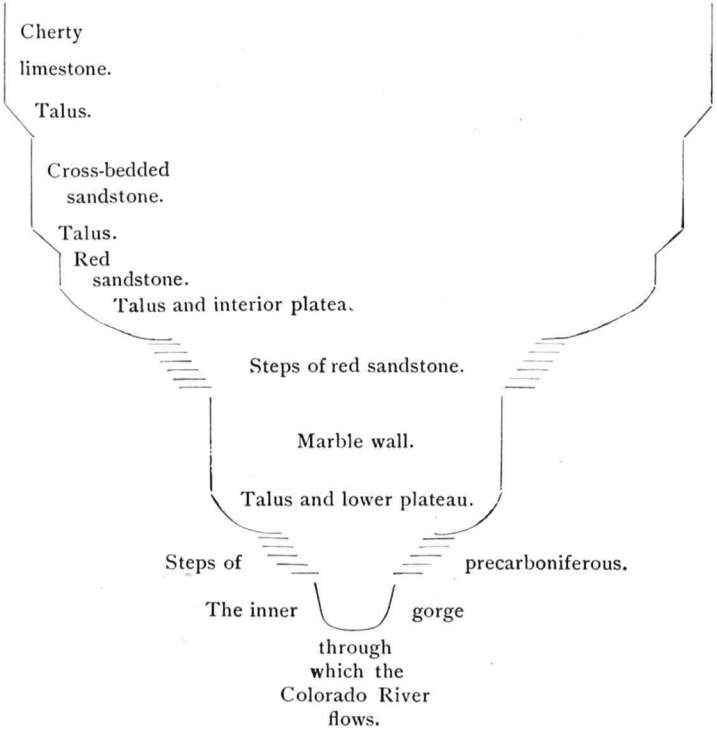
"The common notion of a canyon is that of a deep, narrow gash in the earth, with nearly vertical walls, like a great and neatly cut trench. There are hundreds of chasms in the Plateau Country (the country drained by the Colorado River) which answer very well to this notion. Many of them are sunk to frightful depths and are fifty to a hundred miles in length. Some are exceedingly narrow, as the canyons of the forks of the Virgen, where the overhanging walls shut out the sky. Some are intricately sculptured, and illuminated with brilliant colors; others are picturesque by reason of their bold and striking sculptures. A few of them are most solemn and impressive by reason of their profundity and the majesty of their walls. But, as a rule, the common canyons are neither grand nor even attractive upon first acquaintance. They are curious and awaken interest as a new sensation, but they soon grow tiresome for want of diversity, and become at last

mere bores. The impressions they produce are very transient because of their great simplicity and the limited range of ideas they present. But there are some which are highly diversified, presenting many attractive features. These seldom grow stale or wearisome, and their presence is generally greeted with pleasure.

"It is perhaps in some respects unfortunate that the stupendous pathway of the Colorado River through the Kaibabs was ever called a canyon, for the name identifies it with the baser conception. But the name presents as wide a range of signification as the word 'house.' The log-cabin of the rancher, the painted and vine-clad cottage of the mechanic, the home of the millionaire, the palaces where parliaments assemble, and the grandest temples of worship are all 'houses.' Yet the contrast between St. Mark's and the rude dwelling of the frontiersman is not greater than that between the chasm of the Colorado and the trenches in the rocks which answer to the ordinary conception of a canyon. And as a great cathedral is an immense development of the rudimentary idea involved in the four walls and roof of a cabin, so is the chasm an expansion of the simple type of drainage channels peculiar to the Plateau Country. To the conception of its vast proportions must be added some notion of its intricate plan, the nobility of its architecture, its colossal buttes, its wealth of ornamentation, the splendor of its colors, and its wonderful atmosphere. All of these attributes combine with infinite complexity to produce a whole which at first bewilders and at length overpowers." — C. E. DUTTON.

A canyon indeed it truly is, but entirely different from what all visitors expect to see. It is not a deep, narrow, gloomy gorge, into which the sun fails to shine even at midday. It is, in reality, a series of canyons one within and below the other. Picture one canyon, a thousand feet deep and ten or twelve miles across; below this, another canyon, but two miles

less in width and a thousand feet deeper than number one; then, still another, two thousand feet deeper and four miles narrower, followed by yet another, deeper still and more miles narrower, until the inner



CRUDE SKETCH OF CANYON OUTLINE AS SEEN FROM PAIUTI, HOPI, OR HAVASUPAI POINTS.

gorge of granite is reached, through which the roaring river flows, and you will have a better idea than ever before.

With these descriptions in mind the accompanying crude outline sketch of the Canyon, as

seen from Paiuti, Hopi, or Havasupai Points will become perfectly clear. On the "rim" is a stratum of cherty limestone about six hundred feet thick. At its base the débris that has fallen from the face of the cliff forms a sloping talus, which leads to the edge of a stratum of cross-bedded sandstone, also about six hundred feet thick. Below this is the fiery red sandstone that leads to the upper plateau. Then, steps of an earlier deposit of red sandstone descend to the marble or red-wall limestone, — as Dutton calls it, — at the base of which there are more taluses and another plateau sloping towards the subcarboniferous rocks, which are superposed upon the archæan schists, commonly called granites, of the "inner gorge," through the dark depths of which the river wends its winding way.

The Grand Canyon District, which lies in the arid region of southern Utah and northern Arizona, contains an area which is roughly estimated at from thirteen thousand to sixteen thousand square miles, or about the size of the State of Maryland. In this district there are, in less than five hundred miles, five hundred and twenty falls, cataracts, and rapids. This district is arbitrarily divided into various canyons as before stated.

"Cataract and Narrow Canyons are wonderful, Glen Canyon is beautiful, Marble Canyon is mighty; but it is left for the Grand Canyon, where the river has cut its way down through the sandstones, the marbles, and the granites of the Kaibab Mountains, to form those beautiful and awe-inspiring pictures that are seen from the bottom of the black granite gorge, where above us rise great wondrous mountains of bright red sandstone, capped with cathedral

domes and spires of white, with pinnacles, and turrets, and towers in such intricate form and flaming colors that words fail to convey any idea of their beauty and sublimity." — ROBERT BREWSTER STANTON.

It is interesting here to quote a few lines on the Colorado River from the gallant "Pathfinder," John C. Frémont. He says, in "Memoirs of my Life": —

"Three hundred miles of its lower part, as it approaches the Gulf of California, is reported to be smooth and tranquil; but its upper part is manifestly broken into many falls and rapids. From many descriptions of trappers, it is probable that in its foaming course among its lofty precipices it presents many scenes of wild grandeur; and though offering many temptations, and often discussed, no trappers have been found bold enough to undertake a voyage which has so certain a prospect of a fatal termination. The Indians have strange stories of beautiful valleys abounding with beaver, shut up among inaccessible walls of rock in the lower course of the river, and to which the neighboring Indians, in their occasional wars with the Spaniards, and among themselves, drive their herds of cattle and flocks of sheep, leaving them to pasture in perfect security."

A singular geographical fact is connected with the Grand Canyon which well serves to illustrate the folly of some legislative boundary makers.

"The Grand and Marble Canyons cut the northwestern corner of Arizona completely off from the rest of the Territory. Except by Lee's Ferry, and the long hot road which leads to it, or by a far western route, this corner is inaccessible from the south. It looks small enough on the map, but it is rather larger than the State of Connecticut, and, save for a few scattered cattle-shacks, has no human habitation." — T. MITCHELL PRUDDEN.

If papers are to be served upon any person, taxes assessed, or jurors summoned from this sliced-off portion of Arizona, the sheriff or his deputy must ride from Flagstaff to Lee's Ferry, and then out over the Buckskin Mountains upon the Kaibab ere he can discharge his duty. To assess taxes costs more than they amount to. When the legislative bodies of Arizona and Utah are composed of intelligent and thinking men this senseless man-made boundary-line will be abolished, and that of the Almighty — the great chasm of the Colorado River — stand in its ordained relationship between these two domains.

CHAPTER II

EXPLORATIONS FROM THE TIME OF THE SPANIARDS (1540) TO MAJOR J. W. POWELL (1869)

IN less than fifty years after the landing of Columbus on the shores of the Western Hemisphere, Spanish explorers and missionaries were travelling upon the Colorado River, following its course a long way from its mouth, reaching it at various points, and even visiting it on the east side of its junction with the Colorado Chiquito, — the Little Colorado, — which, to this day, is one of its most inaccessible points.

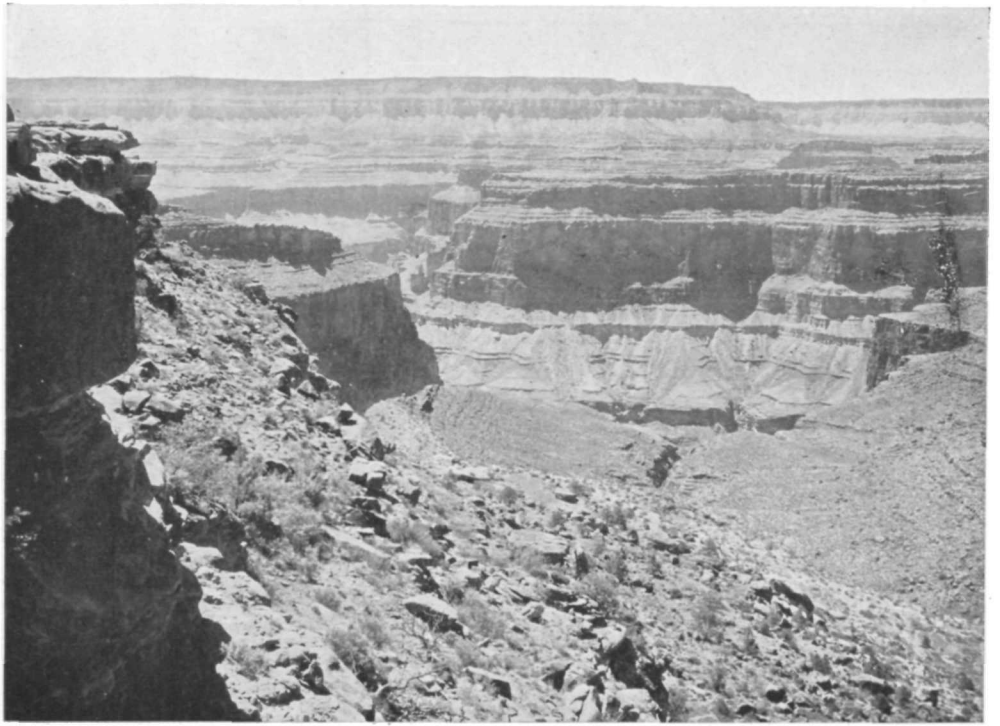
These Spanish explorations were largely the result of that never to be forgotten first transcontinental journey, made on foot by Don Alvar Nuñez Cabeza de Vaca, the unfortunate treasurer of the ill-fated expedition of Panfilo de Narvaez to the coast of Florida. The stories of what he saw and heard aroused the viceroy of New Spain (Northern Mexico) to send out a preliminary reconnoissance party under the direction of a trustworthy Franciscan friar, Marcos de Niza. Marcos penetrated Arizona and went east as far as the now known pueblos of Zuni, in New Mexico. These, he was told, were the seven cities of Cibola. On his favorable report being presented to the viceroy, a large and imposing expedition, under the command of

that young, handsome, adventurous, wealthy, and favored caballero, Don Vazquez de Coronado, was sent forward to explore, subjugate, and possess the new lands in the name of God and the King of Spain. After reaching Zuni, an expedition under Ensign Tobar was sent to Moki, where he and his soldiers learned of a "large river," on the banks of which "there were some people with very large bodies."

"As Don Pedro de Tobar was not commissioned to go farther, he returned from there and gave this information to the general, who despatched Don Garcia Lopez de Cardenas with about twelve companions to go to see this river. He was well received when he reached Tusayan, and was entertained by the natives, who gave him guides for his journey. They started from here loaded with provisions, for they had to go through a desert country before reaching the inhabited region, which the Indians said was more than twenty days' journey. After they had gone twenty days they came to the banks of the river, which seemed to be more than three or four leagues above the stream which flowed between them." — CASTEÑADA.

When Coronado started on his land expedition, Mendoza sent out a sea expedition, commanded to co-operate with it, placing two vessels under the direction of Hernando de Alarcon.

"He was instructed to sail northward, following the coast as closely as possible. He was to keep near the army, and communicate with it at every opportunity, transporting the heavy baggage and holding himself ready at all times to render any assistance which Coronado might desire. Alarcon sailed May 9, 1540, probably from Acapulco.



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APACHE POINT FROM WALLAPAI POINT, SHOWING VACA WALL, MARCOS MONUMENT, AND ALARCON BEND.

"He followed the shore closely and explored many harbors, but he nowhere succeeded in obtaining any news of the army of Coronado." — GEORGE PARKER WINSHIP.

At last, reaching the sand-bars and shoals at the head of the Gulf of California, and investigation revealing that he was at the mouth of a great river, he resolved to explore it, and, —

"taking twenty men in two boats, started upstream on Thursday, August 26, 1540, when white men for the first time floated on the waters of the Colorado. The Indians appeared on the river banks during the following day. The silence with which the strangers answered the threatening shouts of the natives, and the presence of the Indian interpreters in the boats, soon overcame the hostile attitude of the savages. The European trifles which had been brought for gifts and for trading completed the work of establishing friendly relations, and the Indians soon became so well disposed that they entirely relieved the Spaniards of the labor of dragging the boats up the stream. A crowd of Indians seized the ropes by which the boats were hauled against the current, and from this time on some of them were always ready to render this service to their visitors. In this fashion the Spaniards continued northward, receiving abundant supplies of corn from the natives, whose habits and customs they had many excellent opportunities for observing. Alarcon instructed these people dutifully in the worship of the cross, and continually questioned them about the places whose names Friar Marcos had heard. He met with no success until he had travelled a considerable distance up the river, when for the first time he found a man with whom his interpreter was able to converse." — GEORGE PARKER WINSHIP.

Here he learned news of Coronado, but could get none of his men to go with a message across the

country to Cibola, where he was assured his land coadjutor would be found. Much to his regret Alarcon was compelled to return to his vessels at the mouth of the river, but it was only to start up again with "three boats filled with wares of exchange, with corne and other seedes, hennes and cockes of Castille."

"Starting September 14, he found the Indians as friendly as before, and ascended the river, as he judged, about 85 leagues, which may have taken him to the point where the canyons begin. A cross was erected to inform Coronado, in case an expedition from Cibola should reach this part of the river, that he had tried to fulfil his duty, but nothing more was accomplished." — GEORGE PARKER WINSHIP.

In September of the same year (1540) Melchior Diaz started from the valley of Corazones, or Hearts (where Coronado had left him in charge of seventy or eighty men), with twenty-five men to endeavor to reach the seacoast and find Alarcon.

"Hurrying across the desert region, he travelled slowly up the coast until he reached the mouth of a river which was large enough for vessels to enter. The country was cold, and the Spaniards observed that when the natives hereabouts wished to keep warm, they took a burning stick and held it to their abdomens and shoulders. This curious habit led the Spaniards to name the river Firebrand — Rio del Tizon. Near the mouth of the river was a tree on which was written, 'A letter is at the foot of this.' Diaz dug down and found a jar wrapped so carefully that it was not even moist. The enclosed papers stated that 'Francisco de Alarcon reached this place in the year '40 with three ships, having been sent in search of Francisco Vazquez Coronado by the viceroy, D. Antonio de Mendoza; and after crossing the bar at the mouth of the

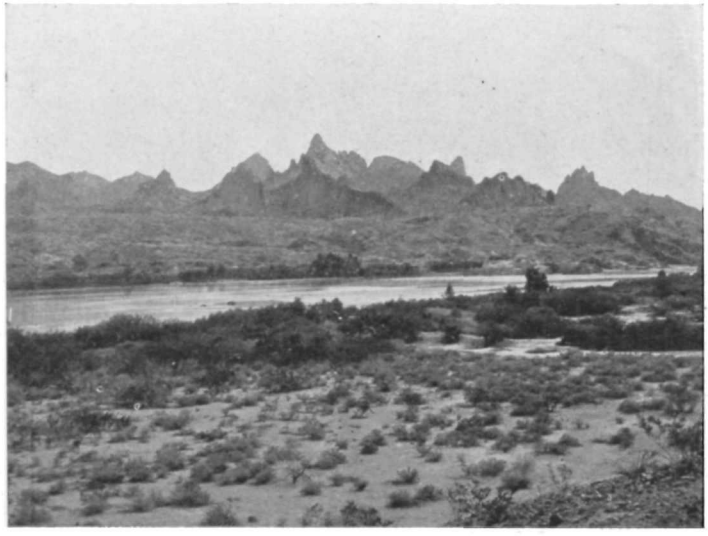
river and waiting many days without obtaining any news, he was obliged to depart, because the ships were being eaten by worms,' the terrible *Teredo navalis*.

"Diaz determined to cross the river, hoping that the country might become more attractive. The passage was accomplished, with considerable danger, by means of certain large wicker baskets, which the natives coated with a sort of bitumen, so that the water could not leak through. Five or six Indians caught hold of each of these and swam across, guiding it and transporting the Spaniards with their baggage, and being supported in turn by the raft. Diaz marched inland for four days, but not finding any people in the country, which became steadily more barren, he decided to return to Corazones Valley. The party made its way back to the country of the giants without accident, and then one night, while Diaz was watching the camp, a small dog began to bark and chase the flock of sheep which the men had taken with them for food. Unable to call the dog off, Diaz started after him on horseback and threw his lance while on the gallop. The weapon stuck up in the ground, and before Diaz could stop or turn his horse, which was running loose, the socket pierced his groin. The soldiers could do little to relieve his sufferings, and he died before they reached the settlement, where they arrived January 18, 1541." — GEORGE PARKER WINSHIP.

In 1746 Padre Consag explored the Gulf of California as far as the mouth of the Colorado River, and in 1776 Sylvestre Escalante, a Spanish priest, crossed the river in Glen Canyon, at a place still known as El Vado de los Padres, — the crossing of the fathers. About the same time, Padre Francisco Garces travelled extensively in the region of the canyon and visited the Havasupais in Cataract Canyon.

Early in this century Lieutenant Hardy of the British Navy made a limited survey of the lower waters of the Colorado, and in 1846–47 the United States "Army of the West" crossed on their way to California.

In 1853 the Sitgreaves expedition — which left its sign in the name Mount Sitgreaves, a moun-



THE COLORADO RIVER AND THE NEEDLES, CALIFORNIA.

tain near the San Francisco range — was organized for the purpose of determining whether the Zuni River flowed into the Colorado. This party, after travelling below the Falls of the Little Colorado, in its westward journeyings, struck the Colorado River about a hundred and fifty miles above Yuma.

Three years later, Lieutenant Whipple's survey

for a practical railroad route to the Pacific Coast along the thirty-fifth parallel led him to the Colorado River, and an exploration was made of the Black Canyon (below the Grand) and of the lower portion of the Grand Canyon as high up as Diamond Creek.

It is possible there may have been expeditions through the Canyon made by adventurous white explorers even before the time of Powell, but this is only conjecture, based upon the fact that in the lower part of Cataract Canyon Mr. Stanton discovered the name of "I Julien, 1836," deeply carved in the face of the rock. Mr. F. A. Nims, the photographer of the Stanton expedition, says of this inscription, which was six feet above what was then the bed of the river: —

> "As it could only have been done from the water by some one either in a boat or on a raft, the only solution we could arrive at was that it was done by one of a party of Canadian voyageurs, which is reported to have attempted to explore this part of the country in 1836 — thirty-three years before Major Powell and his party made their memorable trip, and fifty-three years before we followed. What became of them I have been unable to ascertain. No written account has ever been published of their journey."

Dr. Parry, the distinguished botanist of the Mexican Boundary Commission, was once led into writing an account of a trip supposedly made through the Canyon by James White, a Wisconsin miner. This man was afterwards employed by Major Powell, and it was then found that the published account of his trip was largely erroneous. He had some adventures in the Canyon, but they were small

and insignificant compared with the stories circulated about them.

In 1855, a party of several men, led by one Ashley, made an attempt to come through the canyons, and they were soon wrecked, and all but Ashley and one companion drowned. Powell thus refers to Ashley in his "Explorations": —

"On a high rock by which the trail passes we find the inscription: 'Ashley 18–5.' The third figure is obscure — some of the party reading it 1835, some 1855.

"James Baker, an old-time mountaineer, once told me about a party of men starting down the river, and Ashley was named as one. The story runs that the boat was swamped, and some of the party drowned in one of the canyons below. The word 'Ashley' is a warning to us, and we resolve on great caution.

"Ashley Falls is the name we give to the cataract we have just passed. Eight days later we discover an iron bake oven, several tin plates, a part of a boat, and many other fragments, which denote the spot where Ashley's party came to disaster and, possibly, death."

In 1857, Lieutenant Ives was placed in command of an expedition, organized by the War Department, for the purpose of discovering whether supplies for the military posts of New Mexico and Utah could be transported by water up the Colorado River. He was instructed to explore the river from its mouth as far as navigation was possible. In a steamboat (which was specially constructed in Philadelphia, shipped in sections via the Isthmus of Panama to San Francisco and thence around Cape St. Lucas into the Gulf of California to the mouth of the river, and there put together), he

ascended to the head of Black Canyon, a few miles below the confluence of the Virgen River in Nevada.

At this point he decided that navigation could be pursued no farther, so, sending the vessel back to Fort Yuma, he crossed the country to the northeast, reaching the Colorado River again at Diamond Creek. Continuing his journey eastward he entered Cataract Canyon (briefly described in later pages of this book), visited the Havasupai Indians, then made a wide southward detour around the San Francisco Peaks, crossed the Little Colorado, and journeyed thence northeast to the pueblos of the Hopis. After a short stay there he went eastward to Fort Defiance, and finally returned to eastern civilization.

The report of Lieutenant Ives is a most fascinating large quarto volume, illustrated by marvellous pictures of the Grand Canyon and other scenes from the pencils of Mollhausen and Eggloffstein. Those of the latter artist are as artistic and attractive as they are untrue and belittling. Dutton, speaking of these sketches of the Kaibab region in his monograph on the Grand Canyon, says: "Never was a great subject more artistically misrepresented or more charmingly belittled." Yet the report itself is remarkably interesting, and, being the first volume published on the wonders of the Grand Canyon, — though only a small portion of it, — it is invaluable both to the student and to those who would know in detail the difficulties that have beset the pathway of the pioneers who first trod the banks of the encanyoned river.

CHAPTER III

EXPLORATIONS BY MAJOR J. W. POWELL (1869-72)

UP to this time it will be seen that no adequate survey of the Colorado River or its canyons had been made. Exploring parties or individuals had touched it here and there, but there had been no thorough and satisfactory exploration. It was left to the untiring energy, persistent zeal, and scientific instincts of Major J. W. Powell to accomplish the impossible; for Indians, miners, prospectors, cowboys, Spanish explorers, and United States government officers were a unit in saying that it was a practical impossibility to ride down the Colorado River from its source to its mouth.

Exaggerated stories of Ives' report reached the ears of the miners, prospectors, and hunters who wandered into the country, and these, in time, started other stories equally exciting, which aroused much interest and curiosity, although it is doubtful whether any of them had much, if any, foundation in fact.

"Tales were told of parties entering the gorge in boats, and being carried down with fearful velocity into whirlpools, where all were overwhelmed in the abyss of waters; others, of underground passages for the great river, into which boats had passed never to be seen again. It was

currently believed that the river was lost under the rocks for several hundred miles. There were other accounts of great falls, whose roaring music could be heard on the distant mountain summits. There were many stories current of parties wandering on the brink of the canyon, vainly endeavoring to reach the waters below, and perishing with thirst at last in sight of the river which was roaring its mockery into dying ears.



MAJOR POWELL'S BOAT IN GLEN CANYON.

The Indians, too, have woven the mysteries of the canyons into the myths of their religion. Long ago, there was a great and wise chief, who mourned the death of his wife, and would not be comforted until Ta-vwoats, one of the Indian gods, came to him, and told him she was in a happier land, and offered to take him there, that he might see for himself, if, upon his return, he would cease to mourn. The great chief promised. Then Ta-vwoats made a trail through the mountains that intervene between that beautiful land, the balmy region in the Great West, and this, the desert home of the poor Nu-ma.

"This trail was the Canyon Gorge of the Colorado. Through it he led him; and when they had returned, the deity exacted from the chief a promise that he would tell no one of the joys of that land, lest, through discontent with the circumstances of this world, they should desire to go to heaven. Then he rolled a river into the gorge, a mad, raging stream, that should engulf any that might attempt to enter thereby." — J. W. POWELL.

The wondrous daring of Powell's expedition can well be understood when it is known that to this day it is a common thing for those whose work takes them to the "rim" to declare unhesitatingly that Powell never went through the whole of the Canyon. They say Stanton may have done so, but that was only because he had the information that Powell gleaned from the banks of the Canyon to aid him. The Indians also declare that it is a physical impossibility, and, as will be related later, it was their disbelief in the statements of Powell's men (those who left the expedition before its close) that led to the murder of those three unfortunates.

To Powell, then, the honor and credit belong, and to him will freely be accorded the claim I have made in my dedication when it is known what incredible difficulties his daring, intrepidity, and courage, backed by the same qualities in his faithful corps of assistants, overcame.

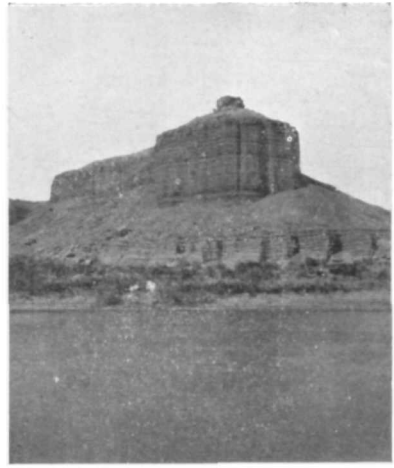
In 1867 he began explorations of the canyons and gorges of the Upper Colorado, and as the result of these early efforts, a party was organized in 1869 for the complete exploration of the Colorado River from its source to its mouth.

On the 24th of May, 1869, the party left Green River City, the prow of the boats turned to flow with the swift current into the unknown dangers and wonders ahead. Three of the boats were of oak, and one of pine, — each divided into compartments, some of which were water-tight to make the boats buoyant. They were loaded with rations deemed sufficient to last ten months, — clothing, ammunition, tools, and all necessary scientific instruments.

Major Powell's report is eloquent and vivid, and the daily diary of this band of brave explorers is as fascinating and thrilling as any work of imagination ever written.

As they started:—

"Away to the south, the Uinta Mountains stretch in a long line; high peaks thrust into the sky, and snow-fields glittering like lakes of molten silver; and pine forests in sombre green; and rosy clouds playing around the borders of huge, black masses; and heights and clouds, and mountains and snow-fields, and forests and rock-lands are blended into one grand view."— J. W. POWELL.



DELLENBAUGH BUTTE, GREEN RIVER.

In five days sixty-two miles are run, and Flaming Gorge reached, — then Horseshoe Canyon and Beehive Point. An exciting ride follows, through a narrow gorge, where the water is rolled by the side-rocks into the centre in great waves, through which the boats go leaping and bounding as if gifted with life. Then the roar of a fall near by leads to the unloading of the boats to make a "portage" over the dangerous place. This is the Ashley Falls before referred to.

"Seventy and one-third miles from Flaming Gorge the gate of the Canyon of Lodore is reached, in which a suc-

cession of rapids are found. This is our method of procedure at such places. The Emma Dean goes in advance; the other boats follow, in obedience to signals. When we approach a rapid, or what, on other rivers, would often be called a fall, I stand on deck to examine it, while the oarsmen back-water, and we drift on as slowly as possible. If I can see a clear chute between the rocks, away we go; but if the channel is beset entirely across, we signal the other boats, pull to land, and I walk along the shore for closer examination. If this reveals no clear channel, hard work begins. We drop the boats to the very head of the dangerous place, and let them over by lines, or make a portage, frequently carrying both boats and cargoes over the rocks, or perhaps, only the cargoes, if it is safe to let the boats down. The waves caused by such falls in a river differ much from the waves of the sea. The water of an ocean wave merely rises and falls; the form only passes on, and form chases form unceasingly. A body floating on such waves merely rises and sinks, — does not progress unless impelled by wind or some other power. But here, the water of the wave passes on, while the form remains. The waters plunge down ten or twenty feet, to the foot of the fall; spring up again in a great wave; then down and up, in a series of billows, that gradually disappear in the more quiet waters below; but these waves are always there, and you can stand above and count them.

"A boat *riding* such, leaps and plunges along with great velocity. Now, the difficulty in riding over these falls, when the rocks are out of the way, is in the first wave at the foot. This will sometimes gather for a moment, heaping up higher and higher, until it breaks back. If the boat strikes it the instant after it breaks, she cuts through, and the mad breaker dashes its spray over the boat, and would wash us overboard did we not cling tight. If the boat, in going over the falls, chances to get caught in some side current, and is turned from its course, so as to strike the wave "broad-side on," and the wave breaks at the same

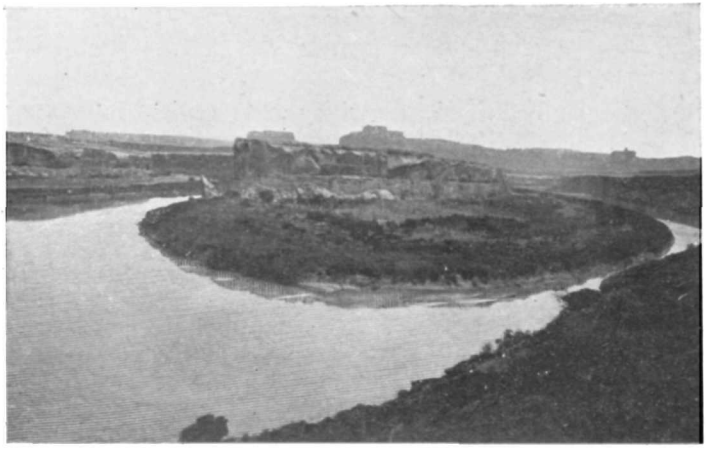
instant, the boat is capsized. Still, we must cling to her, for, the water-tight compartments acting as buoys, she cannot sink; and so we go, dragged through the waves, until still waters are reached. We then right the boat, and climb aboard." —J. W. POWELL.

The next day (June 9) a very exciting run is made, and the boat, the "No Name," makes a "bolt" and goes over two falls, — the first about ten or twelve feet, the next some forty or fifty feet —

"in a channel filled with dangerous rocks that break the waves into whirlpools and beat them into foam. Look at them! — the boat strikes a rock, rebounds from the shock, careens, and fills the open compartment with water. Two of the men lose their oars; she swings around, and is carried down at a rapid rate, broadside on, for a few yards, and strikes amidships on another rock with great force, is broken quite in two, and the men are thrown into the river; the larger part of the boat floating buoyantly, they soon seize it, and down the river they drift, past the rocks for a few hundred yards to a second rapid, filled with huge boulders, where the boat strikes again, and is dashed to pieces, and the men and fragments are soon carried beyond my sight. Running along, I turn a bend, and see a man's head above the water, washed about in a whirlpool below a great rock. It is Frank Goodman, clinging to it with a grip upon which life depends. Coming opposite, I see Howland trying to go to his aid from an island on which he has been washed. Soon, he comes near enough to reach Frank with a pole, which he extends toward him. The latter lets go the rock, grasps the pole, and is pulled ashore. Seneca Howland is washed farther down the island, and is caught by some rocks, and, though somewhat bruised, manages to get ashore in safety. This seems a long time, as I tell it, but it is quickly done.

"And now the three men are on the island, with a swift, dangerous river on either side, and a fall below." — POWELL.

After incredible efforts, the men are rescued, and in a day or two the party resumes its journey, but not until it has found a bake-oven, several tin



BONITO BEND.

plates, a part of a boat, and many other fragments which denote that this is the place where Ashley's party was wrecked. So the name "Disaster Falls" is given to this scene of so much peril and loss.

More falls, rocks, and rapids, and a beautiful park is reached, and then a place where —

"just before us, the canyon divides, a little stream coming down on the right, and another on the left, and we can look away up either of these canyons, through an ascending vista, to cliffs and crags and towers, a mile back, and two thousand feet overhead. To the right, a dozen

gleaming cascades are seen. Pines and firs stand on the rocks, and aspens overhang the brooks. The rocks below are red and brown, set in deep shadows, but above, they are buff and vermilion, and stand in the sunshine. The light above, made more brilliant by the bright-tinted rocks, and the shadows below more gloomy by the sombre hues of the brown walls, increase the apparent depths of the canyons, and it seems a long way up to the world of sunshine and open sky, and a long way down to the bottom of the canyon glooms." — POWELL.

Twenty and three-quarters miles bring the travellers to Echo Park, which ends the Canyon of Lodore, and from this point to the mouth of the Uinta River through Whirlpool Canyon, Island Park, and Split Mountain Canyon, they add ninety-eight and one-fourth miles more to the distance. To the junction of the Grand and Green (which together form the Colorado), through the Canyon of Desolation, Gray Canyon, Gunnison's Valley, Labyrinth Canyon, and Stillwater Canyon, it is two hundred and eighty-six and one-fourth miles, all of which distance is safely travelled.

And now they have reached the real Colorado River. Here much discussion takes place between the members of the party as to the probabilities of successfully navigating the river below. They arrive at the conclusion —

"that there are great descents yet to be made, but, if they are distributed in rapids and short falls, as they have been hitherto, we shall be able to overcome them. But maybe we shall come to a fall in these canyons which we cannot pass, where the walls rise from the water's edge, so that we cannot land, and where the water is so

swift that we cannot return. Such places have been found except that the falls were not so great but that we could run them in safety. How will it be in the future? So the men speculate over the serious probabilities in a jesting mood, and I hear Sumner remark, 'My idea is, we had better go slow, and learn to paddle.'" — POWELL.

The very next day difficulties are so great that the distance made is only three-quarters of a mile, and the fall in the river in that short distance is seventy-five feet.

Cataract and Glen Canyons are passed through, and now Marble Canyon is reached.

"The scenery is on a grand scale. The walls of the Canyon, twenty-five hundred feet high, are of marble, of many beautiful colors, and often polished by the waves, or far up the sides, where showers have washed the sands over the cliffs.

"At one place I have a walk, for more than a mile, on a marble pavement, all polished and fretted with strange devices, and embossed in a thousand fantastic patterns. Through a cleft in the wall the sun shines on this pavement, which gleams in iridescent beauty.

"I pass up the cleft. It is very narrow, with a succession of pools standing at higher levels as I go back. The water in these pools is clear and cool, coming down from springs. Then I return to the pavement, which is but a terrace or bench, over which the river runs at its flood, but left bare at present. Along the pavement, in many places, are basins of clear water, in strange contrast to the red mud of the river. At length I come to the end of this marble terrace, and take again to the boat.

"Riding down a short distance, a beautiful view is presented. The river runs sharply to the east, and seems enclosed by a wall, set with a million brilliant gems. What can it mean? Every eye is engaged, every one

wonders. On coming nearer, we find fountains bursting from the rock, high overhead, and the spray in the sunshine forms the gems which bedeck the wall. The rocks below the fountain are covered with mosses, and ferns, and many beautiful flowering plants. We name it Vasey's Paradise, in honor of the botanist who travelled with us last year.

"It rains again this afternoon. Scarcely do the first drops fall, when little rills run down the walls. As the storm comes on, the little rills increase in size, until great streams are formed. Although the walls of the canyon are chiefly limestone, the adjacent country is of red sandstone; and now the waters, loaded with these sands, come down in rivers of bright red mud, leaping over the walls in innumerable cascades. It is plain now how these walls are polished in many places." — POWELL.

The end of Marble Canyon is at the mouth of the Colorado Chiquito. The canyon through which this muddy, salt stream flows is on a scale quite as grand, although not so extensive, as that of the Colorado itself. Standing on Paiuti Point (Grand View) near the Grand View Trail, the cliffs above the mouth of the Little Colorado are distinctly to be seen; but to rightly enjoy it, one should ride around the rim, some thirty-five miles, and see the junction of the two rivers.

The walls of Marble Canyon at its head are two hundred feet high, but as they approach the Grand Canyon they gradually increase in depth until they are thirty-five hundred feet high.

And now the Grand Canyon itself is reached, and "we are ready to start on our way down the great unknown." And those who read this portion of Major Powell's Journal, published some years ago

in "Scribner's," will remember how the pulses quickened, and the heart quivered often ere the end of his thrilling experiences was reached.

"An unknown river we have yet to explore. What falls there are, we know not; what rocks beset the channel, we know not. What walls rise over the river, we know not. The water is swift, the walls rise from the very edge of the river. They are composed of tiers of irregular shelves below, and above these, steep slopes to the foot of the marble cliffs. Soon after entering, the river runs across a dike. A dike is a fissure in the rocks, open to depths below, which has been filled with eruptive matter, and this, on cooling, was harder than the rocks through which the crevice was made, and, when these were washed away, the harder volcanic matter remained as a wall, and the river has cut a gateway through it several hundred feet high, and as many wide.

"The very next day, the softer series of rocks are left behind, — newer and more dangerous experiences clearly are before us, for we now enter *the granite*. Here the canyon is narrow and the water swifter. The walls are set on either side, with pinnacles and crags; and sharp, angular buttresses, bristling with wind- and wave-polished spires, extend far out into the river. The walls, now, are a mile in height, — a vertical distance difficult indeed to appreciate. Stand in any street with which you are familiar, lined with stores on either side for a full mile, and then imagine this immense mass of buildings extending this mile upwards, — and you can then begin to comprehend the grandeur of these rock walls." — POWELL.

The explorers gaze and take their fill and then journey on, and at length reach a part of the river which we can well imagine is the one just to the left of the foot of the Old Trail, where we have stood and gazed on the wildly dashing, hoarsely

raging, and ever-foaming waters as they madly galloped along to their rest in the Gulf of California.

"The river is very deep, the canyon very narrow, and still obstructed, so that there is no steady flow of the stream; but the waters wheel, and roll, and boil, and we are scarcely able to determine where we can go. Now, the boat is carried to the right, perhaps close to the wall; again, she is shot into the stream, and perhaps is dragged over to the other side, where, caught in a whirlpool, she spins about. We can neither land nor run as we please. The boats are entirely unmanageable; no order in their running can be preserved; now one, now another is ahead, each crew laboring for its own preservation. In such a place we come to another rapid. Two of the boats run it perforce. One succeeds in landing, but there is no foothold by which to make a portage, and she is pushed out again into the stream. The next minute a great, reflex wave fills the open compartment; she is water-logged, and drifts unmanageable. Breaker after breaker rolls over her, and one capsizes her. The men are thrown out; but they cling to the boat, and she drifts down some distance, alongside of us, and we are able to catch her. She is soon bailed out, and the men are aboard once more.

"One more day, and we come to a beautifully clear stream which we name Bright Angel Creek. This is nearly opposite the Bright Angel Trail." — POWELL.

And now, provisions begin to "give out;" rain falls in torrents; the stream grows more and more rapid, dangerous, and threatening; not one of the party has a complete suit of clothes, and there is not a blanket each for them. Affairs begin to look desperate. All their bacon is so badly injured that it has to be thrown away, their flour is musty, and there is only enough to last for ten days, with

no baking-powder to raise it. This flour, a few dried apples, and plenty of coffee, are all they have left. And yet, in spite of these discouragements, and the unknown portion of the river full of dangers and perils before them, these brave men go on; and although the next day they only make the small distance of two miles, the day following brings them brightness in the fact that after rushing madly down through a long, winding chute where they make ten miles in less than an hour, they emerge from the granite formation, and although the walls are still narrow and the river swift, they know that while this condition lasts they can meet with no more great falls or rapids.

So they go gleefully on, and three or four days afterwards come to monuments of lava standing in the river. Most of them are low rocks, but some are shafts more than three hundred feet high.

Two days later three of the party tell Major Powell they have decided to go no farther. Expostulation is found to be useless, and the next day, after sharing their provisions, the party divides, Howland, his brother, and William Dunn climbing out of the Canyon, hoping to reach the Mormon settlements in Utah, and thus return to civilization, the others determined to complete their journey or perish in the attempt. And in order to remove misapprehension as far as possible as to the fate of these men, I will here quote Major Powell's discovery of the cause of their death. It was in the fall of the following year that he (Powell) visited the camp of the Shi-vwits Indians, near to the place where the three men left the river.

"I then learned that they had come to the Indian village almost starved and exhausted with fatigue. They were supplied with food, and put on their way to the settlements. Shortly after they had left, an Indian from the east side of the Colorado arrived at the village, and told them (the Shi-vwits) about a number of miners having killed a squaw in a drunken brawl, and no doubt these were the men. No person had ever come down the canyon; that was impossible; they were trying to hide their guilt. In this way he worked them into a great rage. They followed, surrounded the three unfortunate men in ambush, and filled them full of arrows." — POWELL.

Three of their men gone, the party hurries on, leaving behind one of the remaining boats, — with barometers, fossils, minerals, and what ammunition they think they can spare. More difficulties and dangers are yet to be faced, and that afternoon they have adventures which would entirely daunt the hearts of less brave and determined men. Falls are encountered, over which they go dashing madly, it seems as if to sure and certain death. The first boat goes over with only one man — Bradley — in it. Breathlessly the others look on, and see the boat emerge on the crest of a wave, whirl around behind some great rocks, and then they lose sight of it in the mad, white foam below. They stand frozen with fear, for neither boat nor man is to be seen; but by and by he comes up again below, in a whirlpool, and in order that they may chance to help him they all jump into their boat, hurry down — over the falls — are capsized — and were it not for the efforts made by the man they go themselves to save, they, probably, some of them, would lose their lives.

At noon of the following day these brave-hearted explorers emerge from the Grand Canyon. Although they have still many miles to run, they are in waters which have been navigated some years previously by a party of Mormons. And what joy they feel at the cessation of their dangerous labors!

"The relief from danger and the joy of success are great. When he who has been chained by wounds to a hospital cot, until his canvas tent seems like a dungeon cell, until the groans of those who lie about, tortured with probe and knife, are piled up, a weight of horror on his ears that he cannot throw off, cannot forget, and until the stench of festering wounds and anæsthetic drugs has filled the air with its loathsome burden, — when such an one at last goes out into the open field, what a world he sees! How beautiful the sky! how bright the sunshine! what 'floods of delicious music' pour from the throats of birds! how sweet the fragrance of earth, and tree, and blossom! The first hour of convalescent freedom seems rich recompense for all pain, gloom, terror.

"Something like this are the feelings we experience to-night. Ever before us has been an unknown danger, heavier than immediate peril. Every waking hour passed in the Grand Canyon has been one of toil. We have watched with deep solicitude the steady disappearance of our scant supply of rations, and from time to time have seen the river snatch a portion of the little left, while we were a-hungered. And danger and toil were endured in those gloomy depths, where ofttimes the clouds hid the sky by day, and but a narrow zone of stars could be seen at night. Only during the few hours of deep sleep, consequent on hard labor, has the roar of the waters been hushed. Now the danger is over; now the toil has ceased; now the gloom has disappeared; now the firmament is bounded only by the horizon; and what a vast expanse of constellations can be seen!

"The river rolls by us in silent majesty; the quiet of the camp is sweet; our joy is almost ecstasy. We sit till long after midnight, talking of the Grand Canyon, talking of home, but chiefly talking of the three men who left us. Are they wandering in those depths, unable to find a way out? are they searching over the desert lands above for water? or are they nearing the settlements?" — POWELL.

Two or three days later they land, and on the first of September four of the men, with new supplies, go on down the Colorado to Fort Mohave, and Major Powell overland to Salt Lake City.

Further explorations have since been made under the direction of the United States Geological Survey while Major Powell was its director, and as a result Captain Clarence E. Dutton has published one of the most interesting monographs ever penned by a specialist. Its title is "The Tertiary History of the Grand Canyon District," and it is accompanied with a large atlas containing admirable pictures, etc., of the Canyon region, — from sketches made by Mr. W. H. Holmes, the accomplished field geologist, artist, archæologist, and writer, now in charge of the Anthropological Department of the United States National Museum. No praises bestowed upon these gentlemen, for the fidelity with which they have described this marvellous rock region, can ever be adequate return for the pleasure they have afforded those who have enjoyed the fruit of their labors.

CHAPTER IV

LATER EXPLORATIONS

ON the 25th of May, 1889, Mr. Frank M. Brown, of Denver, Colorado, with Mr. Robert Brewster Stanton as chief engineer, and a party of thirteen men, started from a point in Utah, called by the Post Office Department Blake, and known in railroad circles as Green River.

Mr. Brown "had conceived the idea of building a railroad through the canyons of the Colorado River, from some point in Colorado, by a water grade, down the Grand and Colorado Rivers to some point in Southern California, where the road could be feasibly taken across to the coast" of the Pacific.

The early portions of the adventures of this party were very similar to those experienced by the Powell party. Up to the second day of June everything went along pleasantly, but from that time on there was disaster of some kind every day.

One of the peculiar and dangerous features of the river was an up-shooting wave which they designated a "fountain."

"Where the river is broad, deep, and swift, the bottom seems to be covered with potholes in the sandstone, and to have great heaps of constantly changing quicksand mounds. This causes numberless cross-currents under-

neath the surface, and at times these seem to combine, resulting in an enormous up-shooting wave, which breaks through the surface of the water with a swish and roar that are appalling, and tosses anything it may strike. The noise these 'fountains' make is something between the boom of a cannon and the rush of an enormous sky-rocket, and they can be heard for a mile. They do not rise twice in the same place, but switch about so that it is impossible to avoid them." — E. REYNOLDS.

Over and over again the boats were turned upside down by these "fountains," and if the men were not "ducked" more than once a day, they considered themselves fairly fortunate.

The party journeyed on, had their upsets, lost their provisions, had one of their boats smashed, but kept up brave hearts, and went manfully forward until July 10th. On the previous evening Mr. Brown must have had a presentiment of disaster, for Mr. Stanton says he "seemed lonely and troubled, and asked me to sit by his bed and talk. We sat there late, smoking, and talking of our homes and our journey on the morrow."

That morrow was a sad one for the expedition. Brown and a man named McDonald were ahead in a boat, and they —

"undertook to run the first rapid, by the side of which was a great whirlpool. They were going safely along a neutral strip of water between the two, when an enormous up-shooting wave struck the boat in the middle, throwing it into the air, and pitching Brown into the whirlpool, and McDonald into the rapid. Both were powerful swimmers. McDonald struck out, calling to Brown, 'Come on.' Brown replied, 'All right,' and faced down the river. McDonald had now all he could do to care for himself.

Three times he was thrown under by the terrific tossings of the mad waters, but he managed to reach a rock about six hundred yards below the scene of the mishap. Dragging himself out, he was horrified to see Brown still in the whirlpool. Frantically he gestured to the following boat. It recognized his signals, and dashed for the whirlpool, but too late. Brown had disappeared a few seconds before it reached him, and that river never gives up its dead." — E. REYNOLDS.

Now let Stanton take up the narrative.

"In this world we are left but little time to mourn. We had work to do, and I determined if possible to complete the whole of that work. With this intention we started out next morning. Thursday, Friday, and Saturday we pushed on with our usual work, shooting through or portaging round twenty-four bad rapids, getting deeper and deeper between the marble walls. After a quiet rest on Sunday, Monday morning found us at the head of two very rough and rocky rapids. We portaged both of them. While the photographer and myself took our notes and pictures, the boats were to go on through the lower end of the second rapid to a sandbar, a half-mile below. It was easy walking for us along the bank. The first boat got down with difficulty, as the current beat hard against the left cliff. My boat was the next to start. I pushed it out from shore myself with a cheering word to the men, Hansbrough and Richards. It was the last they ever heard. The current drove them against the cliff, under an overhanging shelf. In trying to push away from the cliff the boat was upset. Hansbrough was never seen to rise. Richards, a powerful man, swam some distance down stream. The first boat started out to the rescue, but he sank before it reached him.

"Two more faithful and good men gone! Astonished and crushed by our sad loss, our force too small to portage our boats, and our boats entirely unfit for such

work, I decided to abandon the trip, with then and there a determination, as soon as a new outfit could be secured, to return and complete our journey to the Gulf." — R. B. STANTON.

This resolution was faithfully carried out. Mr. Stanton fitted out a second party, and on the 10th of December, 1889, after having hauled their boats by wagon one hundred and twenty miles from Green River Station to the mouth of Crescent Creek, four miles above Dandy Crossing, embarked on the great river. On the 1st of March, 1890, the mouth of Diamond Creek was reached; they "emerged at the lower end of Grand Canyon March 17th, reached the end of the survey at tide-water April 26th, and, returning to Yuma, disbanded on April 30th. One boat was completely destroyed in Rapid No. 249; but only two sacks of provisions were lost in the whole journey.

"Thus had the two expeditions, considered as one, travelled by boat a distance of over fourteen hundred miles, had passed over — running nearly all of them — five hundred and twenty rapids, falls, and cataracts in less than five hundred miles, making a total fall of forty-five hundred feet, and had passed successfully through the dark canyons of one of the most tempestuous rivers of the world." — R. B. STANTON.

Mr. Stanton wrote an excellent popular account of this trip, which appeared in "Scribner's" for November, 1890, and a scientific report from the engineer's standpoint, which was published in the "Transactions of the American Society of Civil Engineers," April, 1892. In this report he discusses

the feasibility and practicability of building a railway through the canyons of the Colorado with the object of connecting the coal fields of Colorado with the Pacific Coast.

"It is hoped that in this description there has not only been shown the entire practicability of the canyons of the Colorado River for railway purposes, both from an economical as well as a purely engineering point of view, but that there has also been some light cast upon the nature and possibilities of a portion of our great Western empire, which, to many, has been less known than the heart of Africa." — R. B. STANTON.

The popular narrative is exciting and entrancing.

"On January 13th, we reached Point Retreat, where we left the canyon on our homeward march just six months before. We found our supplies, — blankets, flour, sugar, coffee, etc., which we had cached in the marble cave, all in good condition. From the head of the Colorado to Point Retreat we had encountered one hundred and forty-four rapids, not counting small draws, in a distance of two hundred and forty miles. From Lee's Ferry to Point Retreat there are forty-four rapids, in a distance of thirty miles. With our new boats we ran nearly all of these, and portaged but few; over many of them our boats had danced and jumped at the rate of fifteen miles an hour, and over some, by actual measurement, at the rate of twenty miles per hour. To stand in the bow of one of these boats as she dashes through a great rapid, with first the bow and then the stern jumping into the air, and the spray of the breakers splashing over one's head, is an excitement the fascination of which can only be understood through experience.

"Ten miles below Point Retreat, as we went into camp one evening, we discovered the body of Peter M. Hans-

brough, one of the boatmen drowned on our trip last summer. His remains were easily recognized from the clothing that was still on them. The next morning we buried them under an overhanging cliff. The burial service was brief and simple. We stood around the grave while one short prayer was offered, and we left him with a shaft of pure marble for his headstone, seven hundred feet high, with his name cut upon the base; and in honor of his memory we named a magnificent point opposite — Point Hansbrough.

"February 5th, we passed Bright Angel Creek, in the Granite Gorge of the Grand Canyon, and on the 6th came to the most powerful and unmanageable rapid we had met on the river. We portaged our supplies, and followed our usual method of swinging the empty boats down by lines. My boat was to go first. The two hundred and fifty foot line was strung out ahead, and the boat was strung into the stream. She rode the huge waves with ease, and went below the rapid without injury. The men and the line worked well and payed out smoothly; but when the boat reached the foot of the fall, she acted like a young colt eager for play.

"She turned her nose out toward the current, and as it struck her, she started like a shot for the other side of the river. The men held to her doggedly. After crossing the current she turned and came back into the eddy, and for a few moments stood still, just as a colt ready for another prance. The men rushed down along the rocks to get the line ahead, but before they could get far enough, she turned her head again to the stream. The men put their wills into their arms and held her once more; she did not cross the current, but on reaching the centre dipped her nose under as if trying her strength, came up at once, rose on a wave, and then, as if for a final effort to gain her liberty, dived her head under, filled with water, and went completely out of sight. In a few moments she rose to the surface, and slowly and leisurely

floated sidewise across the eddy toward shore, and quietly stopped alongside a shelving rock.

"To prevent another such experience we adopted Major Powell's plan in such cases, of shooting the boat through and catching it below.

"The 'Marie,' the rebuilt boat, was started first. She rode gracefully the high waves at the head of the rapid, but in the middle she turned, partially filled with water, shot to one side, struck against the cliff, sank in the worst part of the rapid, and came up in pieces about the size of toothpicks — our five days' labor and our boat gone together!" — R. B. STANTON.

This is the rapid just below the foot of Mystic Spring Trail.

On the 12th of January, 1897, N. Galloway, a Mormon trapper, well versed in the upper canyons of the Green River, accompanied by William Richmond, left near the State line of Wyoming and Utah, in boats of Mr. Galloway's own construction, for the trip through the canyons.

In those frail, rude boats they journeyed fourteen hundred miles, emerging through the steep canyon walls on the 3d day of February, and on the 17th of that month completing the trip at the Needles.

Shortly prior to their trip, George Flavall, a Needles boatman, had, unaccompanied, accomplished the same daring venture.

As Galloway and Richmond reached the open country below the Grand Wash, they came upon the officers who had found the bodies of two men killed by a Paiuti Indian, named Mouse. This officer requested them to allow their boats to be

used to convey the bodies down to the Needles. They did so, and on their arrival sold the boats and returned to their homes in Utah.

Some months later I was fortunate enough to arrive at Lee's Ferry, when Mr. Galloway was there with a new boat he had just built, with which he proposed going up the river to a placer gold claim he had located in Glen Canyon. After considerable persuasion he was prevailed upon to take me up the canyon to his gold claim, and also down Marble Canyon, to Soap Creek Rapids, one of the most dangerous rapids in the canyon and near which Frank Brown lost his life. A brief account of this trip is given in a subsequent chapter.

In the "Youth's Companion," some few years ago, A. Ellbrace wrote a wild and improbable story about a trip having been made through the Grand Canyon by a man named Robinson, and, in a footnote, states that doubtless the archives of Fort Mohave of the year 1867 will give authentication to his narrative.

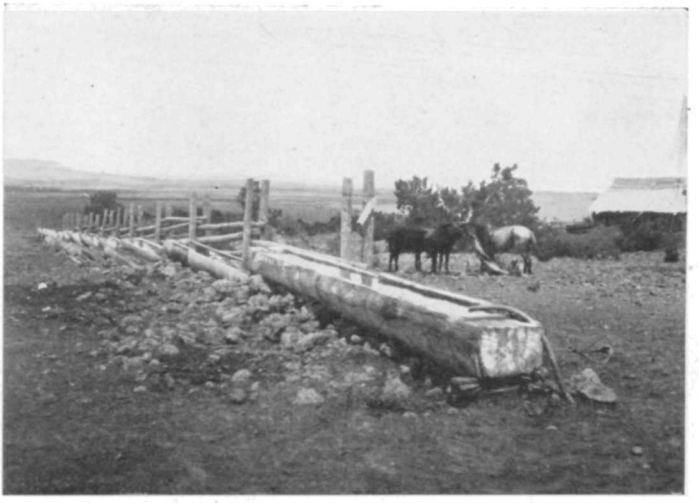
CHAPTER V

FLAGSTAFF, THE SAN FRANCISCO MOUNTAINS, THE CLIFF AND CAVE DWELLINGS, AND THE DEAD VOLCANOES

FOR several years the Grand Canyon was reached mainly by stages operated from Flagstaff, hence to many tourists this little town is inseparably associated with the Canyon. It is beautiful for situation, tree-surrounded, mountain-shadowed, breeze-blown, healthful, and picturesque. At an elevation of about seven thousand feet it nestles at the base of the San Francisco Mountains, whose three rough, volcanic peaks stand guard, as giant Graces, over the cluster of homes at their feet.

It is a typical Western town. The railway track lines one side of the main street, and business blocks, many of which are saloons, the other, fully justifying the affirmation made in the town's advertising literature that "there is nothing puritanical about Flagstaff." It is the county seat of Coconino County, and has a population of about twenty-five hundred people. It possesses a fine stone court-house, high school, three churches, and the Territorial Normal School. It is the trading centre for the cattle, sheep, and mining men of a large surrounding country. As a pleasant summer resort it has already acquired a reputation in the territory.

Whichever way the traveller approaches Flagstaff, whether from the western desert region or from the wild rockiness of New Mexico, he is enchanted as the train enters the forest lands about fifteen miles before reaching Flagstaff. The tall pines, growing larger as the forest is penetrated,



THE WATERING TROUGHS AT CEDAR RANCH ON THE WAY FROM FLAGSTAFF TO THE CANYON.

are a pleasant and welcome sight after passing over the arid lands of western New Mexico and the rugged, rock-ribbed dreariness of the continental divide.

"The whole face of the country changes at this point, as if you had been transported to another land. The monotony of the leafless undulating prairies gives place to picturesque mountains and fertile valleys, richly decked with green deciduous foliage, and the eye rests with plea-

sure upon long vistas of pine forest, where monarchs of the glades raise their towering crests hundreds of feet toward the sky, each tree standing solitary and straight, as if planted and trained by skilled hands, and with not a particle of undergrowth to choke up the surface of the greensward beneath. This grand woodland scene stretches away from the base of the San Francisco Mountains southward for a distance of nearly two hundred miles, and the forest averages over fifty miles in width. This enormous forest, which is the largest in the country outside of Michigan, Wisconsin, and Washington Territory, covers an area of over ten thousand square miles, and contains six million four hundred thousand acres. It is larger than the State of Massachusetts, is double the size of Connecticut, and covers more ground than the States of Delaware and New Jersey combined." — *Tinker's "A Land of Sunshine."*

Though it contains no trees equal to the *Sequoia gigantea* of California, many of them are giants in size, and there are over eighty varieties.

"Among them are red and yellow juniper, cypress, walnut, oak, ash, hickory, sycamore, cedar, wild cherry, locust, ironwood, and other useful varieties, although the pine is the principal timber.

"The Arizona Lumber and Timber Company own or control a considerable portion of the forest. They have a sawmill on the edge of the forest, about a half-mile from Flagstaff, with a capacity of thirty-five million feet a year, but are now only turning out at the rate of twelve million feet a year." — FUNSTON.

CAVE AND CLIFF DWELLINGS

On the eastern side of the San Francisco Mountains, ten miles from Flagstaff, are the Cave Dwellings. They are dug out of the soft and porous

pumice stone or disintegrating basic lava of a volcanic region, and, as their name implies, are holes in the ground used by a wretched people as dwellings. Sometimes the larger and outer chambers communicate with inner and smaller chambers. There are many evidences of their having been inhabited, in the marks of fire in the caves, corn-cobs strewn about, and the masses of broken pottery scattered all over the mountain slopes. Surrounding them, in many places, are walls built of lava, doubtless to protect themselves from the winds and their relentless enemies, the nomad Apaches, Navahos, Utes, and Comanches.

Ten miles southeast from the Caves are the Cliff Dwellings of Walnut Canyon. This canyon is undoubtedly the work of corrasion and subsequent erosion, as is the Grand Canyon, and forms a part of the canyon system which intersects this whole country for many miles. It is from six hundred to seven hundred feet deep where the Cliff Dwellers made their homes, and is a singularly picturesque and romantic site for such a purpose. The canyon is largely composed of cherty limestone, in shelves, on many of which the disintegrating forces of Nature have worn and carried away the floor and part of the solid walls, thus leaving immense hanging — or projecting — *over*-shelves, under which the Cliff Dwellers built their walls. The rear and upper walls afforded back and roof, and all that had to be done was to construct front and side walls, and the "houses" were complete. These walls are built of rude blocks of lime and sandstone cemented with adobe mud. As the shelves are at different

levels, the dwellings are found at various elevations, but invariably at a sufficient height to be safe from the rising of water in the canyon below, and from the attacks of enemies from above.

The Bottomless Pit

On the way out to Walnut Canyon a singular geological fault, not uncommon in this region, is passed, known to the people of the locality as the Bottomless Pit. The name is a western exaggeration, for it is possible to descend to the bottom of this great hole. Dante Descent, near Ashfork, is a similar fault, and one is passed on the south side of the railway between Flagstaff and Ashfork. There is another between Ashfork and Bass Camp at the Canyon, known to the Havasupais as Waimel.

Sunset Crater and the Lava Fields

About twenty miles northeast of Flagstaff, circling from the town around Mt. Elden — the southeastern offshoot of the San Francisco range — is Sunset Crater, so named from the fact that it always presents the rich, peach-blow appearance of sunset. This is caused by the warm coloring of the oxydized rock of the summit, which, resting above the slopes covered with such intensely black volcanic cinders as to appear as if made of coarse gunpowder, makes a contrast so distinctly marked as to suggest a vivid sunset, even when seen on a cloudy day. A little to the northwest of Sunset Peak is O'Leary Peak, and between these is one

of the most desolate, harsh, jagged, cruel-looking, forbidding beds of lava I have ever seen. It is not of great extent, but what there is, is absolutely barren, awe-inspiring, and forsaken. Tossed, upheaved, split, seamed, torn, it has scarcely a living thing of green to relieve its awesome appearance of death. Nebuchadnezzar's furnace, when cooled, was, even in miniature, a pleasing spectacle compared with this region of desolation and gloom. It is Hell's garden, for the uptossed lava masses look like huge black cauliflowers, fit food for demons. Here are caves within caves, made by the bubbling gases when this was a flowing river of blazing rock.

Climb up the slope of O'Leary Peak and look over this dark, forbidding sea. Waves of blackness are there, just as they must have tossed in the awfulness of that dread deluge of fire, but arrested in their mad leaps, and now cooled for centuries. Torrents of black horror, poured, deluge-like, over the once fertile land, and are now stopped, as by magic, and converted into cruel stone. And there to the southeast stands the great Sunset Peak, — itself, perhaps, the crater from whose richly tinted, peach-blossomy summit these waves of dire destruction came, — smiling and gay in midsummer glory all the year, regardless of the gruesome sight it has made below. When all else is dark and forbidding, it smiles and glows. When angry clouds lower and rage, it still smirks and gleams. It laughs at the desolation it has caused, and is glowingly happy in contemplation of the deaths petrified at its feet. Type of devilish, wanton destructiveness; fair to look upon, yet the source of misery, desolation, death.

With a companion I crossed this black field of horror. The lava soon cut our shoes almost to pieces. In the very heart of the field we came upon a level plain, covered with black ashes, of perhaps an acre or so in extent. My companion called my attention to a large hole he had discovered, and, on looking into it, we found we were standing on a thin shell, liable at any time to fall in and produce the rugged, jagged appearance elsewhere presented. I termed this Gunpowder Plateau.

A little beyond is Beelzebub Creek, where the channel is made as if the melted limestone, of which it is formed, had been turned up on each side with a gigantic ploughshare. In places it is arched over with the twisted and overturned burnt rock, and has thus become a perfect "Devil's Avenue"—an under pathway to the Hades of the lost.

The San Francisco Peaks

A delightful experience while in Flagstaff is to take a survey of the country from the summit of the San Francisco Mountains. Mr. Al. Doyle has constructed an easy trail to the summit, and the ride can be accomplished in a few hours.

The United States Monument is on the highest peak, Mt. Humphreys. Far away before us to the north are the upper terrace and gray cliffs of the Grand Canyon, at its most elevated point. The Kaibab Plateau—the highest of all the Colorado River plateaus—stands out boldly above the surrounding country. The Kanab Plateau with the

Uinkaret Mountains, overtopped by Mt. Trumbull, are clearly outlined miles and miles away against the softened blue of the northwestern sky. Beyond them, but barely discernible, are the Virgen Mountains and the Pine Val Mountains. A little to our left, and seeming only a long footstep, is Mt. Kendricks, and a little farther on Mt. Sitgreaves, and still further the conical peak of Williams Mountain. Between the two first named mountains a shower is falling, whilst all around us is the most beautiful sunshine. Close by are a number of smaller hills, many having basins in the top, suggesting their volcanic origin. Some of these basins contain beautiful lakes, — during the rainy season, — and there they lie, mirrors for the angels, and sweet reflectors of the many formed clouds above.

We can see lakes in almost every direction, — over twenty being clearly visible from this point. Trees, also, are everywhere, — rich, heavy, thick, dense pines and fir balsams, and here and there streaks of silver, showing groves of quaking aspen or cottonwood. The mountain is ribbed with snow all around, although it is the middle of July, — one bank here to my left being several hundred feet wide and over a mile long. Myriads of butterflies and other insects fly about in perpetual gayety, relieving these bare, rugged rocks of some of their forbidding aspect.

Turning a little north of east we can clearly follow the outline of the canyon of the Little Colorado. Its nether wall is a striking façade, and there are cliffs which tower up here and there, like the watch-towers of a gigantic castle. Beyond,

like a pale blue cloud closely anchored to the cliffs below, is the Navaho Mountain, nearly two hundred miles away. To the southeast the landscape is more open, with beautiful reliefs here and there of grassy slopes and tree-covered hills.

Close at our feet are Sunset and O'Leary Peaks, whilst away off to the southeast is the wonderful Petrified Forest.

The region to the south is one mass of verdure, —rugged slopes made entrancingly beautiful by a thick covering of pines, which seem black and purple under the influence of sunshine and clouds. Thirteen lakes of various forms and sizes give a peculiar charm and brilliancy to the scene. The rugged cliffs, spires, and pinnacles of Oak Creek Canyon shine out in the sunlight, and the circular panorama is one far more beautiful than the casual observer in Arizona could believe.

CHAPTER VI

FROM THE SANTA FÉ RAILWAY TO THE CANYON BY STAGE

WHILE most visitors to the canyon have journeyed on the stage from Flagstaff, my most enjoyable experiences have been from Ashfork, a small town at the junction of the main line and the Santa Fé, Prescott, and Phœnix Railway.

Eight miles west is a peculiar geological fault well worth visiting, which I have named Dante Descent. It is about five hundred and fifty feet around, on the level ground, from which it gradually slopes for about thirty-five feet, when it makes a precipitous drop for nearly three hundred feet. As one approaches it on the level mesa where it is found, he has no idea of its existence, from anything visible. It is revealed in a moment in its weird awfulness; for a dark, apparently bottomless hole, suddenly opening up before one, is apt to convey the impression implied in the words "weird" and "awful." The first fifty feet is of volcanic rock, then there is a small bed of red clay resting upon sandstone which extends to the bottom. This and all the similar holes found in the region were undoubtedly formed by the dropping out of the bottom into some vast cave, which was made by the slow washing out of the limestone rock by water

chemically charged so as to rapidly decompose the limestone. Possibly one of the many subterranean rivers, of the existence of which there is plenty of evidence throughout Arizona, flows under Dante Descent.

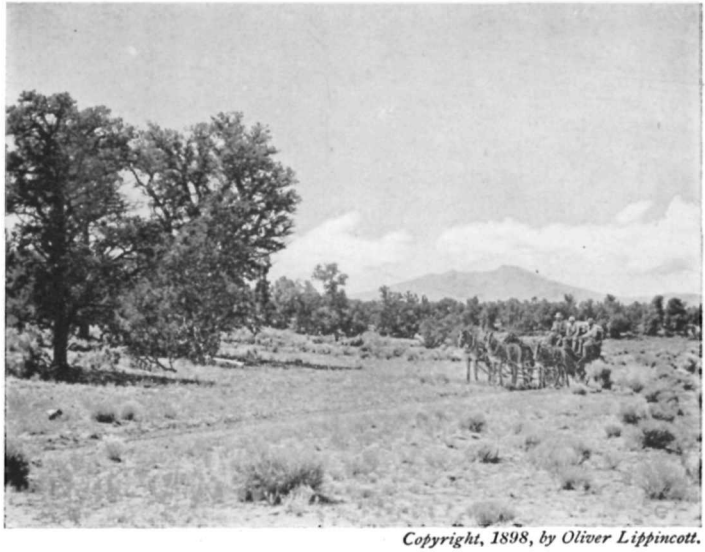
Through rolling hills, clothed with rich grama — black and white — and other grasses, a profusion of hardy wild flowers and the smaller brush, the four-horse stage of Mr. W. W. Bass leaves Ashfork for the Canyon. In less than half a mile we are in the midst of a restful forest, not composed of lordly pines, but of cedars and junipers, whose gnarled, twisted, and contorted branches are made picturesque in their rich clothing of green.

Many of the cedars present the appearance of being in blossom, decorated as they are with the great yellow parasitic bunches of mistletoe. The entire country is a rich pasture land. Everywhere is found the white grama grass, which grows in complete but irregular circles, leaving a little hollow in the centre, like a bird's nest. There is also the bunch, buffalo, mesquite, sand, and bear grasses, and even the beautiful blue grass. Besides the pinion and cedar there is the live oak, over whose acorns lively squirrels and gossiping jay-birds quarrel and chatter; the sage brush, grease wood, yucca, mesquite, mescal, and many varieties of cactus.

The road is fairly smooth and level, and a steady pace is kept up, which a slight run down hill scarcely interferes with. Twelve miles out Indian tanks are reached, where the Havasupai Indians long years ago built a rude dam to catch rain-water, that they might not be waterless when out hunting

so far away from their lovely canyon home, of which the blue water — Hahavasu — gives its name to both canyon and people.

To the left is Mount Picacho, and farther to the north, also on the left, Mount Floyd, an absolutely pure purple, almost black in its richness and in-



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THE FLAGSTAFF STAGE IN SIGHT OF THE SAN FRANCISCO MOUNTAINS.

tensity, — both with their memories of Lieutenant Beale, whose wagon road is crossed a little farther on, — while to the east and south are to be seen, now and again, as the hills open to permit the view, the more majestic piles of the San Francisco Mountains, Kendricks, Sitgreaves, and Williams. These mountains, at times, like masses of limpid purple velvet, are softly outlined against the cloud-flecked,

sunny sky, while beyond them the blue is shaded off into an amethystine violet by the cloud-hidden sun.

To our right, in solitary stateliness, rises the "Red Butte," which the Havasupais call Hue-ga-da-wi-za. Williams Mountain they designate Hue-ga-woo-la, the mountain of the bear, and the San Franciscos, Hue-han-a-patch-a, the snow-clad mountains. From these three names it will be apparent that Hue signifies mountain or rock — to the Indian — and the remaining portion of the name gives some special description.

For over twenty miles the road continues through Cedar Park, no more beautiful, gently rolling, tree-clad region existing in Arizona or elsewhere, and then we enter the western section of that great *Pintado Desierto*, the boundaries of which no topographer has yet had the temerity to define. But at this time it is no "desert." The coloring is here, but after the summer rains it is a vast grazing ground, where a multiplicity of herds and flocks might find ample nourishment for long months. The uncertainty of the rains and the doubtful permanence of the fertility of these vast plateaus, however, render them hazardous locations for large bands of animals. But now they are charming in their green dress, and we laugh at the expression "desert" as applied to them.

Many a time on the Painted Desert have I been deceived by a mirage in the glare of the midday sun, but seldom is it the good fortune of the traveller to see a moonlit mirage. One night, as I slept in the open near The Caves, I saw one and wrote as follows: About three miles away it appears,

a city on a plain, between two ranges of hills which are as diverse as they can be. The one to the right is the exact counterpart of the richly clad slopes of MacGillicuddy Reeks in the Emerald Isle, whilst the others are the barren, sand-worn hills that fringe the Libyan Desert. The delusion



LOOKING FOR THE CAVES.

is perfect. The city slowly forms itself, and domes, mosques, minarets, red-roofed houses, palaces with noble and imposing façades appear, as if an oriental city — Cairo or Alexandria — were placed before us. Now the palaces change to buildings of a business character, and before them a long quay extends, before which one can see the distinctive shipping of many nations. Waves caressed by silvery bands stretch to the right and left, whilst the two ranges of hills change and seem as if made of living gold.

Another change, then haziness, and the mystic scene disappears.

Almost midway between Ashfork and the Canyon we enter a slight depression, where the waters of Cataract Creek flow in the season of rains. A turn in the road and Cataract Caves — the halfway station — is reached, where a commodious tent has been constructed over the "Caves,"— called by the Havasupais Wai-mel, — caused by the dropping in of the surface to supply the never-satisfied Cataract Creek, which is here rasping out another and underground passage-way for its waters from Williams Mountain to the place of their emergence just above the Havasupai village. The Indians have a tradition that this stream, at one time, flowed entirely above ground from the mountains, down their canyon to the Colorado River, but that a long time ago "ground heap shake 'em, water he go down." Mr. Bass claims that here is a perfect illustration of the forces at actual work which account for the existence of the Grand Canyon, the theory of whose creation as expounded by Major J. W. Powell and Captain C. A. Dutton, and briefly outlined in a later chapter, he rejects. He says: —

"Hundreds of depressions, caves, and crevices are found along this channel, indicating that the earth's crust has been shattered and broken. A subterranean stream of 2000 cubic inches of water is here rasping out another great canyon, while these rents are protected from the corrosive force of erosion by the soil and débris that cover them. The flood waters of the winter snow and summer rain have eaten out a channel through this basin

of the Cataract, and in many places uncovered the volcanic rents in the earth's crust, opening up channels through which thousands of tons of the surface deposits are annually carried down into this subterranean river to make new land, where the water has no longer the power to hold it. This ceaseless industry will continue until the lateral exposure to heat, frost, wind, and rain begins its work of destruction. Disintegration will then be rapid, and the walls of this gap in the earth, that now are only a few inches removed from each other, will recede farther and farther apart until they have reached the shore line of this hidden stream, thus forming a narrow defile of perpendicular walls of immense depth."

Passengers generally remain at The Caves over night, the easy ride for two days being much preferred to rushing through to the Canyon in one day, although with four relays of horses, the journey can easily be made in eight to nine hours.

It is seldom that the second day's journey is made without seeing one or more bands of antelope. One morning, soon after we left The Caves, we saw, to the left, a herd of ten or twelve. The moment our attention was called to them, they began to run. They were not at all excited or alarmed, but, with easy, gentle motion moved from us, their short white tails distinctly contrasting with their whitey-brown bodies.

Returning with a companion from the Canyon on horseback in September, 1895, we saw four separate bands of antelope. In the first band were four, in the second thirteen, in the third sixteen, and in the fourth seventeen. They were all so tame and gentle that if one had been so minded, he could easily have shot one or more of each band. One band was in

the roadway about a quarter of a mile ahead of us and remained watching our approach with curiosity until we were within two or three hundred yards.

On one occasion, 1898, we were driving in the coach from the head of the Bright Angel Trail along the rim of the Canyon to the Grand View Trail. The road is wooded nearly all the way. When nearly opposite the amphitheatre upon which Thor Hammer and Cleopatra Needle stand, a large doe ran across our roadway not fifty yards ahead of us, then continued parallel with the road twenty or thirty yards away, ran to our rear for perhaps a quarter of a mile, and then resumed browsing. We kept her in sight for a long distance.

Many a time have I gone over this road in a heavy wagon in which were all our supplies for man and beast for a prolonged stay at the Canyon. We had to camp out and endure (or "enjoy," whichever we felt like calling it) the hardships, or pleasures, of sleeping wherever a pool of water made camping possible. And on such trips how one learns things! When I was a lad, a common, current expression was, "There 's nothing like leather." But to the Arizona pioneer and traveller it has become, "There 's nothing like baling wire." A single-tree breaks — tie it up with baling wire. A wagon pole snaps in two — make a splint and tie it on with baling wire. A tire comes off — slip it on and keep it in place with baling wire. Harness breaks — baling wire. Buttons come off — baling wire. Canteen-strap breaks — baling wire. Indeed, I am convinced that if some of the old-timers were left alone they would replace each portion of wagon, harness, and their

own clothing with baling wire, until, in the course of time, a new organization, constructed of nothing but baling wire, would come into existence.

Then, too, the tenderfoot here learns something of that strange operation of "hobbling a horse." The faith of these Arizona drivers is marvellous. With a pasture fenced on the west by the Pacific, on the east by the Atlantic, on the south by the Isthmus of Panama, and on the north by the Arctic Circle, they will turn their horses loose, upon which their lives actually depend, — for, to be left to walk over some portions of these deserts would certainly mean a horrible death, — and calmly and contentedly go to sleep. The situation is just this: Horses must eat, but men must sleep. If the former are tied up without food, it will not be long before travel becomes impossible. To carry feed, except perhaps a little grain, is out of the question. The only thing to be done is to "hobble" the horses and "turn them loose." There are patent hobbles and primitive hobbles, white men's hobbles and Indian's hobbles. To hobble a horse is to tie his forelegs together so that he cannot run swiftly, though he can hop with both forelegs raised at once, in a manner which makes him somewhat resemble a travelling kangaroo.

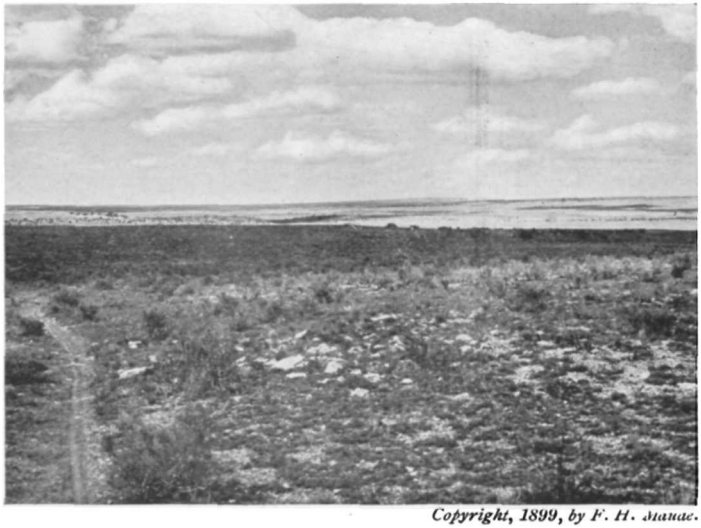
Then in the early morning the horses must be trailed, unhobbled, and brought back to camp. Some men will be gone half the morning looking for their stock. They are incapable of quick trailing. Others will have them in while you are still snoring, and you awake later without any knowledge of the early work that has been done on your

behalf. I have been out in company with both kinds of "trailers," so know both experiences. From my first trip, when Mr. Bass brought in the horses soon after sunrise, to the present time, his skill in following "tracks" has always been a source of wonderment to me, for he is as expert in it as any Indian it has ever been my good fortune to meet.

On that first trip we were going to the Grand Canyon, and then to Havasupai village, with a special Indian commissioner. I had been told it seldom rained in Arizona, but that day how it did pour! It came down in bucketfuls, and even the pockets of my linen duster were soon full of water. And as my horse loped on, I swashed in the water in every direction. But it was when he began to trot that the full misery of the situation was exposed. To be soaking wet, and to feel it as each bump of the saddle gave me a pressing and clinging reminder of the fact, was adding insult to injury. It was a situation for a Mark Tapley. Ahead drove Mr. Bass and the commissioner in the wagon, crouched over their knees and covered with a wildly waving umbrella; all conversation stopped. When I rode up and saw their countenances, I could believe them when they said they were as "miserable as sin." But over a rousing camp-fire, when night came, clear and beautiful, the discomforts were soon forgotten and pleasure resumed her sway.

Soon after leaving The Caves the traveller's attention is arrested by a striking view of a bold promontory to the north, which rises above all else in the landscape, looking as if it were thrust up for especial observation. It is *a* Point Sublime, not *the*

Point Sublime of Captain Dutton, which is a few miles farther east, but apparently the highest point the northern wall of the Grand Canyon presents. It is directly opposite Bass Camp, at the head of the Mystic Spring Trail, whither our steeds are fast hastening us. I have named it Dutton Point in



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DUTTON POINT FORTY MILES AWAY.

honor of the distinguished geologist and brilliant writer.

We cross the Moki Trail, that solitary line ruled across the Painted Desert centuries ago by the patient Pueblo Hopis as they passed and repassed to their trading with their friends of the "Down Below," the Kohoninos, as the Spaniards wrote the Kuhni-qui of the Zunis; the Havasupai, as they call themselves. We recall the vivid description given by Lieutenant Frank Cushing of his trip from Zuni, via

Hopi and over this trail to these " younger brothers " of the tribe into which he had been adopted, and are thankful that the hardships he endured in his trip are not likely to be ours.

When we strike the borders of the cedar and juniper forest on the northern end of our trip, we know we are not far away from the Canyon. Even our horses seem to find new life in that fact. A vast grassy field is entered, then the enclosed pasture, and after travelling three miles farther the tents of Bass Camp gleam white before us, when, suddenly, without a moment's warning, the stage stops by the side and at the very brink of the Great Abyss.

CHAPTER VII

TO THE CANYON BY RAILWAY, AND A FEW PRACTICAL SUGGESTIONS TO THE TOURIST

FOUR or five years ago the Tusayan Development Company of New York became interested in a group of copper mines located at no great distance from the head of the Bright Angel Trail. The promoter of the proposition was "Bucky" O'Neill, a prominent Arizona citizen, since made world-famous by his tragic death, when charging with the Rough Riders at the assault on San Juan. The New York company expended considerable money in developing and opening up the mines, and also interested other people with them in the work. As the Bright Angel Trail and Indian Gardens were near to the mines, the capitalists soon became interested in the Grand Canyon from the scenic standpoint, and, foreseeing the never-ending attraction it would prove to transcontinental tourists when made easily accessible, they secured control of the trail, and made negotiations and petitions which eventuated in their securing from Congress a grant for a railway through the Grand Canyon Forest Reserve. This railway is now built.

The mining company has already erected a large smelting plant at Williams, and it is from this point that the railway starts. Striking due north, it

passes over the masses of "malapais" until, when four miles out, it crosses one of the upper reaches of Havasu (Cataract) Creek. If the rains are just over, the whole country will be one mass of green and gorgeously beautiful wild flowers, with possibly here and there a healthful and interesting band of sheep. At other times the country may look rocky and barren, or be covered with a mantle of snow.

After crossing Havasu, the railway enters the cedars and junipers, passes Red Lake, — a volcanic sink-hole, which, at rare intervals, is filled with water, — and for ten or a dozen miles is in a series of charming parks where bands of deer and antelope are often seen.

All the way along glimpses and fine full views are being presented of the majestic San Francisco, Kendricks, and Sitgreaves Mountains, while Williams Mountain, with its seven wooded and rounded peaks, appears to grow larger the farther away we travel.

Twenty-nine miles out, near the station of Valle, is the big bridge, some fifty feet high and three hundred feet long, over a branch of the Spring Valley Wash; and here Red Butte becomes a prominent landmark to the right. This is known to the Havasupai Indians as Hue-ga-da-wi'-za, or the "Mountain of the Clenched Fist." It is upon this butte that a small fragment of the rich red of the Permian sandstone that once covered the whole Grand Canyon region is to be found; and when this is brilliantly illuminated by the unrestrained Arizona sunlight, it eloquently explains why Red

Butte for so long has been regarded as a prominent landmark of this portion of the Painted Desert.

For here the great plateau, stretching away to east and west, and once, undoubtedly, a portion of the vast Eocene Lake, is a part of that mysterious, unbounded, and alluring Painted Desert, the colors of which, seen under proper conditions, bewilder with their intensity while they attract by their richness.

Interesting stories might be told of Red Butte and its region. The Havasupais have a tradition that many years ago a large spring of water flowed from near its base, but that in a great convulsion of nature, which changed the current of the waters of Havasu (Cataract) Creek, the spring disappeared, and has never since been seen. The presence of a number of quaking aspens in the region, however, is reasonable indication that water is still there.

I am also informed that it was recently discovered, in looking over some titles in the old registers at Tucson, that silver mining was extensively carried on near Red Butte by the Spaniards about the year 1650 and later.

Crossing the Red Horse Wash, known to the Havasupais as Ha-i-ga-sa-jul'-ga, the line reaches Anita Junction. Here a spur three miles long connects the main line with the copper mines of the Anita, Cardenas, Nyack, and Five Friend companies. The grade of the spur has been so engineered that the loaded cars of ore from the mines are brought down by gravity.

When discovered, the ore deposits of these mines were found to be great surface blankets, the mineral

mainly consisting of carbonates of copper of from 10% to 20%. This ore was found in such large quantities as to justify extensive operations.

Further developments incline the mining experts to the theory that these blanket deposits are outflows from the interior of the earth made during some seismic disturbance, and that the main ore bodies will be found in dikes or chimneys through which the ejection took place. At present the miners are working upon an ore deposit which offers every indication of being one of these dikes. It has been excavated to a depth of over thirty feet, and the richness of the ore increases as the shaft descends. This supposed chimney is located on the "Hard Up" claim of the Anita group of mines. Relying upon this theory, a shaft 231 feet has already been sunk on the line of the Anita and Cardenas mines, from which it is the intention to tunnel out to the ore bodies which the experts are assured must exist.

In May, 1900, I personally visited the mines, and saw the workings and the ore dumps. The former showed many hundreds of tons of high grade ore in sight, and the latter contained not less than fifteen hundred tons of average ore, ready for reduction. It is interesting to note that in February, 1899, a shipment of non-selected ore was made to El Paso for reduction from the Anita mines, and the result was 13% in copper. A later shipment of one hundred tons of selected ore from the same camp secured a return of 21%.

Soon after leaving Anita Junction, the railway enters a most beautiful country of pine and juniper,

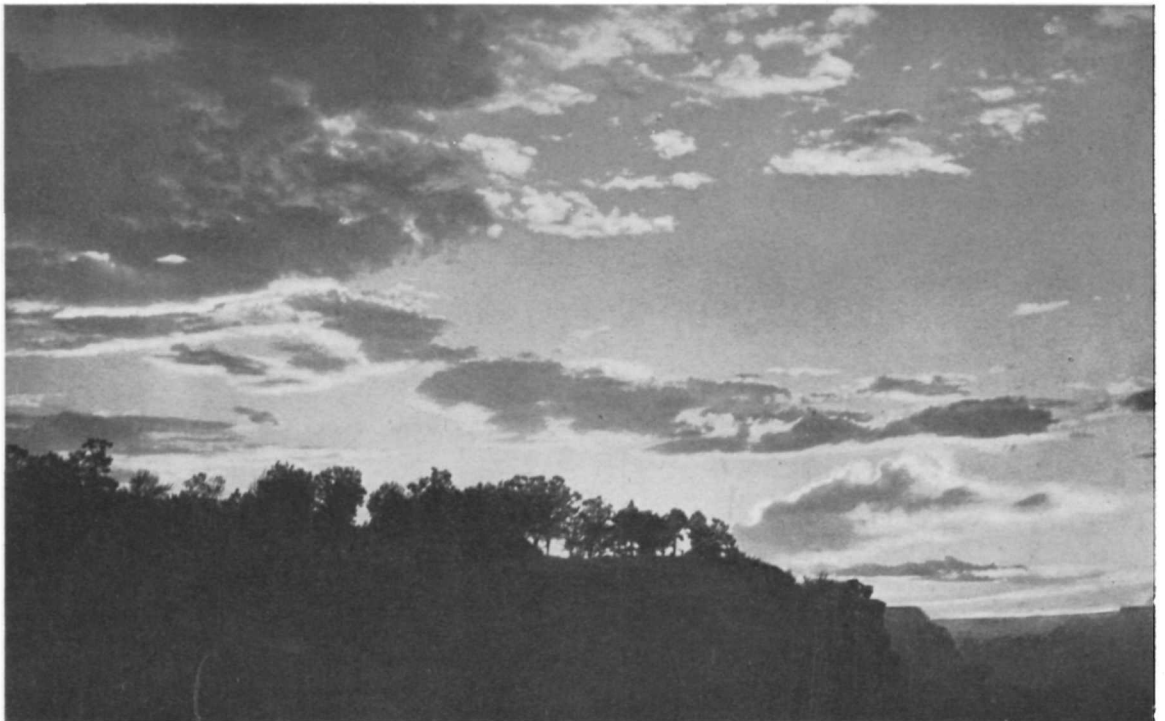


Photo by Oliver Lippincott.

SUNSET ON THE RIM OF THE GRAND CANYON.

a stately prelude to the majesties and grandeurs of the Kohonino (Coconino) Forest. Here it seems as if one were suddenly transported to England, and were passing through a succession of landed estates, without, however, finding the accompanying mansions. Aisles of stately trees, nature planted and grown, yet as perfectly in line as if set with mathematical precision, lead the eye into open glades where deer and antelope move to and fro, and one looks instinctively for the bold façade of an historic dwelling, or the battlemented towers of some romantic castle.

Now, bearing off in a westerly direction, the railway leaves the Kohonino Wash, and follows a pleasant little valley until within about two miles of Ha-ha-wai-i-tha-qual-ga, a natural well of clear, cold spring water, which is never dry, winter or summer. This well is reached up a well-wooded and picturesque "wash," and from thence, four miles through the forest, the enchanted passenger is landed at the Bright Angel Hotel.

This hotel is located in latitude 35° 55′ 30″. From the hotel to a point over Indian Garden named station A, the horizontal distance is 8,588 feet, and to a rock in the Colorado River on the same line is 17,356 feet. The exact vertical descent from the hotel to Indian Garden is 3,108 feet, and from the garden to the Colorado River, 1,390, giving a total descent from hotel to river of 4,498 feet,— practically, 5,000 feet. These are accurate measurements made by a skilled engineer.

The entire length of the railway, including the spur to the mines, is seventy miles, and so easy is

the grade that nowhere does it exceed 3%. The engineering work is without any distinctive features.

The intelligent visitor will not fail to remark, in riding toward the rim, that the Canyon itself is not the immediate watershed of its own banks. The country both north and south of the Canyon slopes back from the rim, so that the anomaly is presented of a river which does not drain the country contiguous to its own banks, except in an indirect way. The water flows *from* the rim many miles, and there empties, on the south, into either the Havasu (Cataract) Canyon or the Little Colorado, and these streams having rasped their way down, down, down, through the thousands of feet of solid strata, finally discharge the waters they have collected into the turbid stream of the *Colorado Grande*, which sullenly roars in the depths of the Grand Canyon.

This fact, and many other indications found in the development of the mines, incline their proprietors to the seismic theory of the Canyon's formation rather than that of corrasion and slow uplift, as propounded by Powell and Dutton. It seems to them that the Canyon is located on the axis of a great uplift, that trends generally from the northeast to the southwest, and they claim that this slope of the country away from the Canyon, both north and south, helps to confirm their idea.

Be this as it may, the fact is evident, and it is a source of regret that the government maps do not make it more plain to the tyro in map reading: for, several prospectors, trusting to the ordinary

reading of the maps, have gone out expecting water, only to be disappointed almost to the point of death.

It is too early yet to prophesy what will be done in the way of hotel building, but it is reasonable to assume that a good hotel will be erected at Williams, and one at the head of the trail. This latter should be of the rustic and wild character, — rough logs, uncut boulders of the canyon stone, deep recessed porches, cavernous fireplaces, and the like. Then at Angel Point, on Angel Plateau, overlooking the raging waters of the Inner Gorge, another hotel of the more conventional type might be erected to good advantage. From it carriage roads could be constructed for a hundred miles or more, affording unexampled opportunities for observation and study of this wondrous waterway when two thousand to three thousand feet below the rim. The trail to the river has been much improved. Wire cables probably will be stretched across the Inner Gorge, to which boats can be attached, and thus the clear, sweet, medicinal waters of the Bright Angel Creek be made accessible.

On the rim, carriage roads can be extended eastward to the Grand View Hotel and Trail, and out even as far as the Little Colorado River, and westward to Havasupai Point, Bass Camp, the Mystic Spring Trail, Wallapai Point, and on to the head of the Topocobya, Moki, or Wallapai Trails to Havasu (Cataract) Canyon, thus making accessible the waterfalls of that scenic region and allowing the visitor to see in his own home the little known Havasupai Indian.

A Few Practical Suggestions to Canyon Tourists

There are different classes of tourists. Some are anxious to see and know as much of the Canyon as possible, but are short of time; others have all the time there is, but merely visit the Canyon as a perfunctory performance, "because it is the proper thing to do." Still others have both time and desire. My suggestions are to the first and third classes.

If, then, you are in a hurry, and wish to see as much of the Canyon as possible in a short time, plan at least for three days. The first of these spend on the rim, riding eastward to O'Neill, Yaki, and Cremation Points. Visit also Mallery Grotto, where the Indian pictographs are. The second day spend westward. Go out to Pima, Maricopa, Hopi, and Cyclorama Points. The third day give to the trail, making the trip to and from the river. Or, perhaps it would be advisable to make this trip on the second day, and take the western trip last.

If you have abundance of time and wish to *know* this portion of the Canyon, make arrangements to go eastward to the Grand View Trail, which descend. Then go as far as Navaho Point, or, if the wagon or bridle road is completed, go to the Little Colorado River, where you can see the junction of the smaller river with its great namesake, the mouth of Marble Canyon, and the great nonconformity in the pre-Cambrian rocks, which is so fascinatingly described by Powell, Dutton, and Walcott in their respective works.

Now, returning to Bright Angel Hotel, arrange for the descent of the trail, and, if possible, a day on Bright Angel Creek on the other side of the river.

In the mean time, plan with Mr. W. W. Bass of the Mystic Spring Trail for a western trip which will take in Pima, Maricopa, Hopi, and Cyclorama Points, with all the other interesting points between Cyclorama and Havasupai Points, which latter, as I have elsewhere shown, is the chief outlook point of the whole south wall. Descend the Mystic Spring Trail, cross the river to the Shinumo Creek, and ascend the north wall on the Bass — Shinumo — Trail. Then, on the summit of the Kaibab Plateau visit Point Sublime, where Captain Dutton sat when he wrote so poetically of the Canyon, and yet so learnedly and scientifically. Now return to Bass Camp, and from thence go to Havasu Canyon to see the Havasupai Indians, their most wonderful canyon home, and the charming waterfalls and caves that entrance all who see them.

The tourist who makes such excursions as I have here briefly outlined, and who uses his eyes and brain to good advantage, will have a fuller and clearer knowledge of the Canyon than was possessed by any white man of ten years ago.

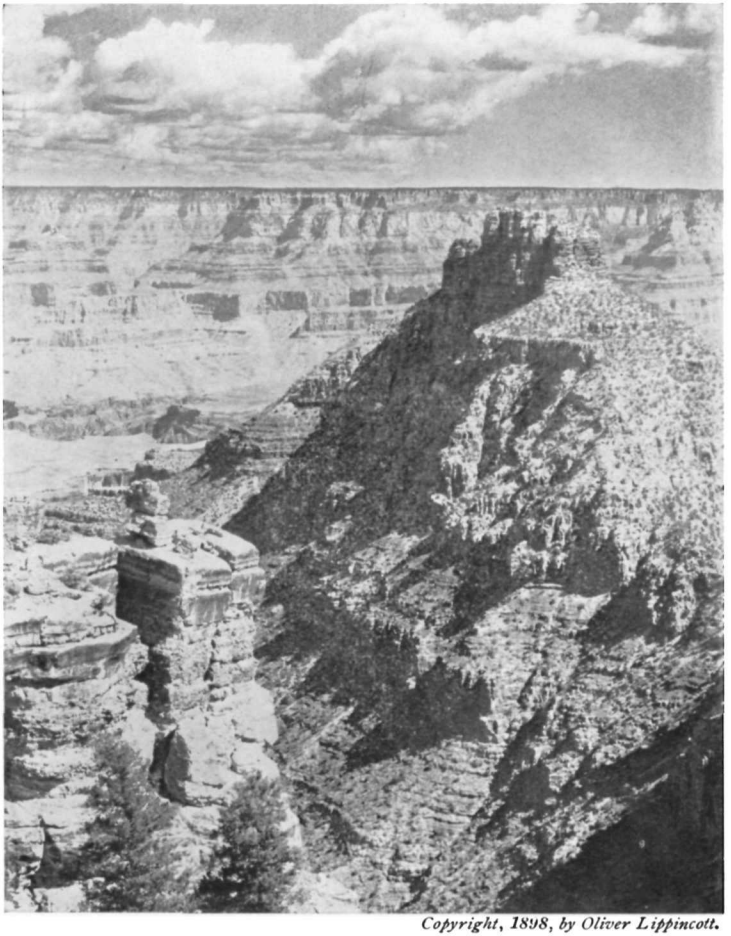
CHAPTER VIII

FIRST IMPRESSIONS

IN local parlance the upper edge of the precipice walls that line the Canyon is called the "rim." We never speak of the "edge" of the Canyon, or the "banks" of the Colorado River.

It is a popular idea that the Canyon is through a country of mountains. This is a mistake. Instead, it cuts through a series of great plateaux, known on the north as the Kaibab, Powell, and Kanab Plateaux, and on the south as the Colorado Plateau. The singularity of this formation is such that one does not discover the existence of this vast waterway, as he journeys northward or southward, until he is on its very brink. Hence, the tremendous and startling surprise that awaits every visitor. The Canyon springs upon him with the leap of a panther, and, suggesting a deserted world, yawns at his feet before he is aware that he is within miles of it. It overwhelms him by its suddenness, and renders him speechless with its grandeur and magnificence.

No reading, no descriptions, no pictures, no warnings can prepare the mind for that one first stupendous, overwhelming impression. Here are the impressions of a few travellers: —



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AYER PEAK, OVERLOOKING THE OLD TRAIL.

"Tired as we were, we could not wait. It was only to ascend the little steep, stony slope, — three hundred yards — and we should see! Our party were straggling up the hill: two or three had reached the edge. I looked up. The duchess threw up her hands and screamed. We were not fifteen paces behind, but we saw nothing. We took the few steps, and the whole magnificence broke upon us. No one could be prepared for it. The scene is one to strike dumb with awe, or to unstring the nerves; one might stand in silent astonishment, another would burst into tears.

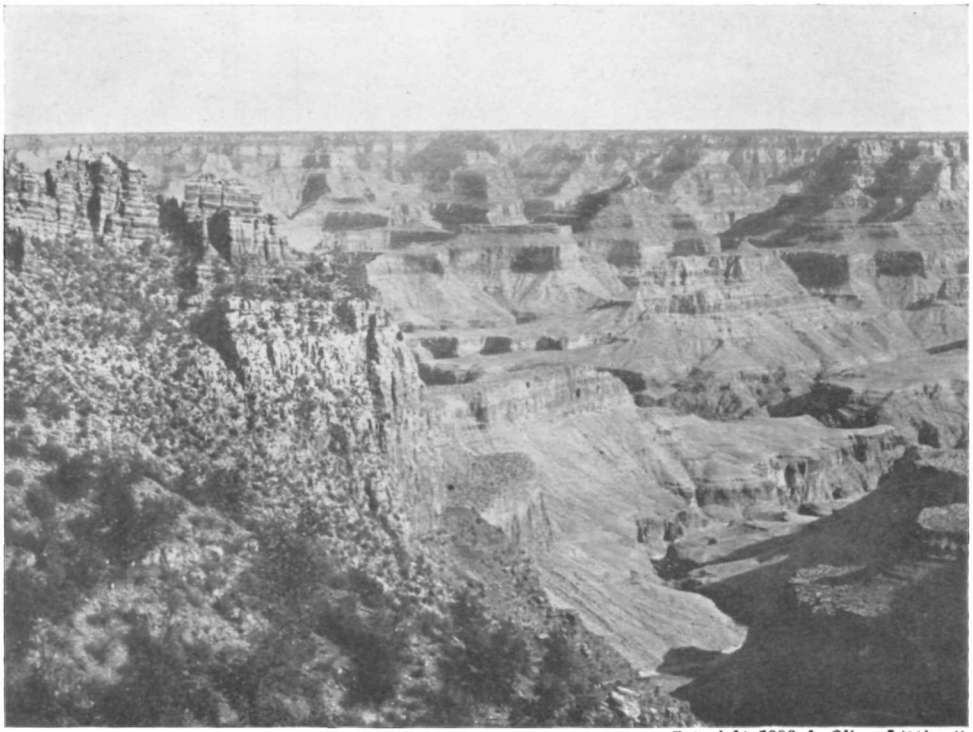
"There are some experiences that cannot be repeated, — one's first view of Rome, one's first view of Jerusalem. But these emotions are produced by association, by the sudden standing face to face with the scenes most wrought into our whole life and education by tradition and religion. This was without association, as it was without parallel. It was a shock so novel that the mind, dazed, quite failed to comprehend it. All that we could grasp was a vast confusion of amphitheatres and strange architectural forms resplendent with color. The vastness of the view amazed us quite as much as its transcendent beauty.

"We had expected a canyon,— two lines of perpendicular walls six thousand feet high, with the ribbon of a river at the bottom; but the reader may dismiss all his notions of a canyon, indeed, of any sort of mountain or gorge scenery with which he is familiar. We had come into a new world. What we saw was not a canyon, or a chasm, or a gorge, but a vast area which is a break in the plateau. From where we stood it was twelve miles across to the opposite walls. We looked up and down for twenty to thirty miles. This great space is filled with gigantic architectural constructions, with amphitheatres, gorges, precipices, walls of masonry, fortresses terraced up to the level of the eye, temples, mountain size, all brilliant with horizontal lines of color, — streaks of solid hues a few feet in width, streaks a thousand feet in width, — yellows, mingled

white and gray, orange, dull red, brown, blue, carmine, green, all blending in the sunlight into one transcendent suffusion of splendor. Afar off we saw the river in two places, a mere thread, as motionless and smooth as a strip of mirror, only we knew it was a turbid, boiling torrent, six thousand feet below us. Directly opposite the overhanging ledge on which we stood was a mountain, the sloping base of which was ashy gray and bluish; it rose in a series of terraces to a thousand-feet wall of dark red sandstone, receding upward, with ranges of columns and many fantastic sculptures, to a finial row of gigantic opera-glasses six thousand feet above the river. The great San Francisco Mountain, with its snowy crater, which we had passed on the way, might have been set down in the place of this one, and it would have been only one in a multitude of such forms that met the eye whichever way we looked. Indeed, all the vast mountains in this region might be hidden in this canyon.

"Wandering a little away from the group and out of sight, and turning suddenly to the scene from another point of view, I experienced for a moment an indescribable terror of nature, a confusion of mind, a fear to be alone in such a presence. With all this grotesqueness and majesty of form and radiance of color, creation seemed in a whirl. With our education in scenery of a totally different kind, I suppose it would need long acquaintance with this to familiarize one with it to the extent of perfect mental comprehension." — CHARLES DUDLEY WARNER.

"Suddenly the awful majesty of the Grand Canyon is revealed to his startled vision. There before him lies the mighty red rift in the earth, the most stupendous gorge within the knowledge of man. The mind is spellbound by the spectacle; the voice is silent; the heart is subdued; the soul turns in profound reverence to the Almighty, whose handiwork is here seen on a colossal scale. No matter how many descriptions of the Grand Canyon may have been previously read by him who sees it for



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TWO OF THE "THREE CASTLES," OVERLOOKING THE OLD TRAIL.

the first time, its profound depths, its colossal heights, its myriad and matchless colors, its brilliant hues, its striking lights and shades, its mighty sinuosities, and its altogether grand ensemble will fill the beholder with a mingled sense of awe, wonder, admiration, and reverence.

" I can well believe that the river took its name, Colorado (red) from the prevailing hue of its walls, rather than from the color of the water, which is not red.[1]

" Here is a mighty opening in the earth, whose capacity in cubic feet must be measured by some mathematician not yet born upon the earth, for the man does not live who can make the figures. Imagine, if you can, all the armies of all the nations of the earth, marching in solid columns from opposite sides of this appalling gorge to meet each other in battle array, unconscious of the existence of this spot until too late to save themselves from being swallowed up in its abysmal depths; imagine all these vast bodies of men, with all the guns, all the horses, — infantry, cavalry, artillery, sappers, miners, and pontoniers, — all the transportation trains, and all the impedimenta of an army, together with all the buildings of all the cities of the world, — imagine all this vast aggregation of men and material thrown into this immeasurable abyss, and the Grand Canyon would still remain unfilled for its entire length, and the Colorado River would continue to flow unintercepted on its reckless course to the sea. In its measureless, cruel, insatiable maw all would be swallowed up." — HARRISON GRAY OTIS.

" The first impression is awful (in the true sense of the word). The party seemed to be standing in mid-air, while below, the dark depths were lost in blackness and mystery. They were within a few feet of what seemed to be a great bottomless pit. In the distance rocky peaks could be seen rising out of the vast nowhere. Several of the party

[1] It is not a brilliant red, but it certainly is generally of a reddish tinge, owing to its being surcharged with so large a quantity of oxydized sandstone mud. — *Note by the Author.*

were convinced that the wind shook the overhanging rock on which they stood, and consequently all of them beat a hasty retreat.

"The next morning a very different scene met the eyes of the early risers. Instead of blackness there were beauty and color of which they had hardly dreamed. The Canyon, at all times majestic and dreamy, spread forth so many



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THE THREE CASTLES, OVERLOOKING THE OLD TRAIL.

hues of purple, red, and yellow softly blended together, that a new feeling of awe swept over the gazers, and they stood speechless. It would almost seem that Nature had accidentally dropped an armful of rainbows, and being so well pleased with the effect, had left them there, to charm our mortal eyes." — PAULINE CURRAN.

To see women burst into tears and in a tremble of ecstatic fear is a common sight. And to men and women alike impressions of that first glimpse often follow them into the realms of sleep. One

lady confessed that "it haunted her in her dreams, and it was only by a fortunate awakening that she escaped going over a twenty-five hundred foot precipice during the night — in her dream."

Another visitor wrote: —

"There was nothing in the topography of the country, or the general surroundings, to indicate that we were within miles of Nature's greatest of wonders, until all of a sudden the low-browed forest of cedars vanished from our sight; the stage came suddenly to a halt within six or eight feet of a yawning depth two thousand or more feet to its bottom, and such a panorama as was presented to our view, words cannot describe. Fatigue and gloom were forgotten; the fury of the storm and the merciless beating of the rain were unheeded, and there we sat and gazed awe-stricken, speechless, at the Grand Canyon of the Colorado. What emotions fill the soul; what thoughts crowd the mind, as the eye conveys its first impress of this most marvellous of all wonders to the brain! One's powers of articulation are paralyzed. Speech would be useless and language a mockery to attempt to describe one's emotions. They may, and even in some stout hearts often do, find vent in tears, but after the first ejaculation of surprised delight and admiration, seldom, or never, in words."

Far more instantaneously than the fairy transformation scenes in a pantomime emerge from the stage darkness the great view is unrolled. In this regard the approach to the Canyon by Bass Camp is immeasurably superior to any other. It is dramatic, awe-inspiring, overpowering. There is no waiting, no walking from hotel to rim. *Instantly* — more like magic than reality — the scene, which *is* magical, mystical, ideal, and yet supremely natural, is in full view.

CHAPTER IX

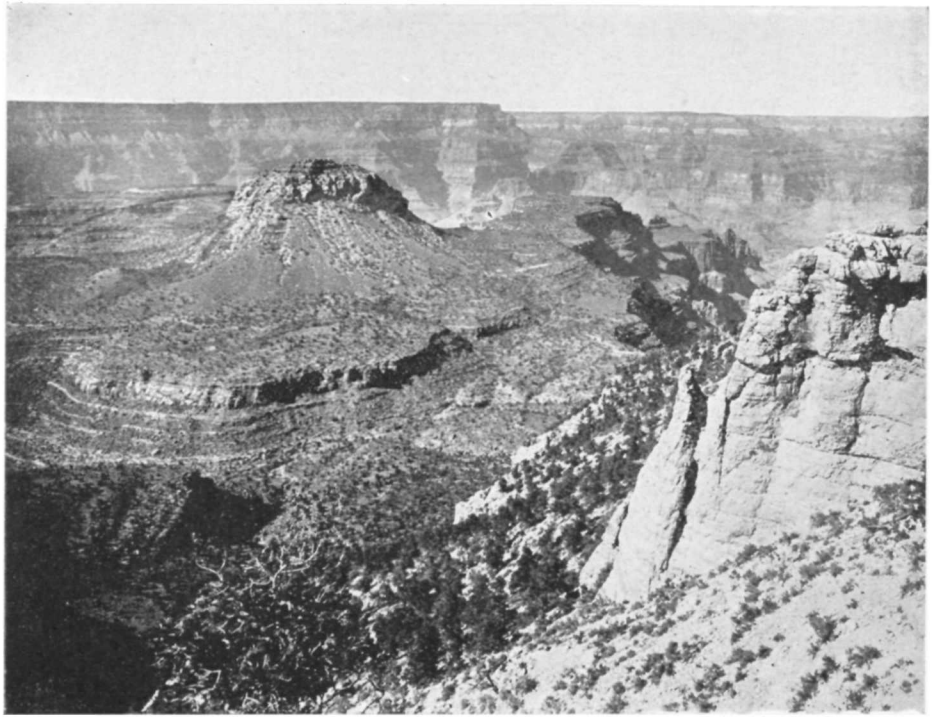
WHAT DOES ONE SEE?

BUT what is it the spectator really sees that produces such impressions as those recorded above?

An easy question to ask, but far from easy to answer. There are so many factors to the sum of emotions, so many diverse powers working upon the more diverse minds of the diverse seers. Let some of them speak for themselves.

"No poet's tale of joy or sorrow, love or death, casts its witchery over the picture; these silent mountain peaks and deep, impenetrable canyons are associated with no heroic action, no sublime despair. The Canyon stands out before you in its simple majesty; its wonderful beauty, vast dimensions, and untold ancientness appealing only to your æsthetic sense. All the colors of the rainbow combine to make a panoramic picture, fifty miles long, of vast forms, in which all known styles of human architecture are blended in profuse and chaotic magnificence, — Ionic, Corinthian, and Doric pillars, a wilderness of pyramids, towers, and temples, pinnacles, spires, domes, and Egyptian obelisks — a chaos of rock in all conceivable shapes.

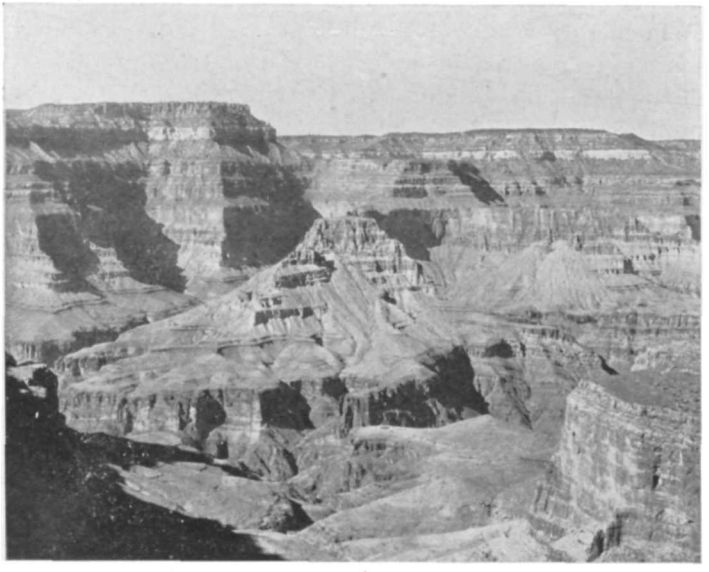
"Its chaotic immensity utterly bewilders the senses, and fills the soul to overflowing with awe and admiration for the marvellous achievements of the God of nature. Its matchless sublimity, divine grandeur, infinite beauty, are far beyond the comprehension of the finite mind. Man's



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MOUNT OBSERVATION AND DUTTON POINT FROM SURPRISE OUTLOOK.

capacities are too limited to fully grasp and appreciate what is here unveiled. The man of letters is appalled as he gazes down into its depths. The artist relapses into despair as he views the numberless cliffs, pinnacles, spires, domes, obelisks, pagodas, and measureless amphitheatres, with all their wealth of coloring, the secret of whose blend-



DUTTON POINT AND MASONIC TEMPLE FROM THE GRAND SCENIC DIVIDE.

ing is known only to the Creator. The geologist is amazed and delighted as he contemplates his surroundings, and he sees how the Stone Book of Nature has been opened for his delectation.

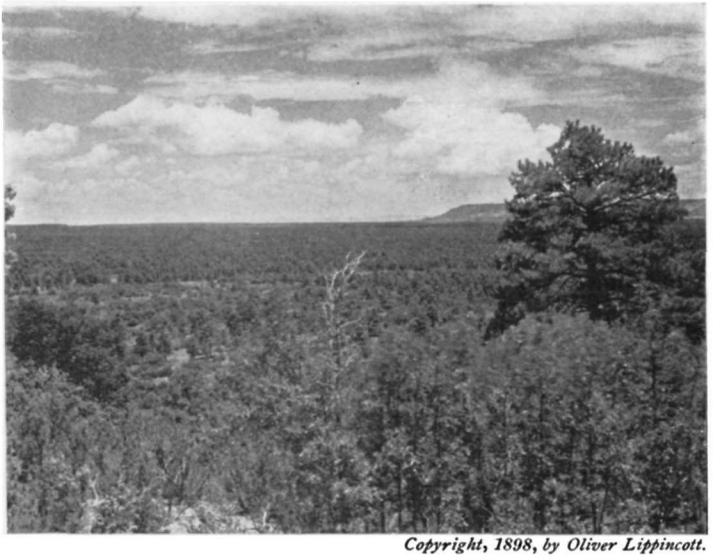
"Never before has he been permitted to gaze on so much of the physical geology of the earth at one glance. Nowhere else can he find such an elaborate and exhaustive treatise on dynamics as in the Grand Canyon of the Colorado. More than six thousand feet of sedimentary

formations are plainly visible at a single glance, representing periods of geological time that utterly defy mathematical calculation or human conception." — J. C. MARTIN.

"An inferno, swathed in soft celestial fires; a whole chaotic under-world, just emptied of primeval floods and waiting for a new creative word; a boding, terrible thing, unflinchingly real, yet spectral as a dream, eluding all sense of perspective or dimension, outstretching the faculty of measurement, overlapping the confines of definite apprehension. The beholder is at first unimpressed by any detail; he is overwhelmed by the ensemble of a stupendous panorama, a thousand square miles in extent, that lies wholly beneath the eye, as if he stood upon a mountain peak instead of the level brink of a fearful chasm in the plateau whose opposite shore is thirteen miles away. A labyrinth of huge architectural forms, endlessly varied in design, fretted with ornamental devices, festooned with lace-like webs formed of talus from the upper cliffs, and painted with every color known to the palette in pure transparent tones of marvellous delicacy. Never was a picture more harmonious, never flower more exquisitely beautiful. It flashes instant communication of all that architecture, and painting, and music for a thousand years have gropingly striven to express. It is the soul of Michael Angelo and of Beethoven.

"That river channel, the profoundest depth, and actually more than six thousand feet below the point of view, is in seeming a rather insignificant trench, attracting the eye more by reason of its sombre tone and mysterious suggestion than by any appreciable characteristic of a chasm. It is nearly five miles distant in a straight line, and its uppermost rims are three thousand feet beneath the observer, whose measuring capacity is entirely inadequate to the demand made by such magnitudes. One cannot believe the distance to be more than a mile as the crow flies, before descending the wall or attempting some other form

of actual measurement. Mere brain knowledge counts for little against the illusion under which the organ of vision is here doomed to labor. That red cliff upon your right, darkening from white to gray, yellow and brown as your glance descends, is taller than the Washington Monument. The Auditorium in Chicago would not cover one-half its



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KOHONINO FOREST AND POINT FROM NEAR COMANCHE POINT.

perpendicular span. Yet it does not greatly impress you. You idly toss a pebble toward it, and are surprised to note how far the missile falls short. Subsequently you learn that the cliff is a good half-mile distant. If you care for an abiding sense of its true proportions, go over to the trail that begins beside its summit, and clamber down to its base and back. You will return some hours later, and with a decided respect for a small Grand Canyon cliff. Relatively it is insignificant; in that sense your first estimate was correct. Were Vulcan to cast it bodily into the chasm directly beneath your feet, it would pass for a

boulder, if indeed it were discoverable to the unaided eye. Yet the immediate chasm itself is only the first step of a long terrace that leads down to the innermost gorge and the river. Roll a heavy stone to the rim and let it go. It falls sheer the height of a church or an Eiffel Tower, according to your position, and explodes like a bomb on a projecting ledge. If, haply, any considerable fragments remain, they bound onward like elastic balls, leaping in wild parabola from point to point, snapping trees like straws, bursting, crashing, thundering down until they make a last plunge over the brink of a void, and then there comes languidly up the cliff sides a faint, distant roar, and your boulder that had withstood the buffets of centuries, lies scattered as wide as Wycliffe's ashes, although the final fragment has lodged only a little way, so to speak, below the rim." — C. A. HIGGINS.

"Here are great mansions, built high and secure upon rock-walled spaces; more temples of the Greek, the Roman, the Egyptian; more modern churches; more villages; more turret-crowned castles; gigantic esplanades upon which might be manœuvred the armies of the world's most powerful nations; beetling cliffs that tower up to the blue horizon and bathe their feet in the murky river; great dumps of disintegrated rock like waste from mammoth mines; piles of material stacked up ready to build a hundred Londons; great palisades that in comparison make the palisades of the Hudson as but a baby's finger mark on the wall. All these one sees and notes as the shadows lengthen from the mountain which sits enwalled in the canyon below him." — UNKNOWN.

"The Grand Canyon of the Colorado is a great innovation in modern ideas of scenery, and in our conceptions of the grandeur, beauty, and power of nature. As with all great innovations, it is not to be comprehended in a day or a week, nor even in a month. It must be dwelt upon and studied, and the study must comprise the slow acquisition

of the meaning and spirit of that marvellous scenery which characterizes the Plateau country, and of which the great chasm is the superlative manifestation. The study and slow mastery of the influences of that class of scenery and its full appreciation is a special culture, requiring time, patience, and long familiarity for its consummation. The lover of nature, whose perceptions have been trained in the Alps, in Italy, Germany, or New England, in the Appalachians or Cordilleras, in Scotland or Colorado, would enter this strange region with a shock, and dwell there for a time with a sense of oppression, and perhaps with horror. Whatsoever things he had learned to regard as beautiful and noble he would seldom or never see, and whatsoever he might see would appear to him as anything but beautiful and noble. Whatsoever might be bold and striking would at first seem only grotesque. The colors would be the very ones he had learned to shun as tawdry and bizarre. The tones and shades, modest and tender, subdued yet rich, in which his fancy had always taken special delight, would be the ones which are conspicuously absent. But time would bring a gradual change. Some day he would suddenly become conscious that outlines which at first seemed harsh and trivial have grace and meaning; that forms which seemed grotesque are full of dignity; that magnitudes which had added enormity to coarseness have become replete with strength and even majesty; that colors which had been esteemed unrefined, immodest, and glaring, are as expressive, tender, changeful, and capacious of effects as any others. Great innovations, whether in art or literature, in science or in nature, seldom take the world by storm. They must be understood before they can be estimated, and must be cultivated before they can be understood.

"It is so with the Grand Canyon. The observer who visits its commanding points with the expectation of experiencing forthwith a rapturous exaltation, an ecstasy arising from the realization of a degree of grandeur and

sublimity never felt before, is doomed to disappointment. Supposing him to be but little familiar with plateau scenery, he will be simply bewildered. Must he therefore pronounce it a failure, an overpraised thing? Must he entertain a just resentment towards those who may have raised his expectations too high? The answer is, that subjects which disclose their full power, meaning, and beauty as soon as they are presented to the mind have very little of those qualities to disclose. Moreover a visitor to the chasm or to any other famous scene must necessarily come there (for so is the human mind constituted) with a picture of it created by his own imagination. He reaches the spot, the conjured picture vanishes in an instant, and the place of it must be filled anew. Surely no imagination can construct out of its own material any picture having the remotest resemblance to the Grand Canyon. In truth, the first step in attempting a description is to beg the reader to dismiss from his mind, so far as practicable, any preconceived notion of it." — C. A. DUTTON.



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LOOKING EAST FROM PAIUTI POINT. THREE CASTLES, AYER PEAK, COMANCHE AND NAVAHO POINTS TO THE RIGHT; VISHNU TEMPLE, CAPE FINAL, AND SHINTO TEMPLE TO THE LEFT.

CHAPTER X

ON THE RIM

a. The View from Comanche (Bissell), Ute (Moran), and Paiuti (Grand View) Points.
b. Hopi Point.
c. Surprise Outlook — Bass Camp.
d. Eastern Outlook from Havasupai Point.
e. Western Outlook from Wallapai Point.
f. Pillars of Erosion.
g. Various Impressions.

a. The View from Comanche (Bissell), Ute (Moran), and Paiuti (Grand View) Points

THESE are the three chief points of the canyon region originally reached by stage from Flagstaff. While there are slight differences in the outlooks from these points, the general effect is much the same. In one distinctive feature the views presented from these three points surpass any that may be seen elsewhere. This is in the apparent *profusion* and *close proximity* of the great buttes and temples that fill up so much of the space on the north side of the river. Vishnu Temple, — the greatest piece of sculpture in the Canyon, — Newberry Terrace, Solomon Throne, Shinto Temple, and several others, are in close and full view, and make a marvellous

spectacle. I shall not attempt any lengthened or detailed description of the Canyon at these points, as, in all general features the Eastern Outlook from Havasupai Point covers all that the visitor sees here.

The massive temple that ever forces itself upon the vision, whether on the Red Canyon, the Old, the Grand View, or the Bright Angel Trails, is Vishnu Temple, and the detached portion of the great Kaibab Plateau slightly to the west has been named Newberry Terrace, from the great geologist who first propounded the theory that water and the uplift of the continent accounted for the existence of the Canyon.

It has so often been claimed that Point Sublime is opposite the Flagstaff-reached camps that it will be a surprise to many who have visited the Canyon at these points to learn that they have been misinformed. The point seen is Cape Final; the Point Sublime of Captain Dutton being some forty miles farther west.

Opposite the Hance Camp the three rock masses on the left of the Canyon down which the Old Trail reached the river have been named the "Three Castles," and the towering mountain to the right has long borne the name Ayer Peak, in honor of Mrs. E. E. Ayer, of Chicago, who was the first white woman to descend the Canyon at this point.

From all these three Points a wonderful portion of the beginning of the Grand Canyon is seen, as one looks eastward towards the great wall which denotes the entrance of the Little Colorado.

"This first section of the Grand Canyon, from the Little Colorado to the beginning of the Granite Gorge, some

eighteen miles in distance, is one of great interest. The whole section seems to have been upturned, tumbled over, and mixed in every imaginable shape, some of the oldest and newest formations standing side by side, showing most gorgeous coloring of mineralized matter, from dark purple and green to bright red and yellow. The river runs through quite a wide valley, with bottom lands and groves of mesquite. The top walls of the Canyon are miles and miles apart, and hills and knobs rise between the river and the walls beyond, these being separated by deep washes and gulches running in every direction." — R. B. STANTON.

From Comanche (Bissell) Point a wonderful view is had — down the river — of the Inner Gorge. The distance is about seventeen miles, and the length of the river exposed is nearly three miles, — a strip of glistening dirty brown in the depths of the dark and forbidding granite.

(*b*) HOPI POINT

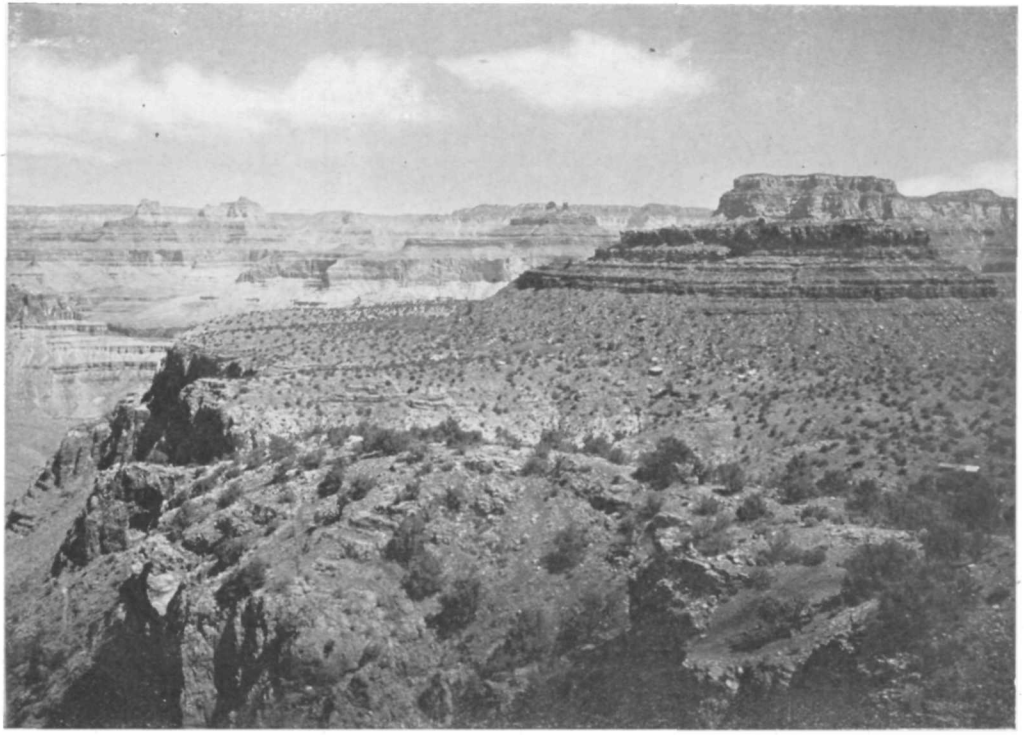
The chief points of observation on the rim near the Bright Angel Hotel are, to the east, O'Neill and Cremation Points, and to the west, Maricopa, Hopi, and Cyclorama Points. All these are well worth a visit. The eastern views are practically the same as those already described, but the general outlook from Hopi Point requires more detailed description.

Standing on Hopi Point, one naturally looks first of all for the river. It is clearly discernible in five places. Looking eastward, short stretches both east and west of Pluto Pyramid are exposed. To the west of Mahomet Temple is a small peep-

ing eye of river, which seems as if it could be covered with one's handkerchief. This is "the Eye of the Colorado." Another small stretch is seen at the end of Cyclorama Point, and then, beyond the end of Cope Plateau a view is obtained of at least three miles of the muddy, turbulent waters of this maddest of all mad rivers.

Now pick out all the buttes and temples described in the chapter on the Bright Angel Trail, and the points east and west that force themselves upon the attention. Eastward are Pima, O'Neill, Yaki, Comanche, and far away Navaho. Across the river are Vishnu Temple and Newberry Terrace. Standing between these great structures and ourselves are the buttes that make up the interesting Angel Gate, which I so named on account of the following legend.

In an earlier chapter reference has been made to the mythology of one of the Paiuti tribes, which accounts for the creation of the great gorge. Some day the gods — Those Above — will return to the earth, and "Angel Gate" is to be their place of descent from the "shadow world above" to the "world of the here" below. This "gate" may be seen from several of the trails and outlook points on the rim, and the following is the story the Indians tell about it. While their ancestors settled in these regions under the direct guidance of "Those Above," they ever believed and taught their descendants that some day, some time, the gods would return to the earth and lead them into a far more beautiful, fertile, and better watered land, where seeds, fruits, flowers, vegetables, roots,



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ANGEL GATE, NEWBERRY TERRACE, BUDDHA AND ZOROASTER TEMPLES FROM THE GRAND VIEW PLATEAU.

trees, and game of every kind would abound, and where the Indians would find an earthly home, a fit foretaste of their spirit home. But the gods told no one exactly when this visit to the earth was to be made, so it has been the duty of certain Shamans, or medicine men, on given days of the year to watch for their coming. And it is through this gateway they will come. So the Indians call it "The Entrance or Gateway of the People of the Shadows," and the priests sit where they can watch "Angel Gate" from the rising to the setting of the sun, that they may be ready to warn their people when Those Above come to lead them from their present homes of poverty, toil, and ceaseless struggle to their new and blessed homes of plenty, comfort, and rest.

Just beyond Yaki Point, where the Battleship Oregon stands, carved in imperishable stone, in the heart of the Canyon, is a long terrace of the red sandstone with a sharp, detached butte at the north end. This is Gilbert Terrace, so named after the accomplished geologist who, when with the Wheeler Survey, made the ascent of the Colorado in its very jaws up as far as Diamond Creek. The record of this trip is practically unknown, but it is as fascinating a chapter as any in American exploring annals.

The Battleship Iowa is also clearly seen from here, and, below it is a small red sandstone plateau named Marsh Plateau, in honor of the great paleontologist; and as a similar plateau is found at the extremity of Cyclorama Point, it has been named Cope Plateau, after his great rival in the paleontological field.

If the atmosphere is in a suitable condition, Manu Temple is clearly defined against the wall of the Kaibab Plateau, here known as the Haunted Mesa, where Phantom Creek has its rise.

To the north and west of Shiva Temple is a massive square rock-pile which I have named Holmes Tower, after that most genial and accomplished scientist in so many branches, Mr. W. H. Holmes. Geology not only owes him much for his charming drawings, which embellish Captain Dutton's canyon report, but archæology and ethnology are his great debtors, as a cursory survey of the reports of the Bureau of Ethnology will reveal. And it seemed most appropriate that one of the great canyon monuments, which stood almost under his eyes as he sat on Point Sublime making his inimitable drawings, should receive his name.

West of Confucius Temple is another great butte which is named Becker Butte, and between this and Holmes Tower, at the western extension of Shiva Temple, is Russell Butte, so named after the geologist who traced the beaches of the prehistoric Lake Lahontan. Beyond Russell Butte, and almost due west of Becker, is a square red tower which is named Gannett Tower, after the man whose topographical work has made world-famed the maps of the United States Geological Survey.

Away off in the direction of Havasupai Point (which seems to reach almost across the river to Dutton Point), in the heart of the Canyon, north of Geikie Monument, is a small square structure in the lower part of the red wall limestone, which is

so like the pictures shown of the prehistoric temples of Yucatan that it is named Yucatan Temple.

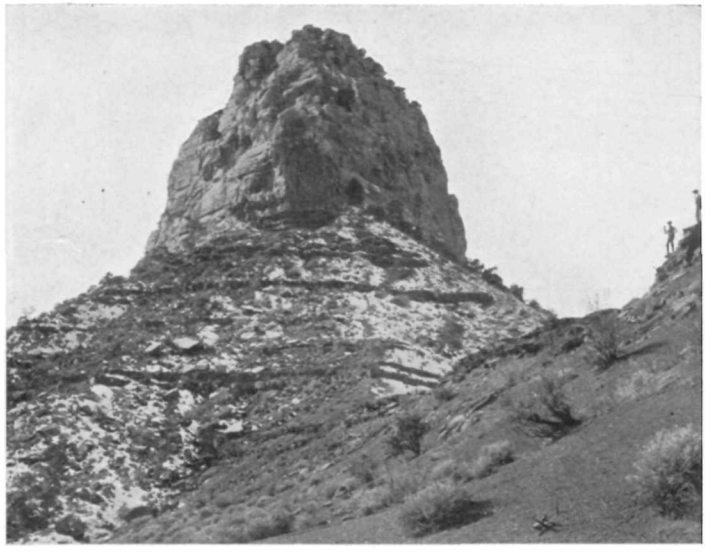
(*c*) Surprise Outlook — Bass Camp

At Bass Camp there are three especial views afforded, which give the intelligent visitor a clearer comprehension of the Canyon in all its aspects than can be obtained, according to my judgment, in any other way. These three are the "Surprise Outlook," the "Eastern View" of the Canyon from Havasupai Point, and the "Western View" from Wallapai Point.

The first view encountered by the visitor to Bass Camp is that which is presented as the stage, without warning, halts immediately on the edge of the Canyon, close to the head of Mystic Spring Trail, — hence its name, "Surprise Outlook." Here, after the first impression — which is always of the Canyon's vastness — has somewhat subsided, the eye instinctively seeks the important point on the opposite side, which has already been referred to as Dutton Point. This is the "Point Sublime" of our stage ride; the great promontory that rises over half a thousand feet above every other canyon point within our ken, as, forty miles away, we approach the great gorge. It is the extreme eastern end of Powell Plateau.

Almost immediately opposite Bass Camp, slightly to the left, and directly in the heart of the Canyon, is Mount Observation, a solitary, lone, rocky giant of cross-bedded sandstone, topped with a small residue of cherty limestone. From where we stand at

night we can look out and see the moon shed its silver brilliancy over the massive white walls, which gained the mountain its name from the Indians, — Hue-tha-wa-li,— White Mountain. It is one of the most impressive specimens of the result of the



Eastern End of Mount Observation.

erosive and disintegrating processes of nature to be seen in this region. Its talus has more slope than the generality of the cliffs, and this makes the approach to it fairly easy. It seems as if you might throw a stone to it from where we stand on the rim of the Canyon, and it is one of the first lessons in distance that many a tourist will eventually take, to find out how far away it really is.

The next features that attract our attention are

the three central, interior plateaux, which, two thousand feet below the rim, thrust their noses far out from the south wall until they seem to be immediately over the Inner Gorge, where the Colorado River flows in sullen majesty through the granite. The plateau which connects the south wall with these interior plateaux is named Le Conte Plateau. These are all in the red sandstone. The upper stratum — the deep chocolate — has entirely disappeared except at each end of Hue-tha-wa-li. The plateau to the west, which is partially hidden by Hue-tha-wa-li, is the Mystic Spring Plateau, so named from a small medicinal spring long known to the Havasupai Indians and used by them. It oozes apparently through the red sandstone into a rocky basin on the edge of the western precipice.

The central plateau, and, from where we stand, the most striking one, is named after Hue-tha-wa-li (Mount Observation), Hue-tha-wa-li or Observation Plateau, as this mountain stands close upon its point of junction with Le Conte Plateau. At its end is an eroded mass of red sandstone, clearly defined and distinct, to which the name has been given of Murchison Butte. Still nearer the end, and belonging to the red limestone or marble wall, is a pagoda, modest in size and appearance, from here, but which would make miniature the largest creations of the architects of Hindoostan. It is called The Temple of Om.

The easternmost of the three plateaux has been most appropriately named by Mr. Bass the Grand Scenic Divide, for here, geologically as well as scenically, the character of the Canyon undergoes

material change. At its end is a small eroded needle of red sandstone, which, however, to those who have climbed to its base, is an imposing obelisk, larger and more massive than the Washington Monument. This is Dick Pillar, so named in honor of the indefatigable Robert Dick of Thurso, Scotland, whose labors in the old red sandstone added so much to the geological knowledge of his and our times.



DICK PILLAR AT THE END OF GRAND SCENIC DIVIDE.

These plateaux vary in width from a quarter of a mile to over a mile wide; they are dotted with what seem, from here, to be patches of grass, but which are juniper and pinion trees from ten to forty feet in height. Each plateau broadens out towards its base by a series of steps, clearly marking the stratification of the red sandstone down to the so-called red wall limestone, which is a sheer wall from seven hundred to one thousand feet high.

To form a good idea of the arrangement of these radiating plateaux, imagine Le Conte Plateau to be

the wrist of a giant hand with but three fingers. The Grand Scenic Divide is the easternmost finger, Trail Canyon (down which the Mystic Spring Trail continues to the river) is the space between the first and middle fingers, Hue-tha-wa-li or Observation Plateau the middle finger, and Mystic Spring Plateau the finger to the west, while Copper Canyon divides these two westernmost fingers. On the edge of Le Conte Plateau, like a great wart between the knuckles of these fingers, is Mount Observation, Hue-tha-wa-li.

Hue-tha-wa-li is a mountain between five thousand and six thousand feet high, — almost as high as Mount Lowe, above Pasadena, California, or Mount Washington in New England, — having its base washed by the Colorado River, and yet it is merely a feature in the vast scene between the rocky banks of that river. It is oval in shape, and when first seen by dim moonlight gives color to the imagination, which sees in it a wrecked vessel, dismasted and storm-beaten, cast high upon these inhospitable rocks, and there petrified and doomed to remain forever.

By this time the great mural face stretching westward from Dutton Point has successfully enchained the attention. Its dominant color is red, though it is crowned with the deep green of tall pines, many of which have dropped over the edge and planted themselves in the talus of the upper gray limestones and sandstones, especially towards the point. As we are in the curve of a receding amphitheatre, the wall across is fully ten or twelve miles away, while farther walls to the right are fifteen to

seventeen miles. Try to realize a wall nearly a mile high and twelve miles distant, angled and recessed, the line of its summit almost even on the horizon, though curving towards us to the left, but whose mural front zigzags and curves, protrudes and retreats, until it is obscured by the irregularities of an obtrusive point belonging to this side of the Canyon. To the left of Dutton Point a "hump" in the surface of the wall is seen, and this we call Powell Arch.

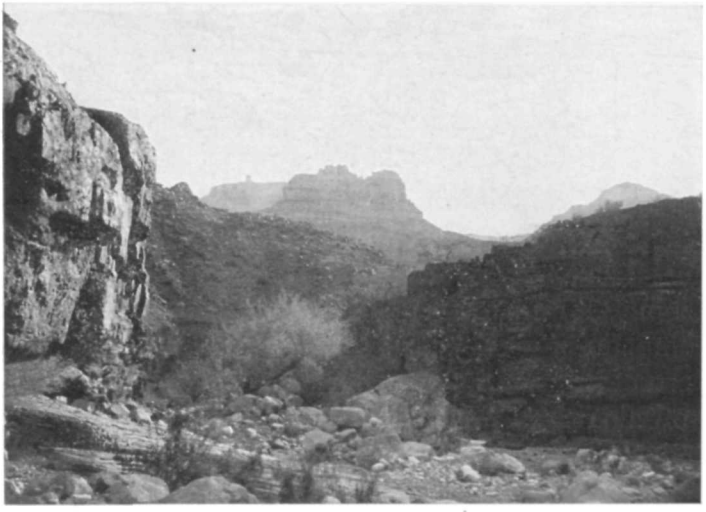
Immediately below Dutton Point, to the left, is a great square recess, formed by the red marble wall which faces us, an angular extension of the lower wall of the point, and an eastern wall, which shoots out at right angles, completing a striking square temple, closed on three sides and opened towards the southwest. Its being "on the square" suggested the name "the Masonic Temple." Another larger but somewhat similar three-sided temple, in the red marble, and at the same elevation, at the eastern extremity of Dutton Point, with elaborate extended side walls, was called the "Temple of the Rising Sun," for it receives the first rays of the August sun as they dart over the eastern walls of the Canyon. It is easy for the imagination to picture the souls of devout Parsees standing here, as at Bombay and elsewhere, greeting the rising of the morning luminary with all the adoration worthy so powerful and benignant a deity.

Following the wall of Powell Plateau westward, it terminates, or seems to do so, in two points, — a sharp one to the extreme west, and a more blunt one nearer this way. The sharp point is called Ives Point, and the eastern one Beale Point.

A little to the west of Masonic Temple, also, will be observed a somewhat straggling offshoot from the upper red wall terminating in a butte. This is Clarence Wall and King Butte, so named to connect them with the name and labors of Clarence King.

The farther walls to the right of Dutton Point, and which extend as far as we can see to the eastward, are not so striking in the facial characteristics of the upper thousand feet as they are lower down. There has been a more decided invasion here of verdure from the densely clothed Kaibab Plateau on the north, and the trees have robbed the walls of that purely rocky character which elsewhere they possess almost exclusively. The change is a delightful one, for the most avaricious rock-lover cannot complain of any lack of his chosen material. This part of the wall is less regular than the wall of Powell Plateau. It is deeply recessed by alcoves and amphitheatres, in the front of which are detached masses or buttes, square towers, and meandering walls that give additional character, dignity, and impressiveness to the scene. The most imposing of these detached towers is a square ponderous mass, rising from the greenish gray terraces of the sandstone, first, in a leap upwards of nearly one thousand feet of red wall limestone or marble, then in a series of red sandstone terraces, and finally, in an even though steep slope of deepest crimson, fringed with green, to the summit, upon which is placed what seems to be a short but perfectly circular memorial shaft. Its upper portion is made of the gray and the lower of the rich crimson sandstone. Many

years ago the first white lady to descend the Canyon at this point named this "Bass Tomb," and I see no reason to reject the name, for in sight of it Mr. Bass's most arduous labors have been spent, and here it is appropriate he should have his immortal memorial. There is a private chapel attached to



In Trail Canyon, looking across to Bass Tomb and Dox Castle.

the marble base of the tomb, caused by walls of marble partially enclosing it. The open space faces us. This is "Memorial Chapel."

Immediately to the right of the right wall of Memorial Chapel, and about midway between Bass Tomb and the end of Grand Scenic Divide, is a massive structure of rich dark red and brownish rock, dwarfed materially by Bass Tomb, which bears the name Dox Castle, in honor of Miss Virginia

Dox, the pioneer lady visitor to the interior of the Canyon at this point.

Slightly to the rear and right of Bass Tomb is another pyramidal structure, less in size, and without the crowning column of that majestic pile. At times it is impossible to distinguish it as a structure distinct and separate from the main wall, but, during a fog, or when the clouds act as reflectors of the sunshine behind it, and yet clothe it in shade, its personality and individuality are clearly discernible. I have named it Shaler Pyramid. Its summit is oval.

Immediately between us and Bass Tomb are the Tilts, the upthrust of the archæan rocks having tilted the strata backwards towards the north wall. They are of a dark iron gray shade, varying towards reddish black, and add a more gloomy aspect to the lowest deeps.

To the left and slightly above the Tilts are the Crimson Ridges and the Gray Ridges, both, as their respective names imply, being ridges of color showing out clearly and distinctly above the archæan rocks. At the foot of these ridges a line like a small black gash may be seen. This is the Canyon of the Shinumo, down which flows a goodly stream of water, and which is deemed worthy a later chapter in this volume.

One other striking feature presents itself on the opposite wall, and that is a winding, twisting canyon, its outer walls set in the air, its inner walls enclosing — what, I know not. But so tortuous a canyon immediately recalls the Constellation of Draco, the Dragon, so we name it the Canyon of the

Dragon. On the nearer of the two walls of this canyon, at the far-away eastern end, is a butte, which we name Dragon Castle.

Immediately to our right and east of the Grand Scenic Divide is Fossil Mountain, a great peak of the cherty limestone, belonging to the south wall, in which large numbers of fossils have been found. This is gloriously covered with fair-sized bushy junipers and pinions, and the deep green of the trees and the gray of the stone add additional charm to the striking reds lower down.



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FOSSIL MOUNTAIN.

The curious visitor, who hovers long, will see many other features than those here described. There has been no attempt at elaborateness or completeness of detail. Merely enough is presented to enable the visitor to recognize the salient objects.

No careful observer, however, can fail to notice that here nature has not followed her usual curving lines of beauty. The striking features of this view are not curves and circles, but squares and angles. The Masonic Temple, Memorial Temple, Temple of the Rising Sun, Bass Tomb, Shaler Pyramid, are all more or less angular.

This portion of the Canyon being almost due east and west, presents also shifting lights and shades, peculiar search-light effects, morning and evening, and glories of coloring that are not everywhere observable.

(*d*) Eastern Outlook from Havasupai Point

This, to my mind, of all the Canyon views from the south rim, is the most comprehensive and sublime.

After carefully going over the rim again from Mystic Spring Trail to Hance Camp, I am convinced that Havasupai Point is the Sentinel Point referred to in "Harper's Magazine" as follows: —

> "It is not easy, where every outlook is sublime, to select a single point upon the canyon's brink of which you can say, this is, after all, the best. 'Altogether, it has seemed to me that of all the places which I have visited on either side of the river the one which is most impressive is a long high spur, forest-clad at the base and bare at the end, on the south side, about forty miles below Hance Camp. This looms far out over the deeps between two mighty gulfs, and commands a stretch of many miles of the broadest and profoundest sections of the Grand Canyon." — T. Mitchell Prudden.

Recent correspondence with Dr. Prudden confirms this location as Havasupai Point. It is the point long ago chosen by Mr. Bass, and that, for years, I have advocated as the one affording the grandest of all canyon outlooks, and it is gratifying to have so observant and educated a western traveller as Dr. Prudden independently confirm the results of our observations.

It is the only point on the south wall of the Canyon from Navaho Point on the east, to the Great Bend beyond Cardenas Aisle, sixty-five miles west, that protrudes far enough into the heart of the Canyon to afford practically a perfect and complete



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DARWIN WALL — EVOLUTION AMPHITHEATRE.

view of both walls of the Canyon at the same time. It is but little farther from the end of Havasupai Point to the wall on the north side of the river just west of Point Sublime, than it is to the extreme curve of Evolution Amphitheatre on the south wall. Hence the same conditions exist here on the south side — and even in more marked degree — that led Captain Dutton to choose Point Sublime as his chief vantage ground on the north side.

The vast amphitheatre to the right of Hava-

supai Point, on the south wall, and of which that point is the western cusp, has been named Evolution Amphitheatre. There are four distinct walls, descending in steps on the sides of this amphitheatre, and these have been named in order from the top, — the limestone, Darwin Wall; the cross-bedded sandstone, Huxley Wall; the steps of the red sandstone, Tyndall Wall; and the red limestone or marble, Spencer Wall.

In an angle of Evolution Amphitheatre is the Corner of Standing Rocks. Here erosion is at work, gnawing away the connecting links which bind huge pillars to the upper limestone wall, and, little by little, the process of disintegration goes on, so that by and by more stupendous masses will fall, to be shattered into dust, mashed into small pieces, or even continue to roll in large boulders down to the very river itself, which in flood time will whirl them along to make dangerous twisting waves and fountains in which men unlucky enough to be on the river at the time may lose their lives. Here may be seen columns, pyramids, peaks, and fantastic pillars; wonderful evidences of the never-ceasing iconoclasm of Nature.

Reaching out from the centre of Evolution Amphitheatre is a great plateau somewhat similar to the Grand Scenic Divide. It is of the red wall limestone, crowned with over half a thousand feet of red sandstone, and this I name Drummond Plateau.

The wall of the red limestone is called Fiske Wall, in honor of the able scientist, who has done so much to make known the work of Spencer, Darwin, Huxley, and Tyndall in this country.

To turn now to the great scene before us. Its expansiveness is one of the greatest of its advantages. A narrow canyon, with deep, precipitous walls, could never be seen so as to produce any other than the effect of profound depth and gloom, no matter what the coloring of the walls or the purity of the atmosphere. There must be a corresponding ratio between magnitude and distance, and here, as nowhere else in my knowledge, are these factors so perfectly proportioned.

The length of canyon revealed clearly and in detail from Havasupai Point is fully forty-five miles eastward and over twenty-five miles to the west. Of the latter view I shall say nothing here. The eastern view claims our entire attention.

Across the Canyon, slightly to the north of east, is Point Sublime, the point from which Captain Dutton wrote his inimitable descriptions. There is nothing to distinguish it from other points on the opposite wall, except that it is well protruded towards the interior of the Canyon, and affords that comprehensive sweep of view in both directions that is the essential characteristic of a favorable look-out point. Beyond it, to the east, is a detached mass of the Kaibab wall, that bold and striking portion which appears behind Vishnu Temple when the visitor looks across the Canyon from Ute (Moran) or Comanche (Bissell) Points, and which was named Newberry Terrace, after the distinguished geologist of the Ives Expedition.

The horizon line before us is bounded by the last great promontory, Navaho Point, beyond Ute and Comanche, which, with the detached Kaibab mass

last referred to, shuts out the wall of the Little Colorado River, seen from these two latter points. Sweeping away to the south the level wall of the Canyon is broken by a forest-clad rise, which acts as a dividing line for the waters that flow into the basin of Havasu Creek and Canyon and those of the Kohonino (Coconino) Basin. Then those majestic volcanic piles come into view, softened and mellowed by the far-away distance, and in order lead the eye around until the close-by wall of the point on which we stand occupies all our gaze: first is the San Francisco Mountains, then Kendricks, followed by Sitgreaves and Williams, while Red Butte stands in the foreground exactly midway between the two first-named piles.

Taking the greatest width of the space under our immediate view, the distance from the inner curve of the amphitheatre beyond Point Sublime on the north wall to that of Evolution Amphitheatre on the south wall cannot be less than twenty miles, and the distant wall in the east is fully forty miles away.

"This vast space is thronged with a great multitude of objects so vast in size, so bold and majestic in form, so infinite in their details, that as the truth gradually reveals itself to the perceptions it arouses the strongest emotions. Unquestionably the overruling feature is the colossal wall on the opposite side of the gulf. Can mortal fancy create a picture of a mural front a mile in height, so planned as to create a vast amphitheatre, twenty miles wide at the arms and forty miles from the centre of a line attaching these arms to the curve of the half circle? As the mind strives to realize its proportions, its spirit is broken and its imagination completely crushed. If the wall were simple in its character, if it were only blank and sheer, some rest

might be found in contemplating it, but it is full of diversity and eloquent with grand suggestions. It is deeply recessed by alcoves and amphitheatres receding far into the plateau beyond, and usually disclosing only the portals by which they open into the main chasm. Between them the promontories jut out, ending in magnificent gables with sharp mitred angles. Thus the wall rambles in and out, turning numberless corners. Many of the angles are acute and descend as sharp spurs, like the forward edge of a ploughshare. Only those alcoves which are directly opposite to us can be seen in their full length and depth. Yet so excessive, nay so prodigious, is the effect of foreshortening, that it is impossible to realize their full extensions.

"At many points the profile of the façade is thrown into view by the change of trend, and its complex character is fully revealed. It is a series of many ledges and slopes, like a moulded plinth, in which every stratum is disclosed as a line or a course of masonry. The red wall limestone is the most conspicuous member, presenting its vertical face eight hundred to a thousand feet high, and everywhere unbroken. The thinner beds more often appear in the slopes as a succession of ledges projecting through the scanty talus, which never conceals them.

"Numerous detached masses are also seen flanking the ends of the long promontories. These buttes are of gigantic proportions, and yet so overwhelming is the effect of the wall against which they are projected that they seem insignificant in mass, and the observer is often deluded by them, failing to perceive that they are really detached from the wall and perhaps separated from it by an interval of a mile or two.

"At the foot of this palisade is a platform through which meanders the Inner Gorge, in whose dark and sombre depths flows the river. In six places can the water surface be seen. In its windings, the abyss which holds it extends for a short distance towards us, and the line of vision

enters the gorge lengthwise. Above and below this short reach the gorge swings its course in other directions, and reveals only a dark, narrow opening, while its nearer wall hides its depth. This inner chasm is one thousand to twelve hundred feet deep. Its upper two hundred feet is a vertical ledge of sandstone of a dark rich brownish color. Beneath it lies the granite of a dark iron-gray shade, verging towards black, and lending a gloomy aspect to the lowest deeps. In one place perhaps a half a mile of the river is disclosed. A pale, dirty red, without glimmer or sheen, a motionless surface, a small featureless spot, enclosed in the dark shade of the granite, is all of it that is here visible. Yet we know it is a large river, a hundred and fifty yards wide, with a headlong torrent foaming and plunging over rocky rapids." — C. A. DUTTON.



THOR HAMMER.

A little, and only a little, less impressive than the great wall almost surrounding us are the buttes which dot the inner surfaces of the Canyon in every direction the eye chances to gaze.

"And such buttes! All others in the West, saving only the peerless Temples of the Virgen, are mere trifles in comparison with those of the Grand Canyon. In nobility of form, beauty of decoration, and splendor of color, the Temples of the Virgen must, on the whole, be awarded the palm; but those of the Grand Canyon, while barely inferior to them in those respects, surpass them in magni-

tude and fully equal them in majesty. But while the Valley of the Virgen presents a few of these superlative creations, the Grand Canyon presents them by dozens. In this relation the comparison would be analogous to one between a fine cathedral town and a metropolis like London or Paris. In truth, there is only a very limited ground of comparison between the two localities, for in style and effects their respective structures differ as decidedly as the works of any two well-developed and strongly contrasted styles of human architecture."— C. A. DUTTON.

The point in the centre of the great scene before us I have named Hopi Point. It is the one reached from near the head of the Bright Angel Trail.

Almost midway between Shiva Temple and Hopi Point is a gigantic red sandstone butte, one of the most striking objects of the Canyon, and this I name Walcott Butte, in honor of the distinguished geologist who now directs the United States Geological Survey.

A few miles beyond Drummond Plateau, on the south side of the Canyon, is a stupendous structure mainly composed of the red wall limestone, and looking something like a couchant lion, whose head, unfortunately, is missing. Our British cousins will not take it amiss, I hope, if I name this impressive and majestic pile Geikie Monument, in honor of the well-known British geologist.

To the right, in the granite of the Inner Gorge immediately below us, one cannot fail to notice the irregular seams and scratchings of white — the quartz which has filtered in and filled up the deep scars and fissures of the ancient rock's face, and are now revealed as irregular ledges of white, which

cross and criss-cross the black and rusty brown of the granites.

(*e*) Western Outlook from Wallapai Point

A few hundred feet west of Bass Camp is the eastern cusp of one of the many small amphitheatres found in the upper wall of the Canyon on both sides. From this "cusp" which has been named Chemehuevi Point, the last of the three great views of this region is obtained. But if one will take the trouble to go to Wallapai Point some two or three miles farther west, this view is marvellously expanded in that it reveals an unusually vast, retreating amphitheatre in the south wall, possibly as far from eastern cusp to western cusp as the distance is to the farthest point on the north wall of the Canyon, viz., sixteen or seventeen miles. The eastern cusp is Wallapai Point, the western Apache Point.

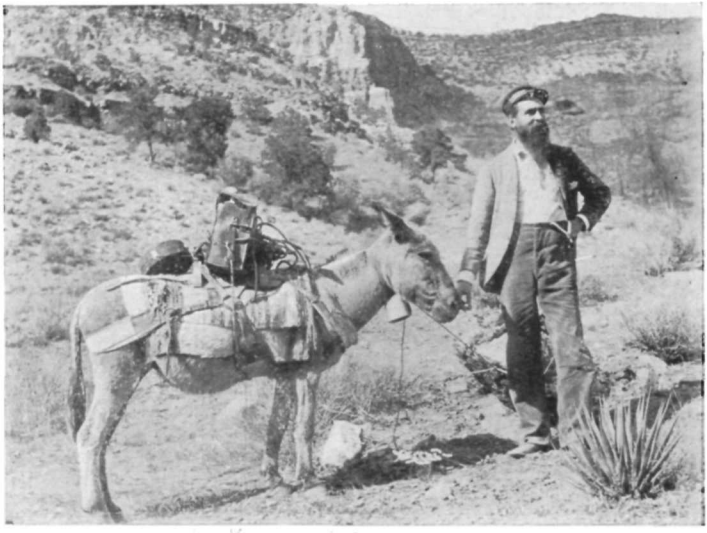
The name Apache Point was given, not only in accordance with the general system followed in naming the points on the south wall, but also because it is singularly and tragically connected with the Apaches and Havasupais. These two tribes have long waged a relentless war one upon the other, though generally the Apaches have been the aggressors, and the Havasupais on the defensive. But, whenever the hated Apaches entered Havasu Canyon on their depredatory or murdering excursions, and happened to be caught by those whom they came to slay or plunder, no mercy was shown to them. They were put to the torture and slain cruelly, and one method of killing them was

to bring them out to Apache Point, where there is a frightful precipice, and there, one man holding the prisoner by the hair and the other by his feet, calling upon all the evil powers that are supposed to lurk in and about Chic-a-mi-mi Hack-a-tai-a (the Grand Canyon), the unhappy wretch was swung to and fro over that awful precipice until he showed certain signs of fear. Then, with a wild yell of triumph, giving him a fierce swing outward, both captors loosed their hold on the wretched Apache, and he dropped a thousand or more feet, to be mashed to a jelly on the rugged rocks beneath.

A terrible way of punishing their hated and dreaded foes, and yet, the only way to inspire with wholesome fear such a tribe as the Apaches.

The scene from Wallapai Point, which is the motive for the name given to the Grand Scenic Divide, is, indeed, of so marked a difference from the view presented on the east of the Grand Scenic Divide that Mr. Bass is congratulated afresh upon the keenness of his discernment and the fortuitousness of his discovery of so choice a scenic region. In the geological maps of the Grand Canyon it will be noticed that the archæan rocks appear immediately west of the Red Canyon Trail. They continue to a point just below the Mystic Spring Trail, and then disappear for a number of miles, to reappear once again for a short distance before their final disappearance from the bed of the Colorado River. Here before us is the point of their first disappearance. To our right and rear are the three plateaux before described, with Hue-tha-wa-li, Dutton Point, and many other important features,

but before us the distinguishing characteristics of the Canyon are distinctly new. They are Grand Canyon certainly. Nothing so grand and stupendous in proportion or striking and bizarre in coloring could be found elsewhere, but it is a different Grand Canyon from that viewed from Havasupai Point.



THE AUTHOR AND HIS BURRO.

Looking due west from this point, the one distinctive feature is the aisles — deep, vast, mysterious, and gloomy — in the marble, somewhere in the depths of which the river runs. The attention is not arrested to bold promontories, overpowering mural fronts, striking architectural forms. These are not entirely wanting, but they are subordinate to these massive aisles of a church whose foundations are in the centre of the earth, whose builder, maker,

and only minister is God, and wherein the music is ever stately, solemn, majestic, pealing, — made by the deep roar of the river below.

The river makes a great south bend here, sweeping around the nose of Mystic Spring Plateau and revealing a twenty-five hundred feet deep red marble and gray sandstone wall which reaches nearly to the river. This wall crosses the Canyon to within a mile or two of a line drawn from Wallapai Point, and were this wall and Havasupai Point close together and parallel, the wall would fully overlap the point a mile to the south. Around the southern point of this wall, — on the summit of which is an inner plateau named Coronado Plateau, in honor of the great explorer, — the Colorado River flows, strikes due west again for three or four miles, detours immediately to the north for about half the distance of its first curve, and then proceeds westward in the depths of another profound red marble aisle. To this first wall I venture to attach the name of Cabeza de Vaca, — "the Wall of Vaca" — in memory of the great Spanish traveller whose reports of what he had seen and heard on his transcontinental journey led to the discovery of Arizona and New Mexico three hundred and fifty years ago. The first bend receives the name of Alarcon, — Alarcon Bend, — the second of Tobar, and the third of Stephen, the negro who discovered, with Marcos de Niza, the bold Franciscan friar, the region now called Arizona.

At the second bend of the river, where it turns to flow northward, is a seemingly detached marble mass, on the summit of which a sleeping figure

is to be observed, like those armored knights of mediæval times seen in European churches and cathedrals. And, as no marble monument has ever been erected, as far as known, either in Spain, Mexico, or Arizona, to the brave Christian friar who first set foot within the borders of the last named country, I call this in his honor, Marcos Monument.

The great west aisle is termed the Aisle of Cardenas, from the fact that Cardenas, marching from the land of the Hopi, was the first European that ever gazed into the profound depths of the great Colorado River gorge.

When the light and shadows are propitious, one can see clearly the great curve the river makes beyond the Aisle of Cardenas, finally aiming almost due north, where it penetrates to the rear of Powell Plateau, behind Ives Point, for about thirty miles, ere it turns back to the southwest, where it is joined by the waters of Havasu (Cataract) Canyon.

From a point on the south wall where this last named curve takes place a glorious and extended view may be had. The Kanab Wash and Canyon and the Hurricane Fault are clearly to be seen.

It is in the early morning that this portion of the Canyon can be seen to best advantage. Then all its details are revealed, and its glories are not obscured by a too glaring sun. Its flaming red is harmonious and effective, its deep-cut aisles impressive, and the far away blue, irregular outlines of the Uinkaret Mountains, rising in the distance a little above the Canyon walls, give a completing touch to a faultless and unique picture.

(*f*) Pillars of Erosion

No chapter devoted to the "rim" of the Canyon would be complete that failed to call particular attention to the many Pillars of Erosion which may be found all along from Lee's Ferry to Peach Springs. Only a few of the most important of these can be mentioned and pictured here.



Shinumo Altar — Marble Canyon.

None of all the nature-sculptured pillars surpasses the Shinumo Altar, found on the southern brink of the Marble Canyon about midway between Lee's Ferry and the mouth of the Little Colorado. It is of a rich red Permian sandstone, and the ascending steps of the strata easily lead one to the thought that it was constructed to be climbed, and that on its summit a secret altar may be found.

At Ute (Moran) Point is a round tower of cherty limestone detached from the main wall, which is a grand specimen of nature's erosive work.

An even more striking example is the Split Cliff near Comanche (Bissell) Point. Here it seems as if a vast mass of the upper strata had split off

from the main wall, and was slightly tilted towards the river.

Five miles west of Paiuti (Grand View) Point are two of the most striking and individualistic specimens of erosion with which I am familiar. These pillars stand, one on each side of a great amphitheatre, like guardian giants, to protect the recess from intrusion. One of them is shaped like a hammer, and is large enough to be the weapon of a god, so I have named it Thor Hammer. The other is a little less striking, and is named Pompey Pillar.



POMPEY PILLAR.

In one portion of Evolution Amphitheatre, where the wagon road from Bass Camp to Havasupai Point first touches it, are a number of these pillars of erosion. This is a veritable Land of Standing Rocks, and will afford great pleasure to those who care to examine it closely.

Looking across from Surprise Outlook to Dutton Point, the canyon behind it will be observed. This is Muav Canyon, and on its banks, on the north side of Powell Plateau, a number of pinnacles appear.

In Kanab Canyon, farther west, numbers of them occur, as well, indeed, as at any and every point, almost, where one may touch.

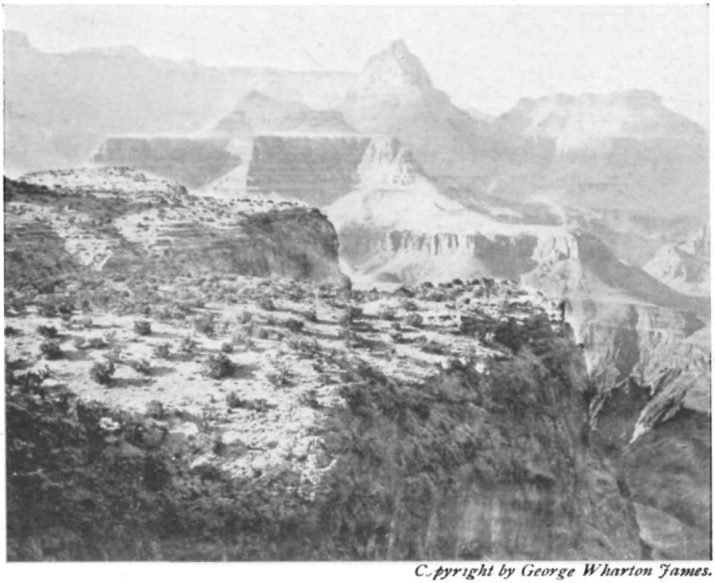
(*g*) Various Impressions

Various trains of thought present themselves as one rides along the "rim" and looks into these profound depths.

There will be few, *if any*, more trails built into this portion of the Grand Canyon. The easier engineering portions already have been utilized, and the expense and danger of undertaking trail-building operations on the sheer precipitous walls almost preclude the possibility of its being further attempted.

The water problem is a difficult one. If the power of the river were utilized to drive the necessary pumps for forcing water from the Inner Gorge to the rim, an inexhaustible supply would be the result, and this, undoubtedly, will some day be done. But "some day," "may be for years, or it may be" half a century; and in the mean time the water problem must be more readily solved. The water used at the Grand View Hotel is hauled a distance of thirty-eight miles. There is practically no water on the rim. As Mr. Bass years ago pointed out, the maps of the Geological Survey do not indicate the facts — or, if they do, the tyro at map-reading does not realize it — that, with the exceptions of the Little Colorado River, Havasu (Cataract) Creek, and Diamond Creek, the whole watershed of the south wall of the Canyon slopes

away from the Canyon instead of towards it. Hence the singular and almost abnormal phenomenon of a river draining a country with the water which falls on each side of its banks flowing *away* from it instead of *into* it. To the prospector or unacquainted



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VISHNU TEMPLE FROM UPPER PLATEAU, GRAND VIEW TRAIL.

traveller in the district this strange state of affairs often brings danger, and even a near approach to death through thirst; and to those who have the responsibility before them of supplying the needs of thousands of tourists each year who are accustomed to an unrestricted use of water, the problem is both vexatious and expensive.

Personally, I see no other immediate way out of

the difficulty than that which Mr. Bass's indefatigability and indomitable energy have hewn out for him at the head of the Mystic Spring Trail. Without waiting for the opinion of scientific experts and engineers, or for capital to pump water up from the river, he has taken drill and hammer, brain and muscle, and by an ingenious combination of them all, assisted by powder and dynamite, and, later, by cement, has blasted out and made water-tight vast rock cisterns, which store the rain-water, storm-flows, and melted snow, cool, pure, and delicious, all through the heated months, when water is the most precious and desirable thing in that part of Arizona and more valuable than a gold mine or a United States Senatorship.

But the lack of water is only one of the difficulties a prospector will have to contend with. When he strikes the canyons, the fewness of the trails, and the difficulty of reaching the rock formations in which mineral may be found, will constantly hamper his progress. And, if he desires to cross the river, his dangers are increased tenfold. I know it is a common thing for ordinary people, not acquainted with the power of running water, and even for people born on sea, or river-shore, to say there are no difficulties in crossing or navigating the Colorado River in the heart of the Canyon. I have heard a Minnesota log-driver boast that he could ride a log down the most dangerous of the rapids or falls of the Canyon, and I have heard, a few months later, the humble story of the same redoubtable log-driver as he recounted how that, in crossing in a boat and with good oars, a great up-

wave struck under his boat, without the slightest warning, overturned it, and dashed him into the rapids, from which he was glad to escape with his life. He now confesses a profound respect and wholesome fear of the river, and says: —

"An expert boatman *may* do all he thinks or says he can, but I know that if he does it is *good luck* and not *skill*. He may brag about it, and under the same circumstances try to do it again, and before he knows where he is, he and his boat and his bragging are all knocked endwise and crosswise, and upsidedown, and if he gets out at all he is like a half-drowned puppy who can neither bark nor whimper. No, sir, don't tell me of what a man can do and can't do. I've crossed that d—d river too often not to know that every time I do it I take my life in my hands, and one whack of the old river's tail may knock it out of my reach."

When I asked him the cause of these up and down turning waves, which, in the chapter in which Frank Brown's death is narrated, are called fountains, he propounded the following theory: —

"When the river is low you are not in as much danger from these waves as when it is high; for when the water is low immense boulders find lodgment in the bed of the stream and remain there. But when the flow increases in power and speed these immense boulders, weighing, perhaps, a score or more of tons, are rolled over and over down the river with a force and speed that are irresistible. Now and again, they will run up against 'snags,' — lesser boulders in their way, that are wedged tight, or something of that kind, — and the water dashing along behind them at full speed is suddenly stopped or slackened under the surface, and a great up-wave is the result that turns on both sides of the boulder, or may twist

upwards or downwards, or outwards or inwards, inside outwards or outside inwards, or upside downwards or downside upwards, or endside foremost or foreside endmost, or any or all of these all at once, or in quick succession, so that, if your boat happens to be just about that locality you may well ask, 'Where am I "at"?'"

I confessed I should n't know, and he hoped I never might be where I should find out, in which good-hearted wish I sincerely joined.

Old "Dad" has had several experiences which confirmed what had already been told me, and Mr. Bass's caution not to "monkey with the river" fell upon prepared soil. Then, too, a tragic event which occurred at the foot of the Bright Angel Trail, where two men, in essaying to cross the river in a canvas boat, were overturned and one of them in a few moments was carried out of sight, never to be seen again; and the death of Brown and his companions, recorded in Chapter IV., and the — what might have proven equally tragic — experiences of Lieutenant Potter, recorded in the Peach Springs Trail chapter, all lead me to the possession of a respect for the dangerous power of the river, not unmixed with wholesome and restraining fear.

About a mile away from Havasupai Point are the remains of what was once undoubtedly a circular lookout point, built of stone. It is three hundred feet in diameter, and commands a more extensive view than any other point on the south side of the Canyon for miles around. The higher walls of the north side of the Canyon, and every prominent landmark east, west, and south, includ-

ing Navaho Mountain, two hundred miles away to the northeast, and Mount Trumbull on the northwest, and the ranges of California in the west, and, close by, the walls of Havasu Canyon, are clearly seen. Numbers of pieces of pottery of the



ANCIENT HAVASUPAI LOOKOUT — HEAD OF MYSTIC SPRING TRAIL.

corrugated and other ancient types, arrow-heads, flints, etc., are found on the mound in great profusion. This is but one of many indications of the occupancy of this region by Indians.

At the head of the Mystic Spring Trail are the ruins of a prehistoric house, of which the Havasupais know nothing. It was there long before their immediate ancestors were born, and how old it is they have no tradition. They state, however, that it was used as a watch-tower, where guards were

stationed when others of the tribe were at work at the mescal pits on Le Conte Plateau. If enemies came upon them they descended the trail, gave the warning, and, owing to the multiplicity of hiding spots in the heart of the Canyon, invariably defeated the aims of their foes.

CHAPTER XI

THE GRAND VIEW TRAIL

THERE were three trails reached by the stage which used to run from Flagstaff, viz., the Old, the Red Canyon, and the Grand View Trails.



IN THE GRANITE AT THE FOOT OF GRAND VIEW TRAIL.

These, in the order named, were the trails to which tourists were taken during the days of the Flagstaff stage. The Old Trail was washed out in a storm some years ago, hence became practically

inaccessible. Then, after disappointing the more intelligent and educated of the tourists for some years by taking them down a trail which did not reach the archæan rocks, and which, like the Old Trail, was "boxed in" almost the entire distance from the rim to the river, the Red Canyon Trail was abandoned by the railway officials and their tourists taken to the Grand View Trail. A later chapter is devoted to these two trails.

Viewed from every possible standpoint, this change was advantageous to the student, the geologist, and the sight-seer. The "rim" views are equally good, if not superior, to those at the head of the Old and Red Canyon Trails, and a short day's ride will include them if it is so desired. The Grand View Trail is better engineered and constructed, and one may ride from rim to river nearly all the way, with the additional and really important advantage that the sight-seer descends to a large plateau, when about two thousand feet below the rim, and to still another, one thousand feet lower, from both of which plateaux extended and comprehensive views can be obtained in every direction *from the interior of the Canyon*, a desideratum rendered impossible by the "closed in" character of the Canyon at the two aforementioned trails.

Again, the Grand View Trail reaches the river where it has cut through the granite to a great depth, thus giving a complete opportunity to know the character of "the Inner Gorge," — the name given by the geologists to the inner granite canyon through which the river runs, *and which is the chief distinguishing feature* of the Grand Canyon. It is



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LOOKING DOWN TO THE RIVER FROM THE GRAND VIEW TRAIL.

the presence of the granite that mainly differentiates Marble, or Glen, or Desolation, or any of the upper canyons, from that supreme division of the way of the Colorado River known as the Grand Canyon.

One other marked feature of the Grand View Trail is the recent discovery of an interesting series of caves, which I had the pleasure of exploring in company with Mr. P. D. Berry, one of the owners of the trail. They were discovered in 1897, by Joseph Gildner, a cook employed in the mining camp of Messrs. Cameron and Berry.

It was late one afternoon when we entered the mouth of the first cave. Well within the entrance is a peculiar stalagmite of dendritic appearance which I desired to photograph. Having no flash powder, I cut up all the candles that could be spared into pieces long enough to burn for an hour or more, and in the light of twenty-seven of these burning candles left the sensitive plate exposed, while Mr. Berry guided me into farther recesses. This first cave is some three hundred feet long, and varying in height from ten to eighty or ninety feet. The second cave is of about the same length, but much higher, and the stalactites larger and more diversified in shape.

A peculiar feature of these caves that has much puzzled the local minds is that, while most of the formations are white, the cave itself is in the red limestone or marble. This is merely another demonstration that the red marble wall of the Canyon is not of this color naturally, but is dyed red by the infiltration or flowing over of storm and rain water, saturated with the powerful oxydization from the

red sandstone above. All careful observers must have noted that wherever the outer dyed wall has been eroded, the color of the so-called red limestone is brown, or gray, or white, as the case may be, but *never* red. I conclude, then, that the original rock



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DENDRITIC FORMATION IN CAVES — GRAND VIEW TRAIL.

of which the formations of the cave were made was white, and their preservation in this virgin state is owing to the sealing up of any water channels from the red strata above.

Returning now to the entrance after some hours of absence, I placed the slide in my camera, and am pleased herewith to present my readers with the first and only photograph I have ever seen made by candle-light alone.

As we stepped outside the entrance the darkness of Pluto greeted us. While we had been engaged

within, day had changed into night. There was no trail constructed at that early date in the discovery of the cave, and the knowledge of the difficulties of the upward climb we had made, in the full light of day, did not steady our nerves for the descent. But Mr. Berry is a man of expedients. In a few moments he had fired a withered cactus, and with the light of this torch we clambered on hands and knees, slipped or slid, stumbled or fell, down to the bed of Clear Creek Canyon, a thousand feet below, from which we soon reached camp.

A well-built trail, however, now leads to the mouth of the caves, and he is wise who, desirous of seeing the peculiar processes of nature's internal workings, spends the short time necessary to go as far into these caves as his guide will conduct him.

CHAPTER XII

THE BRIGHT ANGEL TRAIL

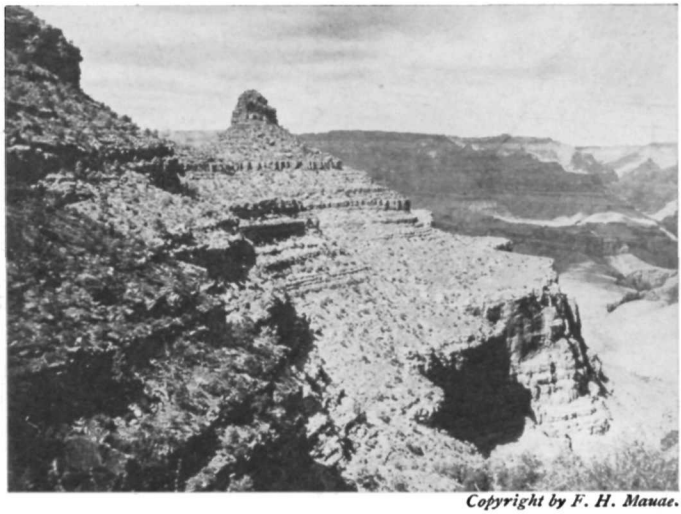
THIS is the trail directly reached by the Santa Fé & Grand Canyon Railway, and therefore the most accessible. Consequently it will soon be the one best known. It is located some twelve miles west of the Grand View Trail. It receives its name from the beautiful Bright Angel Creek, which empties into the Colorado River on the north side of the Canyon almost opposite to the spot where the trail reaches the river.

This — as were all the trails from the Little Colorado River to Havasu (Cataract) Canyon — was used first long ages ago by the Havasupai Indians, and, in the heart of the side canyon down which the trail goes, are still to be seen the rude irrigating canals which conveyed the large volume of water that flows from a near-by spring to the so-called Indian Garden, the richness of whose verdure is one of the great attractions to the tourist who gazes down from the rim.

Recently a new upper section of trail, well engineered and of easy grade, was constructed from the Bright Angel Hotel for over a mile.

Leaving the hotel, the trail drops westward for three-quarters of a mile, zigzagging back and forth until the top of the cross-bedded sandstone is

reached. Here, even the non-geological observer can see the faulting of the rocks, which has so broken and shattered the strata as to make a trail possible down these precipitous walls. The sign-board calls attention to the "drop" or "rise" of the



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BATTLESHIP IOWA ON BRIGHT ANGEL TRAIL.

sandstone, for, opposite us, the cap of this stratum is one hundred and fifty to two hundred feet higher than the same cap upon which we now stand. Mr. P. C. Bicknell, the geological expert of the Anita mines, states that all the copper mines of the region are found on a line almost due south from this fault, and his theory is that the copper was ejected during the time of the faulting.

Down about a mile the line of separation between the cross-bedded sandstone and upper red sandstone is very clearly shown to the left of the trail.

Immediately before us to the left is a majestic pile of the red sandstone, capping the red wall limestone. This is so much like a battleship that it has been called the Battleship Iowa.

A few feet farther and the cross-bedded sandstone may be seen far below to the right, showing perfectly the fault before referred to.

Here, too, it is well to stand and observe that the fault extends away down the side gorges across the river and to the summit of the Kaibab Plateau, making the canyon of the Bright Angel Creek; hence it has been called the Bright Angel Fault. A fine and comprehensive view also is had of the marble wall and the Indian Garden, and, far below, at the end of Pluto's Workshop, is to be seen a peculiar folding of the Algonkian strata, and, on the other side of the river the tilt of the same rocks.

It is a singular fact that no pines are found on or near the trail, while they abound on the rim, and that the Douglas spruce of the trail cannot be found on the rim.

As soon as the "blue lime" — as the stratum that crowns the "red wall limestone" is locally termed — is reached, there is an awkward piece of trail. Steps have been cut, logs placed upon them, and loose material thrown over all to make the descent easier; but it is still a place for the rider to dismount and go ahead, leading his horse. Imagine what the descent of this great gorge would have been had not the processes of nature kindly broken up these precipitous walls into sloping taluses upon which the trails of pygmy man could be cut.



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PILLARS OF EROSION ON BRIGHT ANGEL TRAIL.

Now we are on the summit of the red wall limestone, the most prominent member of all the canyon strata. It is a thousand feet in thickness, and its insistent mass is forced upon the attention everywhere. The face of this wall is carved into numerous alcoves, and as we near its base, we observe to the right a vast double-cornered recess which we name Angel Alcove. Here, look up to the rim and observe the peculiar and varied contour of the many pinnacles cut by wind and storm out of the cherty limestone.

From this point, also, the first good view is obtained of Buddha Temple, the dominating pile to the left of Bright Angel Creek. Below it is Buddha Cloister. Now look carefully at the ridge that leads the eye from Buddha Temple to Bright Angel Creek. It appears to be a portion of the main wall of the Kaibab Plateau. In reality it is a detached ridge, three miles from the plateau wall, and, under proper conditions, a vast temple may be seen between Buddha and the main wall. This I have named Manu Temple, after the great law-giver of the Hindoos.

At the base of the red wall limestone the trail opens up a little and permits easier breathing to the tyro on horseback, and from now on to Indian Garden we ride in the "Boulder Bed," where large blocks of rock of every conceivable shape lie as they fell or rolled from the strata above. Small shrubs and plants abound, and tiny lizards and inquisitive swifts dart to and fro, peering at the intruder as if to inquire his business there.

To the left of Buddha Temple and slightly nearer

to us is a massive though less ornately carved monument than Buddha, which has been named Agassiz Tower, after our own great geologist, to correspond with Geikie Tower, named after England's rock expert, which is farther down the river. It has a spire at its south end — Agassiz Spire.

Just above it and farther to the left is a peculiar temple, its cap composed of two acorn-like structures resting upon their cups carved out of the cross-bedded sandstone. This we name Isis Temple. It is the eastern supporter of a vast and gigantic rock mountain that towers over all the lesser structures in self-confident majesty. This is what Captain Dutton calls Shiva Temple, and thus describes: —

"It is the grandest of all the buttes, and the most majestic in aspect, though not the most ornate. Its mass is as great as the mountainous part of Mount Washington. That summit looks down six thousand feet into the dark depths of the inner abyss, over a succession of ledges as impracticable as the face of Bunker Hill Monument. All around it are side gorges sunk to a depth nearly as profound as that of the main channel. It stands in the midst of a great throng of cloister-like buttes, with the same noble profiles and strong lineaments as those immediately before us, with a plexus of awful chasms between. In such a stupendous scene of wreck it seems as if the fabled 'Destroyer' might find an abode not wholly uncongenial."

Now turn the eye away from Shiva across to the east of Bright Angel Creek, and there outlined against the sky are two of these noble-profiled buttes. The rear one, and the most dignified and majestic, is Brahma Temple, named after the first of the Hindoo triad, the Supreme Creator: for it

seemed to me that if Shiva might find abode here in the thought of strata *destruction*, Brahma might, with equal congeniality, revel in the *creation* of the noble, character-full structures made by the destruction of the featureless and uninteresting strata.

The smaller butte — an angular mass of solid, unrelieved rock, sloping in a peculiarly oblique fashion — is Zoroaster Temple, thus adding to the Hindoo pantheon a fane for the founder of the religion of the Irano-Persians.

Passing now through Indian Garden, made green and fertile by the flowing of a large spring of water, Angel Plateau is reached. This extends for two miles to the very edge of the river. As we ride in that direction we note that the stream, called Willow Creek, flows into a boxed-up canyon, narrow and boulder-strewn, then through a deep-cut ravine in the Cambrian to the Lower Garden. Here Nature has prepared for the erection of a dam which will convert Willow Creek into a beautiful Hanging Lake. A wall of solid schistose rocks divides the site of the lake from Lethe Creek, which flows eight hundred feet below. A dam fifty feet high will retain water sufficient to create the lake and give water power of untold voltage, for after the drop of eight hundred feet into Lethe Creek, there is still another four hundred feet fall before the waters reach the Colorado River. What a change such a lake will create! A body of pure, clear, sparkling water, hanging suspended in mid-air, overlooking a wild chaos of metamorphosed rocks, twisted, burned, tortured out of all original semblance into cruel and black jagged ridges that are

fiend-like in their eager desire that you should fall upon them to your complete rending. Indeed, here are revealed many of the secrets of world-making. It is a veritable under-earth workshop, so I have named it Pluto Workshop, and the great pyramid, black and forbidding, at the very edge of the river, is Pluto Pyramid. The creek, that now flows babbling along through these once fire-tortured rocks, is Lethe Creek, and the waters, if captured and cooled, are so delicious that they bring oblivion and forgetfulness of the allurements of the upper world to those who drink of them.

But the Hanging Lake does not yet exist. The waters of Willow Creek flow through a split in the rocks, and make a descent of two hundred or more feet so gently and quietly, and yet with such a sweet, mournful plaint, that one instinctively recognizes them as the Whispering Waters.

Now, hastening to the end of Angel Plateau to Angel Point, we observe at the end of Yaki Point, to the east, another great battleship in stone, which we name the Oregon.

In the red wall limestone, below the Oregon, is a prominent and imposing pile, named Langley Butte, after the accomplished secretary of the Smithsonian Institution.

Below us, in a sheer descent of twelve hundred feet, flowing through the black depths of the Inner Gorge, is the river, the sullen roar of its rapids striking our ears and filling our souls with dread. For it is a cruel river. Yonder waves have washed out from his body the soul of many a poor mortal, and yonder rocks in the rapids have eagerly struck

the breath of life out of him, while the loud roar and rage of the waters have drowned his dying cries.

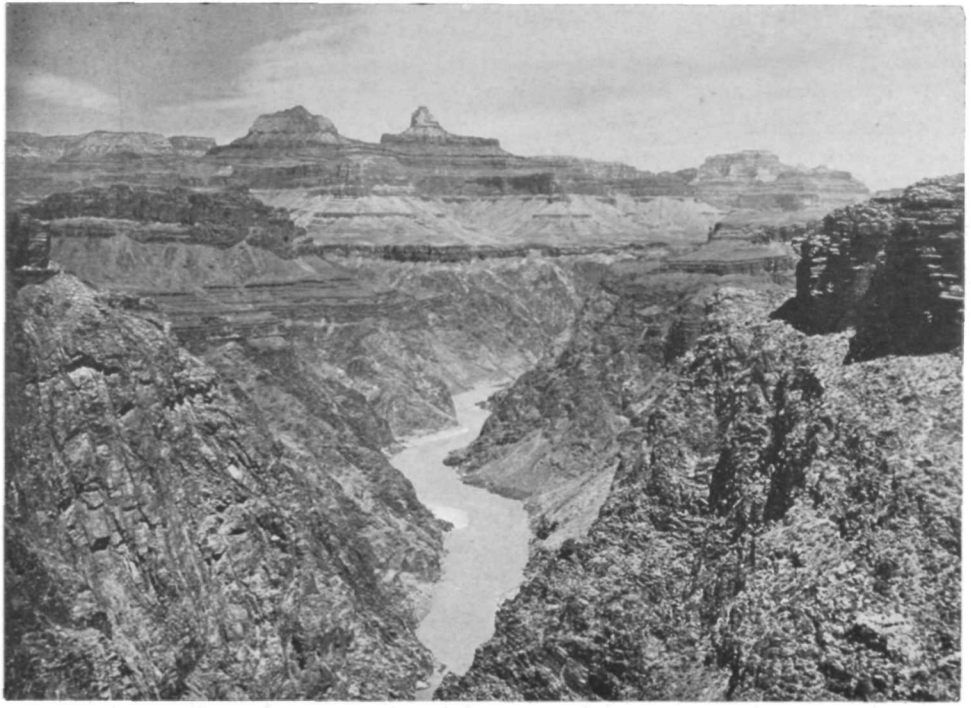
Raising our eyes from the river to the stratified rocks above the Inner Gorge, we are attracted by the rich reds and purples, which, lying under the one hundred and eighty feet of the yellowish and greenish shales of the Cambrian, seem as if they must be the Algonkians of the Grand Canyon series. They appear in a series of waves and terraces, so we call the distinctive masses across the river the Algonkian Terraces. Below us, to the left, the creamy red streaks of pegmatite and the yellow seams of iron, and the ridges of schists in the highly metamorphosed rocks of the Inner Gorge, arrest our attention. Mr. Bicknell informs me that here also is a streak of garnets which stick into the schistose matrix like plums in a pudding, some of them as large as a tea-cup.

Now, looking farther north and west across the river, two great terraced temples on this side of Shiva present bold fronts to us. The one to the north we name Confucius Temple, and the other to the south, Mencius Temple. Across the river, on the south side, and almost opposite to them, is a beautifully shaped mosque, which is the extreme end of Hopi Point. This we name Mahomet Temple.

What a long sweep of plateau the eye roams over from Angel Point! And what extensive views are presented in every direction! To the extreme east of the Point is a small, detached mass of boulder-strewn rocks, upon which the visitor should not fail to clamber. Below is the river, east and west, with

its rapids, sandbars, and quiet stretches. Across, are the Algonkian Terraces, leading the eye to the depths of Bright Angel Creek, whose pellucid waters flow through as wild a chaos of metamorphic rocks as we find in Pluto Workshop, which is on this side of the river, to our right. Look up thitherward, passing on the way Pluto Pyramid and Algonkian Twist. Away up, just below the Indian Garden, the tiny streak of the trail to the river can be followed, winding under the upper Cambrian wall, on to the schists, past Hanging Lake, and zigzagging down and around Pluto Pyramid to the muddy waters at its base.

It is an interesting view of a fascinating but rather arduous trip which every visitor should take, for, when the weariness is forgotten, a delightful and never exhausted memory is the reward.



THE COLORADO RIVER FROM ANGEL PLATEAU, SHOWING ZOROASTER TEMPLE AND ANGEL GATE.

CHAPTER XIII

TWO DAYS' HUNT FOR A BOAT IN A SIDE GORGE NEAR THE BRIGHT ANGEL TRAIL

WHAT an excruciating, exhilarating, fatiguing, bone-stretching, muscle-straining, nerve-wearing, and feelings-lacerating work is this exploring the side canyons of the great gorge. I have explored a number of them, and a description of one is a description of all, with minor differences in detail and variations of the adventures experienced.



"DAD," JOHN, AND W. W. BASS.

On Thursday, August 3, 1898, Dad, John, and I started to walk down the Bright Angel Trail. We were in quest of a large canvas boat that had been left near the river, and the use of which was offered to us if it could be found. The description given of its location was "down the trail to the Indian Garden, then work around on the plateau to the left. Pass one side canyon and

take the second. There will be no trail, but work your way down, and when you strike the river you will find the boat 'cached' up on the rocks under the lowest sandstone formation." It seemed all right, — it looks easy to find that boat now — on paper. We passed the garden, and came to the first canyon. This we left, and trudged on through the blazing sun to the second. For food we had brought down six biscuits, six oranges, two cans of tomatoes, and four or five lemons, expecting to return to camp above that same night. As we passed Indian Garden we left half our provisions, and, with canteens full, pushed along.

When we came to what seemed to be the second canyon, we climbed down and around until we came to a sandstone platform rounded off in steep slopes to the edge. Getting a glimpse here and there down below, we saw a possible fall upon rough, blade-like granite edges, cruelly thrust, like broken ribs through the skin of a man, through the bed of the river. Half an hour's careful search left us satisfied that there was no possibility of getting down here, so, climbing back, we sat under the shadow of an overhanging ledge and ate our frugal meal. Returning to the plateau, we walked some two or three miles farther west, and at last came to another side gorge. This certainly must be the canyon, so we began our descent. Carefully, cautiously, laboriously we lowered ourselves over the steep and slippery rocks, — down, down for several hundred feet, to where we stood on the ragged edge of nowhere, and a direct drop of several hundred feet before us. Nothing to do but retrace our

wearisome steps as best we could, edge around still farther, and seek in the main gorge — of which we now discovered this was but an arm — the descent to the torrent bed, and thence to the river. Half an hour's hard climbing brought us there. It was



O'NEILL POINT FROM BRIGHT ANGEL HOTEL.

all climbing; little walking; literally climbing, over rocks, around rocks, under rocks, surrounded by rocks. We were now in the wash of the summer torrent bed, full of rocks of all sizes, from a pea pebble to boulders larger than the dome of St. Peter's at Rome, St. Paul's in London, and the Capitol at Washington combined. Before and around us were boulders of sandstone, — red, gray, green, and yellow; of marble, — red, green, mottled, and variegated; of limestone; and, lower down, of schistose, and various colored granites. For a mile,

two, three miles we thus climbed, then we came to where a boulder, large enough to build a Santa Sophia in Constantinople, had fallen into the bed of the stream, and there it stood! We peered over its smooth and weather-worn summit, or, at one side, where lesser boulders had washed in and helped fill up a vacant place, and saw it was impossible to descend. To the left a wild, rugged slope of fallen boulders suggested we might get around it and descend on the other side. Up we went, over a place where a million tons of marble had fallen from no matter how many feet above, — marble in blocks that would have been the envy of a city contractor and builder, — and then, when we began to circle around our blocking boulder, our difficulties and dangers increased. The only way down was on the rough and crumbling edges of a granite dike, whose black ridges offered us a series of irregular steps down which a chamois or mountain sheep in a frenzy of fear might have been tempted to descend. A misstep meant death, for it is impossible to fall on solid rocks from a height of two or three hundred feet with safety. Slowly, cautiously, we picked our way. Now backwards, now forwards, but always descending. Safe at last, we moved on. Then came our final disappointment! We could hear the roar of the river; we could see a granite dike whose base we knew was in the river. We should be there after a drop of three or four hundred more feet, and we dashed on joyfully and expectantly. Already we had our hands on that boat! We saw ourselves opening it up, and then carrying it to the river and testing it, when, suddenly, we stopped! What! no

descent? Surely! There we stood on the top of a frightful drop of not less than three hundred feet, smooth, polished granite the substance, and not a foothold even for a frog. It was discouraging, and my comrades lapsing into forgetfulness, ripped out several expressive and sulphurous expletives. Sorrowfully we retraced our steps for half a mile, and then, after a council, began one of those frightful climbs that are so consoling when over and successful, and so depressing and disheartening when failures. We decided to attempt to climb up a thousand or more feet of granite, cross the knife edge, and see if it was not possible to get down on the river side. A forlorn hope, certainly! Yet sometimes forlorn hopes are successful. But think of and realize our circumstances! All our food gone except one orange and a lemon; with three nearly empty canteens; night close at hand; and, to add to our burdens, vivid lightning and roaring thunders now forced themselves upon our unwilling attention as we began to climb. John led the way, — now to the right, now to the left. Again and again, as he loosened a large rock, and it started on its headlong "bounces" to the bottom, his "Look out!" startled us into "looking up," to see him hanging on by the "skin of his teeth," a hundred feet almost directly over us. It was ticklish work — nervous work — exhausting work; but oh! what muscle and nerve developing work; what self-reliance, readiness of perception, quickness of action developing work! For an hour we climbed, bombarded all the time by heaven's artillery, now and then stopping for breath and a few moments' rest.

At last the top was reached, and what a disappointment it was! It was a perfect razor blade! At both ends, and on the opposite side from that up which we had scrambled, it dropped sheer off. Again we took breath and gained a little heart,



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TEMPORARY HOTEL AT THE HEAD OF BRIGHT ANGEL TRAIL.

and, — gave up the boat. There was no other course left now but to retrace our steps to the bed of the canyon, wend our winding way up its tortuous passage, reclimb the plateau, and seek the garden, — seven or eight miles of muscle-stretching work; no food; growing dark. In an hour we had gone, perhaps, a mile and a half, and now it was too dark to see our way. Dangerous enough work it was when we could see, but without light it was courting disaster, or possibly death,

to attempt it. The rain had soaked us through. We were all clad about alike. I had on woollen shirt, overalls, socks, and shoes. Not a very inviting prospect for an all-night session in the open air. We had noticed a clump of mesquite, as we came down, on a bench above. Climbing up to this, we soon had a fire, warmed ourselves, divided our solitary orange among the three of us, made a thinly sour lemonade with our lonely lemon, then took the little water left in our canteens, boiled it, steeped a little of the mountain rush in it, and after drinking it, stretched out on the bare, wet ground in our soaking garments, and were soon sleeping the restful sleep of the healthfully weary.

In the morning, breakfastless and waterless, we started, before sunrise, to Indian Garden. Fortunately it had not rained in the night, but no sooner were we on our feet than the rain descended furiously, with brilliant lightning and thunder accompaniments, and we consoled ourselves by sending imaginary telephone messages to the camp on the summit. "Hello, Central. Give me Bass Camp. You, Bass? Breakfast for three — strawberries and cream, oatmeal and cream, maple syrup and honey, dried toast, buttered toast, cream toast, porter-house steak, ham and eggs, baked potatoes, with hot cakes and coffee." This fancy did n't prevent our feeling hungry, and, pretty soon, getting wet through. This was our condition when we reached Indian Garden, where our tomatoes, biscuits, and oranges were. After refreshing drinks of the pure spring water and a restful stretch-

out, we took our frugal meal. A few hours later the three and one-half miles' hard climb to the "rim" and the four miles' walk to the camp were over, a good dinner served, and our experiences nothing but a memory.

CHAPTER XIV

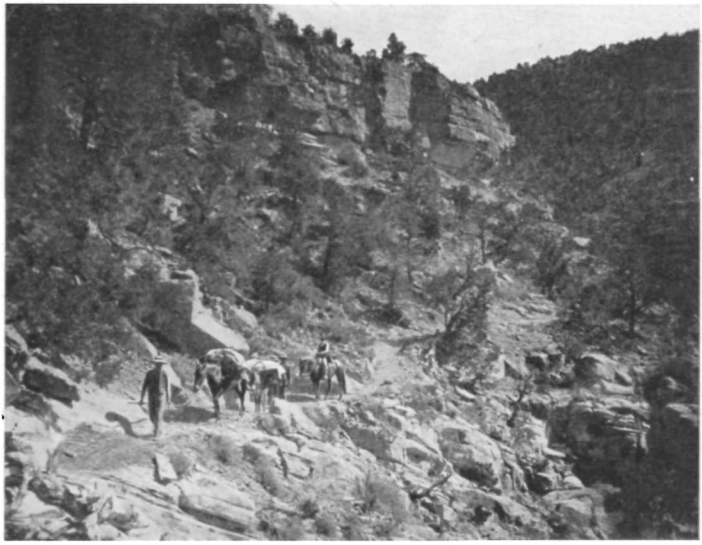
THE MYSTIC SPRING TRAIL

STANDING on the brink of the Canyon at Surprise Outlook, after the eye has become accustomed to picking out the numerous objects in the Canyon, it is easy to describe generally the course of the Mystic Spring Trail.

In order to form a general idea as to where we have to go, look down upon Le Conte Plateau towards the edge of Trail Canyon, between Huetha-wa-li Plateau and the Grand Scenic Divide. Seen from above, it presents a comparatively smooth and even surface, and appears to be dotted with a growth of dwarf-looking shrubs. Between us and the plateau a slope of talus extends, of sixty or seventy degrees, for a depth of fifteen hundred or sixteen hundred feet, when it breaks off on the summit of a perpendicular wall of rock nine hundred feet in height.

The trail begins not more than a yard from where we stand. One step and we are upon it. It glides down eastward for nearly a mile on the face of this talus, without a "zag" in it, and then zigzags for a short distance until a natural stream bed is reached. This is in the more solid portion of the cross-bedded sandstone. Near this point, a little below the trail, on the left, are two natural tanks or reser-

voirs, which catch the water as it races down the steep slopes after a shower, and thus stores it for future use. When these tanks were found by Mr. Bass they were completely filled with the débris that, for years, had been allowed to wash in and accumulate. Now that they are cleaned out, well



On the Mystic Spring Trail.

cemented, and carefully covered, they will hold several hundred barrels of water, the value of which in the dry season it is impossible to estimate.

Leaving the tanks and crossing this slight rocky ravine, the trail follows along the brink of a precipice until the so-called "Cliff-dwelling" is reached. I am inclined to the belief that this is nothing more than a corn storage house, a score or more of

which are found in the Havasu Canyon, especially in its upper reaches. As Le Conte Plateau and the region beyond was once the wandering ground and pasturage of certain Havasupai families, and they made their home in the interior of the Canyon, it is reasonable to assume that; near to their water cisterns, they would construct this food storehouse, where they could place their corn, dried peaches, dried pumpkins, dried meat, and other eatables during their short absences.

A little distance from the cliff corn-house the trail reaches a sort of break, down the face of the cross-bedded sandstone, where it descends in a zigzag course, back and forth, until Le Conte Plateau is reached.

Here the surface presents an entirely different appearance from what we saw twenty-five hundred feet above. It is broken and covered with mounds of earth and rock, while huge boulders are distributed over it. The shrubs have grown into a forest of fair-sized trees, and while from the rim it looked as though travelling would be easy, and that one could see all around him, it is found that if the trail is left it is an easy matter to lose one's self among the trees and upheaved earth and rocks.

We are in no hurry to reach the river, so let us see all we can, leisurely and easily, on the three out-thrust plateaus, before climbing Hue-tha-wa-li or descending Trail Canyon. As before noted, the easterly out-thrust of Le Conte Plateau is called the Grand Scenic Divide. From its summit one may look sheer down three thousand feet or more and see the dirty river scouring the rocks and

roaring along on its way to the Gulf of California, at the rate of what seems to be from ten to sixty miles an hour. But though we have descended nearly three thousand feet, our view of the river is so limited that one may cover it from sight with three fingers of the hand.

To the right towers Havasupai Point, three thousand feet above us. At its base stands a great symmetrical pillar shaped like Cleopatra's Needle in Central Park, New York, but six hundred feet high. The Divide swings around a quarter circle and shows that it is a gigantic mass of red sandstone and marble, as symmetrically built up as though done by a master mason, and away up on its weird side there is revealed to the spectator a monster monogram, "G. A. R."

We ride out to the point and there obtain a long view of the river deep down in the Inner Gorge of granite, and, as we stand by the side of Dick Pillar, we feel that the indefatigable baker of Thurso, whose researches formed such valuable contributions to geological science, has here a monument more grand, noble, and enduring than any that his admirers could have erected to his honor.

Returning now to the central or Hue-tha-wa-li (Mount Observation) Plateau, we essay the climb to the summit of the mountain from which the plateau gains its name. There is no trail here. It is pure climbing, and none will undertake it except those who love hard work and the marvellous view the summit affords. As we slowly take each step upwards we feel that we must find some ancient temple on reaching the top. What a site for one!



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THE COLORADO RIVER FROM NEAR DICK PILLAR ON THE GRAND SCENIC DIVIDE.

The gods themselves have hewn out this mountain as a magnificent pedestal, upon which reverent worshippers might place their temple and altars thereupon to offer constant worship and sacrifice.

It covers the interior canyon prospect in every direction. As a place of defensive retreat it would be absolutely impregnable. Only on the narrowest and most precarious of paths could the summit be attained, and the will of a score of brave and determined men could have kept the whole armies of the world in check, had such a conflict occurred before firearms were discovered.

Yonder, across the river, the keen eyes of our guide discern a mountain sheep, and we level our field-glasses upon him.

It is a great sight, to witness the flight of a band of "Big Horns," or mountain sheep, on the steep slopes of the Grand Canyon. You would think not even mountain sheep could keep their foothold, much less run at full speed on this sloping talus, so plentifully bestrewn with boulders; but they do it with perfect ease, and apparently with no consciousness of fear. They are wonderfully crafty, and it is hard to get near enough to shoot them, or with several companions surround, so as to entrap them. When they are driven to frenzy by apparent hopelessness of escape, they will dash to the edge of great precipices, and without hesitation jump down, often landing on their skulls, rather than their feet. A roll or two, and they are up and off, and in your astonishment at this negro-like acrobatic feat you lose all chance of shooting them.

It is on Le Conţe Plateau, in the region of Hue-

tha-wa-li, that many and various evidences of the use of this plateau as the home of the Indians are to be found. There are mescal pits, so long forsaken that they are buried under the talus of rock which has fallen; others, in the centre and on the sides of which huge trees have grown. There are storage houses in the cliffs where corn and other foods were placed, and houses occupied by the Indians themselves. Indeed, there are a few of these houses where the Havasupais yet come and live while they are making mescal, or gathering it to take away.

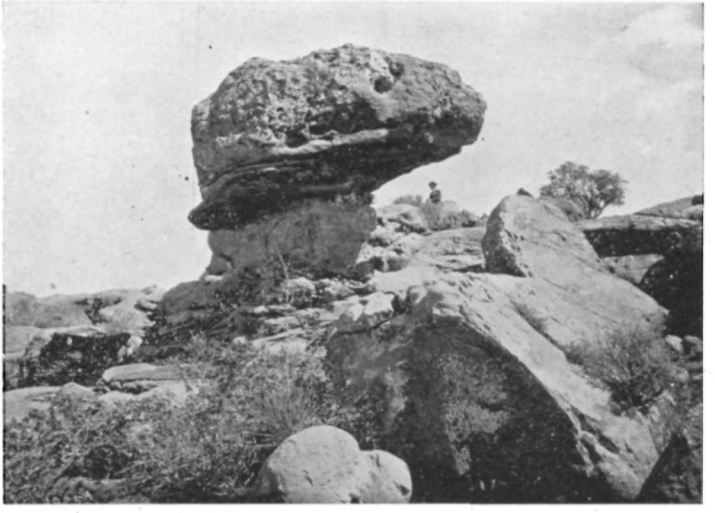
Even on the igneous rocks down in the very inmost recesses of the Canyon, similar evidences of human occupancy exist, and the Havasupais speak of them all as the residences of their forefathers.

Descending Mount Observation, we stand in interested amazement before "Balanced Rock," a huge mass of stone weighing many tons, the base of which has so disintegrated as to leave the upper and more solid portion resting upon the slightest possible foundation. While it does not "swing," as do the balanced rocks of Cornwall, it appears so much like them as to justify the name.

Now we may ride out to the point of Mount Observation (Hue-tha-wa-li) Plateau, where the view is similar to the one enjoyed from the Grand Scenic Divide, or shall have shortly from the Mystic Spring Plateau, the westernmost offshoot from Le Conte Plateau. We look down the vast recesses of Copper Canyon and see a score of "El Capitans" in the red marble walls on either side. Then we ride out towards Mystic Spring, passing on the

way a curious freak of erosion known as Seal Head Rock.

It was Captain Burro who led Mr. Bass to Mystic Spring, whose existence he had long known, but which all his most careful searchings could never find. They had become great friends, and Burro



SEAL HEAD ROCK, NEAR MYSTIC SPRING.

had learned that this white man had, so far, been true to all his promises. So, one day, after Mr. Bass had returned from another wearisome, disheartening, and futile search, Burro said, " Billy, you give me a sack of flour and half a beef, and I show you my spring, and you can always use it for yourself and your horses." The transfer of the property was made, and Mr. Bass was taken to the spring, which, to his great amazement, was so near

to where he had searched in vain for it, that he could have thrown a pebble into it. Hence, the name he had already given to it — long before he saw it — the Mystic Spring.

And it is mystic in more ways than one. Its curative properties in cases of dyspepsia, as well as the singular manner in which it seems to ooze out of the solid rock, make the name most appropriate. Now and again it disappears entirely.

Standing at the spring in front of us is a yawning abyss whose bottom is floored with the rocks of ages, and whose sides are perpendicular walls of rock. To our right is a deeper abyss of the same style of architecture. To our left, a still deeper one, the deepest one so far seen, and through which we obtain another view of the river. This is Mystic Amphitheatre.

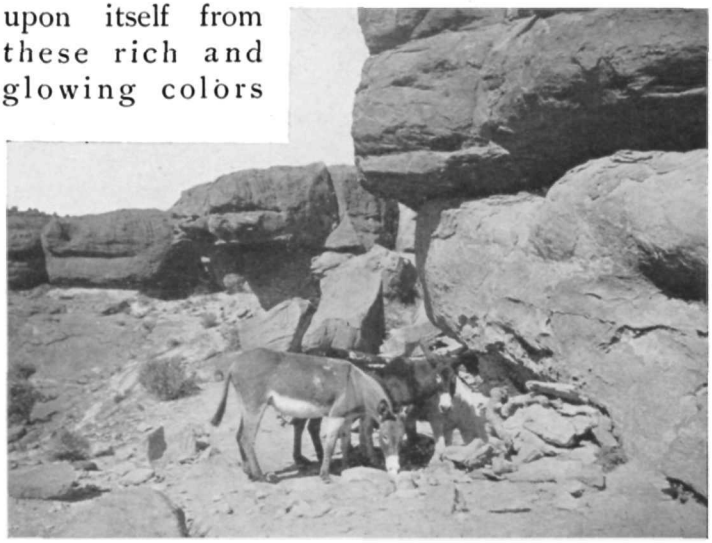
At the extreme north end of Mystic Spring Plateau, we look into the amphitheatre named the "Ruins of Paradise," on account of its towers and turrets and the transcendent coloring of its lofty vertical walls, which recalled Milton's description of the walls of heaven and the great difficulty the arch fiend found in scaling them.

Here, in the Ruins of Paradise, is the region of chromes and Naples yellows, the blues, and the delicate shades of browns and grays.

It is when you are among the shales and slates, and where the serpentine marble lies, that these exquisite colors reveal themselves in all their glory. These do not appear everywhere. They are not dominant, insistent, like the reds. It is only when you seek them out, in such secluded nooks as this,

that you can enjoy to the full their unique revelry of coloring.

Then, too, the luminous haze, which generally may be observed everywhere in the Canyon in the early morning or late afternoon hours, is nowhere so luminous and radiantly beautiful as down here. It seems to take upon itself from these rich and glowing colors



BURROS DRINKING AT MYSTIC SPRING.

some of their glory, so that the two effects combine to make an unequalled scene of transcendent gorgeousness.

Now, riding around from Mystic Spring to the head of Trail Canyon, we are ready for the river. How the trail winds around and takes advantage of every opportunity to descend. We are under the western wall of Hue-tha-wa-li Plateau, soon to

be curving down under Le Conte Plateau. As we enter the marble the walls grow narrower and narrower, until, for a short distance, we are within a mere gorge, but the stupendous height of the walls almost frightens us as we look up and see them conjoined to the sky. On the wall to the left is a great Gothic archway, that seems like an entrance to a vast and inaccessible cave. The contour of the entrance changes as we approach nearer to it, and we see that it is merely a break in the marble, where either the crushing of an uplift has mashed the rock and made it easily disintegrated, or it is the remains of one of the many vast caves — eaten out by acid-charged waters — found in this formation throughout the entire canyon system.

Down we go, farther and farther. The narrow canyon opens out, and we breathe more freely. The trail is excellent, and we ride in comfort.

Now we come to a great monoclinal fold of the lower strata, cut through by the storm waters, which again and again, doubtless, during the centuries, have dashed down Trail Canyon. The fold stands almost directly parallel to the course of the canyon, for a short distance, so that as the processes of erosion have been performed the tilted strata first appeared by being denuded of covering strata above and on each side of their upturned edges. Then, as erosion cut deeper, the wall composed of the folded strata formed an obstacle to the passage of the storm waters on its eastern side, as, at its lower exposed end the canyon makes a slight curve, and the fold is left undisturbed and uncovered as a portion of the right canyon wall. So, during some

violent storm, or, perhaps, by the slower processes of weathering, the perpendicular wall was cut through, and we now ride through a cut in the great uncovered tilt, where the curve stands upon our right, and the remains of the upturned wall,

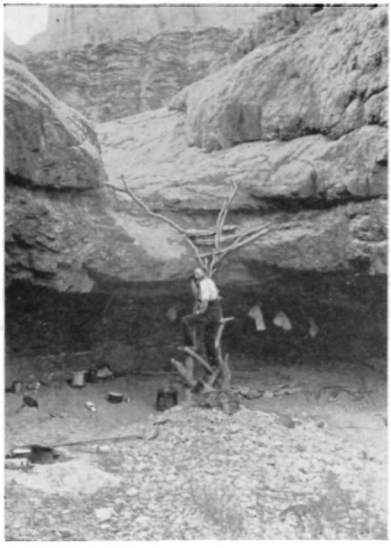


WHEELER FOLD IN TRAIL CANYON.

its upper edges jagged and rough, is upon our left. This fold I have named the Wheeler Fold, and its corresponding wall to the left, the Gilbert Wall.

A little farther on, and the trail, which has left the bed of the stream, turns into it, doubles on itself, and returns into a shut-in gorge. At its extremity we find ourselves in a camp more perfect and complete than the one at Mystic Spring; for the bed of the canyon here has so eroded as

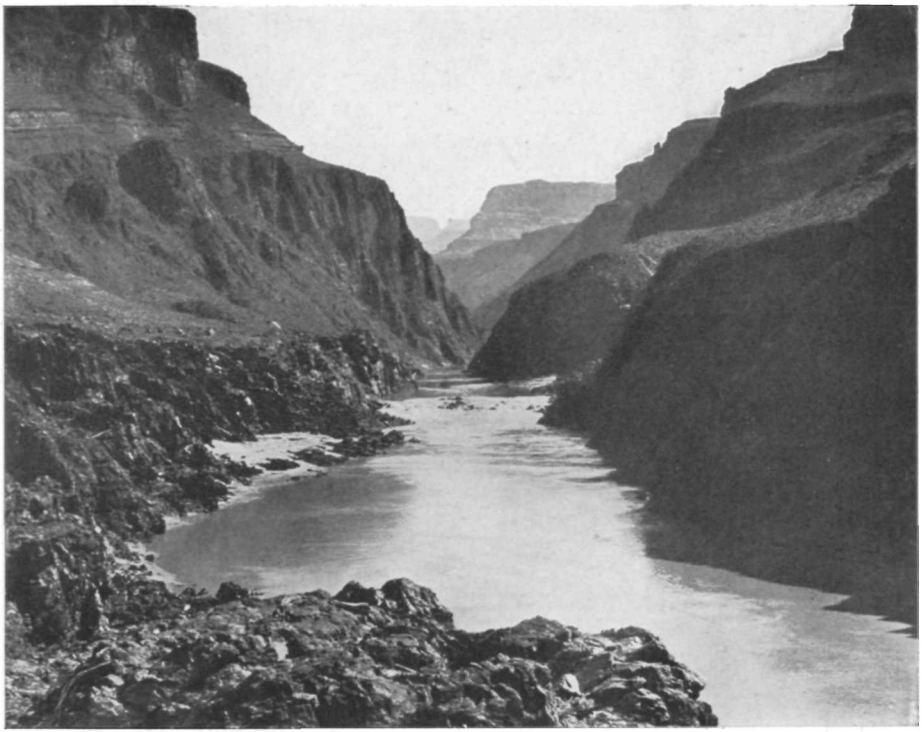
to make a precipice of fifteen or twenty feet, and the overhanging rock makes of the precipice such a place as the Cliff-dwellers built their fortress homes in centuries ago. Here Mr. Bass has stores of food, a portable forge, anvil, and other aids to his trail building and mining operations.



THE LADDER TO THE SPRING AT BED ROCK CAMP.

Above the camp, and reached by a rough ladder built of mesquite, is a tiny spring of pure, sweet water, nestling in a basin of solid rock.

From this camp the trail leads us over still another mile and a half, winding its sinuous and tortuous way over the steep and adamantine granite. There to the right is the place where we stood and looked at and longed to reach the river as recounted in the next chapter. But now the trail leads us to the muddy waters, and after watering the horses and tying them up, watching the fierce rapids which are somewhat similar to those described elsewhere, looking up and around at the buttes, temples, spires, and walls which surround us, we doff our clothing, and, in a safe harbor, plunge into the



THE COLORADO RIVER IN THE INNER GORGE AT THE FOOT OF THE MYSTIC SPRING TRAIL.

"raging Colorado" and enjoy the luxury of a swim. More of a bath, it is, than a swim, but it is delightful to feel one's self in deep water, even though it be the sand-, silt-, and color-laden water of the Colorado.

CHAPTER XV

THREE DAYS OF EXPLORING IN TRAIL CANYON WITH THE WRONG COMPANION

TRAIL Canyon is that inner side gorge down which the Mystic Spring Trail leaves Le Conte Plateau on its way to the river. On one of my visits some years ago, before this portion of the trail was constructed, I determined, if possible, to reach the Colorado down this canyon. Mr. Bass had been down several times, and, although he warned me that it would be rather a hard trip, he felt sure I could make it. I had with me at this time two companions, one a doctor, and the other "was not." No sooner did they learn of the intended outing than they also desired to go. Mr. "Was-not" was not very strong, physically, and Mr. Bass urged him not to go, but not content with this advice he came and solicited my counsel. I felt somewhat diffident about advising him, for, unhappily, I had learned that should I bid him remain, he would forever after regret and complain that I had had some ulterior object in not allowing him to go, and if, on the other hand, I said "Go," and the trip were to prove, as I felt assured it would, very arduous, he would not be the man to face difficulties with equanimity, and would condemn me for having permitted him to go. Still, as he wanted to go, and as, I must confess, I did not an-

ticipate anything like the hardships we afterwards encountered, I said that if he much desired it, he would better go, and I would do all I could to help him. I was soon sorry I gave him this advice, for, five minutes after we started, he began to complain,



LOOKING DOWN TRAIL CANYON.

and, with but few — very few — interruptions, kept it up until we returned, three days later. In leaving the upper section of the Mystic Spring Trail, we had to descend, for perhaps two thousand feet, an almost precipitous talus, with no suggestion of a trail. Now we were dropping down eight and ten feet ledges, then climbing over loose boulders, only to alight on a mass of sliding débris which carried us along perilously near a precipice five hundred feet high, over which we could hear the fore-portion

of our rocky stream fall upon the marble beneath. Several times we found ourselves on ledges which ended nowhere, and our steps had to be retraced.

The only provisions we had loaded ourselves with were a couple of cans of fruit, one can of salmon, a few dried biscuits, some sugar, and a small canteen of water. We thought we should surely reach the river that night, and there we could refill the canteen and return to Mystic Spring Camp the next day, where there was an abundance of both provision and water.

But, as we slowly climbed and slid downwards, and saw the sun hastening to his western domain, the long black shadows thrown in the canyon cast equally black shadows upon the hope that we should see the river that night. Indeed it was already starlight when I called a halt. I found a small sandy spot, where I thought we three could sleep. As the wind blew down the canyon at night I placed Was-not, our complaining friend, on the lee of a huge rock which effectively shielded him. The doctor took a position by the side of another rock on the lower side, and I lay in the open, almost at right angles with Was-not. I had chosen these positions purely for the benefit of my friends, but the kicker "kicked" at his position, and I had to reason with him and show him "why" I had thus placed him. Then he began to whine. "How was he to sleep in such a place? He had no blankets and no tent, and he had never slept out of bed or out of doors in his life. And what if rattlesnakes came to us in the night? or centipedes? or what would become of us if those gigantic rocks

should fall on us?" (they did look fearfully threatening in the semi-darkness) and what this, and what the other, until I fairly exploded with a somewhat petulant sermon on his lack of faith in the Almighty. I contended that, as he had used the best judgment he possessed in making this trip, he had as much right, after committing his way unto the Lord, to expect His protecting care as if he were asleep in his own bed. I then turned over, and had just gone to sleep when another whine began, and the doctor afterwards told me that poor Was-not was so nervous he had to sidle up to him, hold his hand, and soothe him as if he had been a child, before he could get him to sleep.

Early in the morning, after a frugal meal, we started on again. I could enjoy writing a long chapter on the wonders of the trip to our then less-accustomed eyes, but we were in a hurry to see the river. The sun came up, and it became hotter and hotter. Soon the canteen was empty, and the springs or water-pockets we had expected to find on the way down were not there. As we neared the river, travelling became harder and harder, and the heat grew so intense that where we had to pull ourselves over boulders, the rocks blistered our ungloved hands. About noon we did find a water-pocket, half full of a stagnant liquid in which toads, tadpoles, and mosquitoes, etc., held high carnival. Although we were already terribly thirsty, none of us could drink this horrible stuff, so we hurried on in order to get water at the river. Coleridge's words truthfully pictured our fearful state as, —

> "All in a hot and copper sky
> The bloody sun at noon"

shone down upon us with pitiless fury, and increased our already dreadful thirst. Imagine our horror, and the terror of our situation, when at last we came to a cliff of granite, to the summit of which we managed to creep, and crawl, and climb, and saw, three hundred feet below, the river dashing madly along, but could discover no possible way by which it could be reached. It was as absolutely inaccessible to us as if it were in the moon. Mr. Bass had explained to the doctor how we could get down to the river, by retracing our steps some distance and climbing over the cliffs to the left, but Was-not could not be persuaded to go, and he was horrified at the idea of our going and leaving him alone. We were indeed in a terrible quandary. No water, very little provision, a day and a half, at least, from Mystic Spring Camp, and a man on our hands who was worse than all the other calamities of the trip combined.

> "With throats unslacked, with black lips baked,
> We could not laugh nor wail."

It was too hot to think of attempting to return, and yet it was like being in a furnace, remaining where we were. Our empty canteen actually seemed to take on a fiendish face, and laughed at us every time we looked at it; the rocks seemed to grow hotter, and our throats, lips, and tongues more parched. So, making a virtue of our necessity, we returned to the water-pocket I had discovered on the down trip, and turning my felt hat inside out, scooped into it, water, tadpoles, dead and live mosquitoes, mud, slime, and the rest, and then sat on

the scorching hot rocks, the doctor holding the canteen and I the hat, waiting for the water to filter through. It took us a full hour to exhaust the pocket and obtain three-quarters of a canteen full of this "tadpole soup." Then we returned to where there was a little shade to be had, and spent the day until about five o'clock, dodging the sun. The moment the fierce Monarch of Day, who seemed determined to scorch our brains out, and then bake us alive, dodged over the western rim of our box-canyon, we started for the place where we had stayed the night before. Every few steps we had to stop and rest, and far oftener than I liked one or the other of us would want water. I carried the canteen, as I dared not trust the precious — though filthy and odorous — fluid in any one else's hands. When we reached our sandy bed, poor Was-not was so nervous that he could not sleep. He was far worse than on the previous night, and, after several futile attempts to get him to sleep, as a last resort I had to rub him down and massage him with a little of the valuable fluid from the canteen.

In the morning, while the stars were smiling on us, we started for the summit. The "water" had nauseated the doctor, and we had nothing to eat, but pluckily he trudged along. How I dreaded to see the first gleam of sunlight! I had often watched with intense delight the sparkling diamond the sun makes on a canyon wall, as in the Yosemite, and had even studied to find a low place in the rim where I could enjoy that indescribably beautiful effect, and then, running to obtain a different angle,

see it again and again, several times; — but now! how I longed for the power of Joshua, that successfully I might have bidden the sun stand still! But I had no such power, and ruthlessly, remorselessly, indeed, rather gleefully, it seemed to all of us, he finally shot over the walls with an unseemly and indecorous haste, and made our upward climb more arduous than before. We were all nearly at the last gasp, but Was-not felt that his opportunities would be lost if he did not expend his strength and nervous energies in complaining: "What a fool he was to have come on such a trip! Would the Lord ever forgive him for venturing on such a foolhardy errand? If He would, and would allow him to get out, a hundred million dollars should never tempt him to make it again," and so on, *ad libitum*, *ad nauseam*, until, disgusted and annoyed beyond control, the doctor called me on one side and said: "This trip and that man's whining are driving me crazy. Stop his howling or I shall become insane and kill him." I felt exactly in the same condition the doctor so graphically and tersely described, so, turning to Was-not, I burst forth: "You came down here of your own will, knowing as much of the difficulties as we did. We have helped and cared for you all we could, and now, I, for one, propose that you shall stop your howling and kicking. Can't you see that every breath you waste in this foolish complaining is exhausting your nerve energies, and the effect of it upon us is as bad as upon yourself? We're in a tight place, and it will be hard work for us to get out. Now you either quit, or, the next growl you

make we 'll leave you, and you can get out or not, as you like."

This emphatic and seemingly brutal remonstrance had the desired effect, for, of course, we could never have left the poor fellow down there, no matter what he had said or done, but it was a comfort to "hear him still" for a while.

During this "interlude" the doctor built a signal fire, in the hope that the smoke would be seen by Mr. Bass, and he would come or send some one to our rescue. But, unfortunately, the breeze sent the smoke down the canyon instead of allowing it to ascend, so that the effort was in vain.

Again we started, and slowly labored on, and just as the last sip was taken from our canteen, we came to the final climb, helped each other up to the Mystic Spring Trail, and then — lay there. But "lying there" would never do. We were all faint from loss of food and water. We held a consultation. One of us had to go to Mystic Spring — three miles away — for help. Of course Was-not could not go, — it was between the doctor and myself which should brave the heat of the afternoon sun. I offered for the service, but confessed my doubt as to my ability to stand the heat. If I had had shade I think I should have gone without a question, but — The upshot was, the doctor bravely went, and Was-not and I lay in the shade of the rocks as best we could. I think that he lay offering thanks, — I offered mine, with a sincere heart, — and then to divert my mind from the pangs of hunger and thirst, buried myself in a few pages of

one of Wilkie Collins's novels which I had slipped into one of my pockets. In about an hour and a half — it seemed an age — Mr. Bass's partner hallooed as he crossed the Winchell Ridge, and soon after, with two extra horses, and two generous canteens filled with the refreshing water of Mystic Spring, rode up, and we were saved.

How delicious that water was! and how I longed for the neck of a giraffe to feel the exquisite sensation prolonged as it bubbled into my mouth and down my throat! I wanted two yards of throat instead of the little I had. After this it was an easy ride, and a delightful arrival at Mystic Spring, where we found the noble doctor already recuperated and almost ready for another trip. The next day we were all right, and it would have required only a powerful enough object, and two more canteens of water, to have sent us off on a similar expedition. Was-not has since expressed himself as to the "folly" of our adventure. Why go down into that canyon? Where could any benefit be derived by ourselves or others? Why cannot men be content to stay in places of safety and comfort, and not jeopardize life by trying to know more than easily comes to them?

And I cannot help the reflection: how true to life — or many people's conception of life — this kind of complaining is. Was-not is right, after all, from the worldly-wise standpoint. It is an unwise and dangerous thing to explore that wondrous canyon-mystery we call "life." Happy is that man who is content to remain on the dead level, and who neither seeks to penetrate the depths or the heights

he sees around him. True; they are there, — he recognizes their existence, but cares not to know, dares not to risk finding, the mysteries which may be hidden therein. Why dare? Why risk? Has he not bread and butter as it is? Down there may he not lose it? Better let well alone, and let the canyon's deeps be explored and the mountain's heights and fastnesses scaled by the "fools" who will dare and venture, because they are not content where they are.

But, thank God! for adventurous souls who *will* dare, who *will* venture, who *will* explore, even at risk of life and all that ordinary souls hold dear. The world would soon die of stagnation and dead-rot were it not for the Leif Ericsons, the Columbuses, the Drakes, the Cabrillos, the Wattses, the Stephensons, the Edisons, the Morses, the Franklins, who in all the walks of life *will* leave the ruts and seek to find out the hidden mysteries of Nature and Life.

And as in the physical so in the mental world. We need the daring souls who will face the work-a-day common world with new and startling thoughts, who will soar into the heavens and through the canyon depths on the wings of imagination and bring us back the flowers and food found in their flight.

Yes, we are glad and thankful that the daring ploughman is to be found who ruthlessly and cruelly, it seems to us, drives his ploughshare over the field whose harvest we are now reaping. And he makes it barren and bare! But the new seed is sown by the Almighty Father of us all, and

soon a new, a richer, and a fuller harvest comes to us, and we discover, — nearly always too late, though, — when the ploughman has gone to his eternal rest, — that he was our bravest and our best friend.

CHAPTER XVI

MR. W. W. BASS AND HIS CANYON EXPERIENCES

EVERYTHING depends upon the "angle of vision" in which you stand as related to any given subject. To the neat, finical, faddy people, who use sapolio on Monday, Tuesday, Wednesday, and all the other secular days, in order that they may rest on Sunday, and whose linen must be "just so," and the cooking even more so, and everything in life done on the perfect plan, the semi-Indian life of the pioneer and explorer in wild Arizona would be a torture and a misery.

What a life to lead! Never, or seldom, sleeping in a house, but out of doors, on Mother Earth's sturdy bosom; dusty, dirty, rocky, muddy, often wet and always hard; bugs, flies, fleas, mosquitoes, centipedes, earwigs, rattlesnakes, and scorpions as occasional companions; in the neighborhood of rats, bats, wolves, foxes, coyotes, and skunks, and, now and then, bears and mountain lions; cooking over a camp fire where everything gets smoked, black, and dirty beyond remedy, and where handles get red-hot and cut into one's flesh, and where smoke gives flavor to everything, — and this in the best of weather. But in "other" weathers! Think of cooking in a sand-storm, with fine sand penetrating everything; in a rain-storm, when wood

is wet, fire won't burn, and everybody is ill-tempered, and hungry; in a wind-storm, when the smoke whirls and swirls in every direction, and one's eyes are blinded, and the fire burns now to the east, then to the west, veers to the north, then to the south, and finally to all points of the compass and up and down at the same time! And eating and sleeping and riding and driving and working have all to be done under similar adverse conditions. Away from civilization and humankind, seldom meeting men, much less women, and many of those that are met "rough and ready," good-hearted, good-natured, but profane, unrefined, vulgar, and uncouth, "on the draw," equally ready for a game at cards, a "booze," a row, or a fight; with such associates as these one would think life would be a failure, and that all man's highest aspirations and destinies would be overlooked and forgotten. Yet it need not be so! The pioneer may be, and often is, rough and uncouth, but it is not uncommon to find him regarding all the things mentioned as the merest incidents. *Life itself* is in breathing the pure, unsmoked, unsmelling, un-bacteria-laden air fresh from God's desert, forest, mountain, and canyon laboratories; in seeing and feeling himself under the clearest sky of God's creation; in walking in His temples of stately aisled trees, sweet-smelling, health-giving, and soul-uplifting; in going with deep reverence into His sculptured and cloistered cathedrals of deep canyons, mysterious and glorious, marvellous and sublime; in hearing His voice in the joyful songs of birds, the whispering of leaves, the roaring of rivers, the babbling of

brooks, the crashing of thunder, and the thousand and one sounds that animate Nature gives vent to in accordance with the Creator's will. In the buoyant sense of freedom and contact with God Himself that are two of the rewards of his solitude; in the grand development of individuality, selfhood, calm confidence, and self-reliance that necessarily come to him if he continues in such life, — these are what make up his pleasures, his compensations. He may be grizzled and unshaven; his clothes soiled and worn; his linen torn or uncared for; his food coarse and rudely prepared; his sleeping accommodations gypsy-like and unprepossessing, his speech unlearned and unrefined; yet if the men who live in cities and who are the reverse of him in these things were to come in contact with him more, the world would progress with a speed hitherto unknown, the doctor's work would largely disappear, the doors of the insane asylum would be closed, the lawyer would be much less called upon, and the numbers of the priest ridden and driven much reduced.

Such a train of thought is naturally inspired each time I look upon the sturdy personality of my friend, William Wallace Bass, the only *real* guide into the Grand Canyon of Arizona.

He was born in Shelbyville, Indiana, October 2, 1849. In 1850, his father, attracted by the gold excitement, came to California, died in 1851, and was buried in Sacramento. The year-old boy had no memory of his father, but, as he grew older, the story of that sad and untimely death out in the West was always a peculiar source of attraction, and ac-

counts for the readiness with which he hurried westward when the opportunity arose.

As he grew to manhood he entered railway life. Shortly before coming to Arizona he was train despatcher on the Elevated Railway of New York, when his health broke down, and General Winslow,



JOE, THE BURRO; SHEP, THE DOG; W. W. BASS, THE CANYON GUIDE.

then Vice-President of the Atlantic & Pacific Railway and President of the St. Louis & San Francisco Railway, urged him to visit Arizona and see if the climate there would not restore him to health.

For eight years he had been a conductor on the Erie Railway, under the presidency of "Jim" Fisk, hence it was natural that when he first arrived in Arizona he should endeavor to resume work at the

occupation with which he was familiar. But dissatisfied with railway work, in 1883 he took up a ranch eight miles from Williams, and there lived in a cave formed by the waters of the Havasu (Cataract) Creek he has since so thoroughly studied.

Soon after his settlement in Williams he read in some Arizona paper one of those strangely romantic accounts of the Havasupai Indians elsewhere referred to, and this gave him an intense desire to see so peculiar and wonderful a people, who were said to combine within themselves so many characteristics of the Indians of centuries agone. He had also heard of the prospecting trip on which Mooney was killed, and had accidentally met one of the men who was with Mooney at the time. This man had informed him that there was an old Indian trail which crossed Havasu Canyon at a point where it was "boxed in," which would lead him directly to the Havasupai village. The general supposition at that time was that the Havasu Creek "boxed" soon after leaving Williams, and was impassable and "uncrossable" after it was thus closed in.

Experiencing difficulty in inducing any one to take so risky and arduous a trip merely for the pleasure of seeing a few Indians and their home, he concluded to go alone, and, accordingly, made his preparations. Eating in a restaurant the day before the start was to be made, a man came and accidentally took the seat by his side. By and by the two entered into conversation, and it turned out that the stranger was an Easterner with whose friends Mr. Bass was somewhat familiar. He was wearing an elegant gold watch on which was inscribed "Pre-

sented to J. W. McKinney by Charles McFadden as a token of efficient service rendered in the construction of the West End Tunnel of the Lehigh Valley Railroad."

And now I will tell the story of their trip in Mr. Bass's own words as far as possible.

"I soon found he knew all my friends, and was a railroad man. So was I. So, when he asked if he might accompany me on my trip I was glad to have him do so. I had secured the latest government map of the region, and, with plenty of provisions, bedding, two guns, our revolvers, and ammunition, we started. Each of us had a mare with a young colt, and we had a white shepherd dog, and a pack burro, which also had a colt. It was the 8th day of September, 1884, when we started. For two days we met with little or no water. The supply in our small canteens gave out, and we were in a bad fix. The third day out we found a little more water, and entered a region where we passed alternately through canyon walls and fertile valleys. On the 12th we came to a place in the bed of Havasu Creek where a large volume of water was held, doubtless from some cloud-burst, and our horses were so famished for water that they rushed into it and would not be restrained, so that they nearly drowned. I suggested we remain here for a few days, but McKinney was in a hurry to go on, so about four o'clock in the afternoon, filling our canteens and letting the horses drink all they would, we started again. That night we made a dry camp, and by daylight next morning were once more on the move. About ten o'clock we came to where

there were several deep gorges and pretty rough travelling, so, leaving the horses and burros in McKinney's care, I went in search of water. I soon came across an Indian trail, which led down the main gorge, and, following it a little way, came to a place in the rocks where there were several small water-pockets partially filled with the precious fluid.

"I returned for McKinney. When he saw the spot, he concluded we were not far from the Havasupai village, for from the stories that had been told us in Williams when it was known we were about to start, we expected to come to the waterfalls first, on the crest of which we could stand and look down the three hundred feet upon the Indians at work in their fields below. The water, we were told, came right out from the rocks and dashed over the falls.

"As McKinney was older than I and had had some experience, I yielded to him when he expressed the determination to go on alone to the village. Accordingly he took the rifle and field-glasses, with the remark that 'It could n't be far, and he 'd go and see if he could find the falls.' Although it was now well along towards noon, we had had no breakfast, as we had waited for water, so I agreed to go back and cook breakfast, and wait his return. I did so; ate my own breakfast, and waited uneasily for three hours. Then I had my dinner, and, as he still did not come, I began to pack water to the animals.

"McKinney was thinly clad, as it was warm weather, and he had on neither coat nor vest. He took no blankets, food, nor water with him.

"At this point the bed of Havasu Creek begins its descent into the crust of the earth, and is soon a canyon about twenty-five feet wide and very deep. For two or three miles it grows deeper and deeper, and, in places, the walls are so narrow that they almost overhang and shut out any but the smallest glimpse of the sky overhead. It is a literal canyon. In some places great rocks — boulders — have rolled in so as to make travelling pretty severe work.

"That night, as McKinney did not return, I went and stayed with the animals, carrying them water in the morning in our camp-kettle, dutch-oven, and canteens. After I had watered them I found a way to bring the horses and our supplies down to the water-pockets. Then, after baking bread, I went on a hunt for some of the game whose tracks I had seen in profusion. There were antelope, deer, quail, and rabbits in abundance, and soon I had killed all we could eat.

"By this time I had decided that some accident had occurred to McKinney, — he had either been bitten by a rattlesnake or had tumbled over some bluff or other, and I had better go and hunt for him. So I prepared a rope and some bandages, filled the canteen, got my gun, prepared provisions, and with the revolver in my hands started. I had not gone more than a mile or a mile and a half when I came to a nest of rattlesnakes, and some of these I killed with the gun, thinking the sound of the report might warn McKinney that I was coming. Soon afterwards I came to a perpendicular jump of forty or fifty feet, below which I could see a change in the formation from the hard limestone to a white

sandstone. I got down by climbing around, and on the sand I saw his tracks. Here, in the bed of the canyon, were some walnut and alder trees, and some pinions. I walked on to the next bend in the canyon, and there saw pony and moccasin tracks, which completely obliterated McKinney's. This put me into a state of considerable trepidation, for common report around Williams said that if a man was found anywhere near the Havasupais with revolver and cartridges, they would kill him. I confess I felt afraid both for McKinney and myself, and began to think I had seen the last of him. Here the canyon took a due west turn. Hitherto it had been going north, and now it widened out and became deeper. As I could now see a long way ahead, I determined to go on anyhow, and did so, until I heard the noise of falling stones. Looking up, I saw an Indian pony on the slopes grazing. The tracks in the bed of the canyon were quite fresh, and I did n't know but I might run into a band of hostile Indians, and, as I was very much afraid of rattlesnakes, especially when night came, I decided that, as it was growing dusk, I would try to climb up the south wall out of the canyon and return to camp that way. I had quite a load, — a three-barrelled Baker gun, a six-shooter, medicines, canteen, provisions for three or four days, and a long coil of rope, — and found it quite a task climbing, but succeeded in reaching within about five hundred feet of the top, when I came to a perpendicular wall with a narrow shelf running along its base. I followed the shelf, until it reached an amphitheatre and there broke off abruptly. Directly over my

head, but fully twenty-five feet above me, was an overhanging angle of rock. This was my only hope. I must either get over that, or go back. So, with a desperate throw I managed to get the rope across the projecting angle so that I could hold on to both ends. Fastening all my supplies together and tying them on the end of one of the ropes, I began the ascent, placing my back against the wall and pulling myself up hand over hand. On reaching a shelf above, I rolled over upon it exhausted and nearly insensible, but had presence of mind enough to secure myself with the rope. When I came to, I found one more effort would release me, and, gathering all my remaining strength, made it, and reached the top just as the sun was going down. After a little rest I revived, and fortunately found a trail going east. I followed it for a short distance, but it was soon quite dark, and, when I entered the thick timber I was unable to see it, and before long felt myself hopelessly lost for that night, at least. As I stood, wondering what to do, something white came rushing towards me, and in a moment jumped upon me with every demonstration of pleasure. It was my dog, which I had left at the camp. From the time it took us to go — I estimated afterwards — we were fully seven miles from camp, yet the faithful animal went ahead on the trail, and he, being white, I was able to see him, and he took me safely back, where I camped in security and comfort.

"Next morning (Sunday) I found the water pretty nearly all gone, so baking up a good supply of bread and meat, enough to take and enough to

leave, I sought a smooth place on the limestone, where I wrote a bold notice for McKinney, should he return, that I had gone to Williams for assistance and he was to wait here until my return. Then, as I noticed that the coyotes were in the habit of using this water hole, I hung the food up, out of their reach, directing him where to find it, and then sorrowfully started back for Williams.

"That night I travelled until four o'clock in the morning, when the burro and one of the colts positively refused to go farther, so, stretching out in the bed of Havasu Creek, I rested, resuming my journey as early as possible before sunrise. At noon I came to water, and there camped and rested a while, then, taking Williams Mountain as my guide, started off again. In two days I reached my ranch and cave, watered the stock, and continued on to Williams, arriving there about ten o'clock at night. I went directly to the restaurant where I had met McKinney, and found the proprietor about to retire. I was wild and rough in appearance, mentally worried almost to death with the distress and harassment of the past few days, and worn out with the hardships I had endured. My lips were swollen and cracked, and my tongue so black and thick I could scarcely have spoken had I had the strength. Unable to eat, I managed to make known my want for a bottle of beer or some other gentle stimulant.

"The proprietor and one or two guests took me, at first, for a crazy man, but as soon as the former recognized me, he cried out: 'What! You back already? Where's McKinney?'

"'He 's lost,' I whispered thickly.

"'Lost! How 's that?'

"As fast as I gained strength I explained, and said I wanted to go right back next day with a party to find him. Then, caring for the animals and walking over to my own house, I was soon asleep in bed. The next morning it was about nine o'clock before I got out, and went immediately to find some one to go with me to find McKinney. No one seemed anxious to go, and I soon noticed groups of men looking suspiciously towards me, talking earnestly as I came up, but remaining ominously still when I approached.

"After I had talked pretty roughly to some of them about their cowardice in leaving a man to perish without any attempt to find or rescue him from hostile Indians (had he fallen into their hands), a number of them agreed to be ready to start with me at four o'clock that afternoon. When the time came, however, there were but four who were ready to go. These were the Justice of the Peace and ex-officio Coroner, Scott, a carpenter named Hurd, who claimed to be an expert trailer, a doctor named Mason, and an Irishman named Baggott. That night we went to my cave and stayed there, and next day travelled as fast as we could, reaching the water in Havasu Creek where I had previously camped. Then, the following day, about two o'clock, we reached our camp. As we had brought plenty of water with us, we prepared a meal, and as soon as it was eaten Scott desired me to take himself and Hurd to the spot where I had lost McKinney. I took them to the place, and when

we arrived they were determined to go on into the canyon that night. I explained the difficulties of the descent and urged the propriety of their going around by the trail and down that way. Hurd was emphatic in insisting that they go straight down. They could climb out anywhere, the ignorant fool claimed, and, more preposterous still, he said Baggott and I could follow them along the rim of the canyon and throw blankets and food down to them if it was found impossible to reach the village that night. They went on, and I returned up the trail with Dr. Mason to the camp. When we got about half-way up, the doctor, who was troubled with heart disease, was taken sick. I cared for him as well as I could, and as he began to recover he turned to me and said, 'Bass, I feel sorry for you. I 'm going to tell you something, but I don't want you to give me away.' Then, as I gazed at him in amazement, he continued: 'The people in Williams think you killed McKinney, and they have sent me to perform an autopsy on his body, Scott, the Justice and Coroner, to hold an inquest, and Hurd as an expert trailer to find the body if you 've tried to dispose of it. Our orders are to bring you back to Williams anyhow. They were talking pretty earnestly about hanging you before we left, and you had a narrower escape than you imagine. But Scott persuaded them to wait until we 'd been out to see the body. That 's why those fellows are so determined to go into the canyon to-night. They expect to find McKinney's body somewhere down there.'

"You can imagine the anger, amazement, and

horror with which I heard these words. It was the first intimation I had received of anything of the kind. I had noticed the ugly looks of the men in Williams, but it never occurred to me that the dastardly wretches imagined I had killed McKinney.

"But the doctor continued, 'Report has it that McKinney had a very valuable watch and four hundred dollars.'

"The contemptible suggestion implied in these words so infuriated me that I started back after Scott and Hurd with the exclamation, 'I 'll go with them,' but the doctor was so sick and nervous that, yielding to his earnest solicitations, I returned with him to camp.

"By this time I began to feel somewhat distressed about Scott and Hurd; I knew they had little or no food or water, and that they were in far greater danger than they imagined. So, though Dr. Mason and Baggott hated to move, and I knew it was not the best thing to do, I decided to follow along the rim of the canyon as Scott and Hurd had asked us to do, ready to help them should any emergency arise. I did not want it to be said afterwards that I would leave those fellows in danger, even though they were hunting evidence to hang me. So we started along by the rim, ready to 'throw down provisions and blankets' as Hurd, — poor simpleton! — had suggested. As it became dark we came to a side canyon which, though so narrow that we could throw a stone across it, took us so long to ride around that by the time we reached the other side it was dark. Baggott and I now went to the edge of the main canyon and fired, waiting for

a return signal, as agreed upon, from Scott and Hurd below. But we saw and heard nothing, so returned to Dr. Mason and camped. The doctor was dreadfully afraid of hostile Indians, and Baggott was worse, appealing every moment in most piteous tones to the 'Blessed Virgin and all the howly saints to protect him.' He went out and staked the horses, but somehow staked them so that the ropes crossed. We had not been long in our blankets before some mountain sheep came and stampeded the horses. We discovered next morning what animals they were from their tracks. Poor Baggot was too terrified to yell. He sat up on his blankets and fervently prayed to the 'Howly Saint Peter and the Blessed Howly Mother' to save him from being scalped alive. When I got out to the horses I found them pretty badly mixed up, and had to cut the ropes ere they could be straightened out. Then Dr. Mason wished me to come and sleep by him with the gun in my hand.

"Next morning we decided to go back to the water in Havasu Creek and stay until Scott and Hurd came back. We left bedding, provisions, and water at the camp, and a note saying where we had gone, and then started on the twenty-five miles return. It was night-time when we reached the place, but just light enough to see that the water was covered with ducks, some of which we killed. The following morning I made a pot-pie while Mason and Baggott slept, and then, when they arose, we three sat around it and were enjoying the delicacy when we heard a horse coming. Looking up, there stood an Indian before us and an-

other one following. I grabbed my gun and the doctor his, while Baggott 'hollered' and then fainted. I held my gun as if to fire, when the Indian stopped me by raising his hands and showing me that he had no gun. Then I lowered mine and went up



NEAR WHERE MCKINNEY WAS FOUND BY THE HAVASUPAIS.

to him. He gave me his hand, and when we had shaken hands I motioned him from his horse, and invited him to eat.

"The other Indian was his son, a lad of some twelve or fourteen years. After he had had a hearty repast he began to talk, — which of course we did not understand, — and to make marks in the sand, which latter, combined with his gestures, soon informed us that the Havasupais had found Scott

and Hurd, nearly dead, and, at their request had guided them back to the camp, where they earnestly requested us to return and fetch them. As well as I was able I asked about McKinney, — a third man who was lost some time previous. To my joy, the Indian explained that he also was found, and, thrusting his tongue out of his mouth and rolling his eyes, he indicated the fearful condition of distress in which the poor fellow was discovered. After he had rested with the Indians for three days, and had been most hospitably entertained, feasting on their peaches, which were ripe at the time, the Havasupais had sent him back by way of the Black Tank Trail to Williams in the company of two prospectors who had been in their canyon. This Indian had helped care for him, and had not only loaned him a horse, but had given him a blanket and provisions, for which McKinney had promised him a good army overcoat, which he was now on his way to Williams for. The doctor's horse being lame and he too sick to go back to the canyon, and his fear of the Indian considerably reduced after hearing of the treatment of McKinney and the others, he decided to go on with him to Williams, while Baggott and I started back. On the return trip Baggott lost two blankets — one of Scott's and one of Hurd's — through his careless failure to properly cinch his horse's saddle. He went back to find them, but failed to do so. In his distress at what he expected of the anger of Scott and Hurd, he said, 'Shure, and what 'll I do?' With a laugh of sarcasm I suggested, 'Tell them you threw them down into the canyon wrapped

around some provisions.' The suggestion delighted Baggott. 'Begorra, that's fwhat I'll do.'

"Here let me anticipate my story a little just to say that this was exactly the yarn Baggott told when the two men discovered the absence of their blankets. 'Fwhat!' exclaimed he, 'did n't ye tell Bass and me to throw you some provisions wrapped up in a blanket? And did n't I wrap up a jack rabbit in the one, and a loaf of bread in the other, and throw them down the canyon to you?' And to this day, as far as I know, the Justice and his companion know nothing to the contrary.

"Now to resume the thread of the narrative. When Baggott and I reached the camp neither Scott nor Hurd were in sight. Going down to the water hole to find them, I met Scott coming alone.

"'You're a nice man, you are, sent out to trail me to death and never to say a word to me about it,' was the salutation I met him with. He turned paler than his privations had made him as he replied: 'I had to promise those fellows in Williams that I would be responsible for your return or they would never have let you leave town. They would have hung you there and then!'

"Believing that perhaps he spoke the truth I left him, and went on to meet Hurd. As he approached I levelled my revolver on him and said: 'Before you come another step farther up this trail I'm going to find out who sent you on this trip and what they sent you for!' He began to stammer out some lie or other, but I stopped him. 'It's no use your lying. You came here to trail me to my death. I've got the drop on you. Now tell me all about

it, and tell me quick.' Without further hesitation he named over the men who had sent him. They said I had undoubtedly murdered McKinney, and he was to come and find the body and help bring me back to Williams to suffer for the crime.

"'What did you find out?' I asked.

"'That all you said was true, and if it had n't been for the Injuns we 'd have lost our lives, — Scott and me. We found a squaw gathering prickly pears ; we were without food and water. I could n't follow no trail down there, and I wanted to go back long before, only Scott would n't let me. Just before I seed the squaw, I thought I was dying, and I begged her to get me some "awa," but she no sabbied. I took hold of her olla, but there was no water in it, but when she seed I wanted water she fetched us some from a spring. Then she took us to where there was some ponies, and we catched them, and she showed us the way to the village, and the next day the Injuns brought us up here.'

"That was the man's story.

"Well, the upshot of the whole thing was, we returned to Williams, and when I went into the saloon, there stood McKinney behind the bar. He asked me to drink with him, but I refused. 'I don't have to drink with a man like you. You went off and left me, and never even thought it worth while to send an Indian after me. I might have starved, or been killed, or worried to death for fear of what had become of you, for aught you would have cared.'

"'Well,' said McKinney, 'I did n't think!'

"'No!' I replied, 'You did n't, and your not thinking nearly got me hung. I 've lost my time and my grub, and did n't get to see the Havasupais after all. I want nothing more to do with a man like you.'

"That night McKinney took the train and left, and has never been seen here since. The boys went in and joked him so, as soon as they knew the facts, that he thought he had better clear out. That, sir, was my first attempt to reach the Havasupai village.

"My next attempt was more successful. I went the following March with a man named Miller, and it was on that trip that I met Tom, the second chief of the tribe. Tom took me to his 'ha-wa,' and to a mine that I asked him to show me. He was taken sick while I was there, and I gave him some medicine that helped him. He said, 'White man's medicine heap good. Havasupai medicine no good.' He took a liking to me, and said he 'd come and see me the next time he came to Williams. He did so, and I returned to the canyon with him, and many times after that we went in or out together. He made the other Indians friendly to me, as you know they are. On one of my earliest trips he took me to the Grand Canyon, and from that moment my interest in it at that spot has grown, for I immediately saw the great scenic advantages this portion possessed over every other that I had seen.

"My first trip to the Grand Canyon was in the fall of 1883. I was following some wild cattle in the neighborhood of Rain Tanks, and, riding after

them at full speed, came out of the timber all of a sudden upon the very brink of the Canyon. It nearly scared me to death.

"Then, later on that same year, as I was going from Flagstaff to the Moenkopie Wash, to trade with the Moki Indians, I fell in with Major Miner and his party for a few hours, as they were blazing the trail to the Canyon, which was since largely followed in the construction of the Flagstaff stage road."

A visit was made to the Canyon then and later, down the Tanner-French trail, as related in the chapter devoted to that trail.

Mr. Bass's interest in the Havasupai Indians once aroused, it was ever after exercised — as it still is — on their behalf. He began to work with his accustomed energy and directness to interest the Indian department to establish a school and send a teacher and farmer to Havasu Canyon to teach the Havasupais good citizenship and good farming. I was present when, ten years ago, Agent McCowan was sent out as a Special Commissioner by the department, *not* to establish a school in their own canyon, as the Indians desired and Mr. Bass had suggested, but to induce the Havasupai chiefs and heads of families to send their children to the Indian School at Fort Mohave. Elsewhere I have described the way this offer was received and refused. But though the Havasupais rejected this offer, it was Mr. Bass's kind efforts in their behalf that had secured it to them, and he it was who patiently and persistently worked for what was ultimately attained, — a teacher, a schoolhouse, and a farmer of their own.

When he first visited them their universal custom was to burn their dead, destroying at the same time some of the most valuable property and possessions of the deceased. It was Mr. Bass's influence upon Tom and the other Indian leaders that led to their change of this custom. I have been present several times when Tom has lectured or harangued his fellows on the extravagant and useless waste of their cremation customs and urged them to follow the advice of their white friend, Bass, and bury their dead. When the Havasupais agreed to follow the white man's custom, the news was carried to the relative Wallapais by the medicine men, who were opposed to the innovation. They thought it meant a subversion of their power, and a bringing of their dynasty to a speedy end, so they stirred up the chiefs and medicine men of the Wallapais, who paid a visit to their cousins of Havasu to confer with them and endeavor to lead them back to the time-honored customs of their ancestors. Dances and pow-wows were held, and such excitement reigned that even the white men of the mining region near and in Kingman heard of it, and, dreading lest some attack upon the whites was being planned, they sent peace messengers to find out what was the matter. These were returned with the message to the white men to mind their own business. They were considering how to dispose of their dead, and that was an affair that concerned themselves alone. In spite of dances and arguments the progressive party, led by Tom, largely prevailed, and cremation received its first great blow among the Havasupais. Mr. R. C. Bauer, of the

Indian Service, continued the good work thus begun, until now interment is the rule and cremation the exception.

As a token of the great esteem in which he held his white brother, Chief Tom presented Mr. Bass with the finest Indian pony in the possession of the



W. W. Bass and his Indian Pony, Silver.

tribe. Silver, though growing old, is still an honored member of Mr. Bass's equine family, and he may consider himself specially favored who is permitted at any time to ride Tom's gift.

That Mr. Bass has not outworn his Indian friendship, is evidenced from the facts I have observed again and again when he visits Havasupai Canyon. The Indians will come to meet him, and, on his

arrival, a perfect crowd of men, women, and children come around to give him a word of welcome, and hear his welcome to them. His horses are taken to the best pastures, and the fruit picked from the best peach trees, and the finest corn gathered for the occasion. Indians of any tribe are not in the habit of treating other than those they know to be their friends in this demonstrative manner.

His endeavors to make the Canyon accessible at the points his judgment deemed most attractive have cost him many thousands of dollars, years of herculean labors, harassing worries, and dreadful privations, that would have daunted and disheartened almost any other man. He had a wagon road surveyed and built from Williams, and, when he found an easier grade and better conditions from Ashfork, he made thirty-five miles of new road to connect with his Williams road midway to the Canyon, starting from the new point, Ashfork. The Williams road, and the regular stage which he ran over it, were the first set in operation to accommodate tourists.

To provide against the dry season of Arizona, when water for stock and personal use is of the highest importance, he has constructed dams in Havasu Creek, blasted out a number of cisterns in the solid surface rock, and has now stored in his reservoirs or cisterns hundreds of thousands of barrels of water. There is no enterprise of its kind in this semi-barren country so well provided with water as are the stage stations, hotel camps, and trails in the Canyon controlled by Mr. Bass.

The Mystic Spring Trail, though reaching into

the Canyon, where the Havasupais for centuries have been constant visitors, is, practically, of Mr. Bass's engineering and construction. From the lower plateau to the river, he both engineered and constructed it at great expense and labor. The trail as a whole, as elsewhere described, I regard as the finest in the Canyon, and one down which man, woman, or child may ride almost every foot of the way with perfect safety.

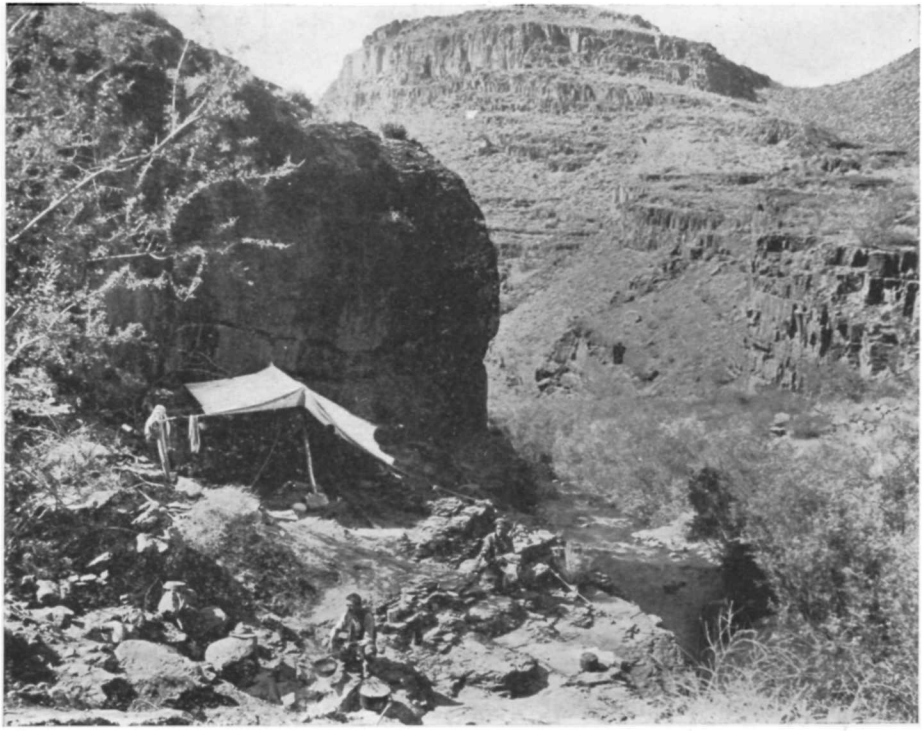
One would have thought these were abundant labors for any man who had "his own living to make," but Mr. Bass has been public spirited enough several times to set in motion national legislation for the benefit of the Grand Canyon or the people of Arizona. Noticing the serious injury to the water supply of the territory — limited at its best — caused by the unrestricted cutting of the timber, he personally circulated a petition (in which work I had the honor to be able somewhat to assist him) calling upon the Secretary of the Interior to declare certain named portions of the territory timber reserves. This effort was successful, and the San Francisco Forest Reserve was duly established. Then, when the miners of the territory complained that the Forest Reserve law precluded the possibility of their continuing their search for the precious minerals in the Grand Canyon, he successfully circulated another petition, which had its due effect in setting in motion the change in, or addition to, the law, which now permits all legitimate mining upon United States Government Forest Reserves.

It should not be forgotten that to Mr. Bass is

owing the correction of an error that for years was perpetrated by the mendacity of the Flagstaff guides. That was that the Point Sublime of Captain Dutton was seen from Navaho, Ute, Comanche, and Paiuti Points, when, in reality, the point thus designated was Cape Final. Even such a careful writer as Charles Dudley Warner was led into the error of stating that "the point where we struck the Grand Canyon, approaching it from the south, is opposite the promontory in the Kaibab Plateau named Point Sublime by Major Powell, just north of the 36th parallel, and 112 degrees, 15 minutes west longitude."

This passage contains two misstatements. Point Sublime is not in sight at any of the outlooks reached from Flagstaff, and it was given that name by Captain Dutton and not by Major Powell.

Point Sublime is to be seen from Hopi Point, and is slightly to the right of Havasupai Point, across the river.



BASS'S WINTER CAMP ON THE SHINUMO.

CHAPTER XVII

THE SHINUMO AND ITS ANCIENT INHABITANTS

LOOKING down from Bass Camp, across the river, slightly to the left of the Tilts, the interested observer will notice a small gash in the rocks, coming down from the Gray and Crimson Ridges to the heart of the Inner Gorge. This gash is the lower portion of the gorge of the Shinumo Creek, one of the most beautiful streams of water that flow into the Colorado River. Altogether unlike the streams that enter from the south side, — as the Little Colorado and the Havasu (Cataract) Creek, — the northern creeks that come from the high forest regions of the Kaibab Plateau, or from canyon springs that have their origin in the deep snows that fall on that elevated region in winter, are clear, pure, and beautiful from source to mouth, while those that flow from south to north are muddy and dirty. Necessarily, during stormy weather, the north creeks, becoming charged with sand and dirt, and decomposing minerals and rocks, change their character, and for the time are almost as dirty as the Little Colorado, but a few hours after the storms have ceased they speedily return to their pristine freshness and beauty.

For many years I have been hearing of the beauty of the Shinumo, the purity of its waters, the charm

of its willow-fringed creek, the interest of its cliff-dwellings and prehistoric irrigating ditches and gardens, and — fascinating but repulsive — the stories of human selfishness, murder, and cannibalism that have desecrated its beauties and native sanctity. Several years ago, an Indian brought out from one of the cliff-dwellings an exquisitely shaped large olla, fashioned exactly after one of the common oriental patterns. It was perfect in every way. Mr. Bass purchased it, and it now holds a prominent place in the ancient pottery department of Mrs. T. S. C. Lowe's museum, in Pasadena, California.

These things necessarily sharpened my desires to fully explore this interesting Shinumo Canyon, and in August and September of 1899 I determined to give a few days to a preliminary survey. My time, unfortunately, was limited, so it is of but a small portion of the Shinumo I can write from personal knowledge.

Leaving Bass Camp, the trail is taken to Bed Rock Camp, and from there a side trail leads to the river crossing. Here was a rude boat, roughly made of rougher lumber, and the seams everywhere open, in cracks one-eighth of an inch in thickness. The only calking materials we had were pieces of cotton clothes-line, and with these the rude punt was made a little less leaky. After a few hours' soaking Dad and I ventured. The roar of the near-by rapids below, and the swift flowing of the current, nerved my arms to their best endeavor as I pulled steadily at the oars. We made the trip across with comparative ease. After unloading the

bedding, provisions, tools, camera, etc., we towed the boat up to a point considerably higher than the landing place on the south side, where our two companions awaited the return of the boat with interest, not unmixed with anxiety. But by this time the



CROSSING THE COLORADO RIVER TO THE SHINUMO.

punt held over a foot of water, and this had to be baled out. At last we were ready. A squall was threatening, and the wind came in fitful gusts and flurries down the Canyon, and as we started, one of these flurries caught us in such a way that we shipped considerable water. Then, to add to the discomfort, — and possible danger, — just as I began to pull, one end of my seat slipped from its support, and sent me sliding sideways to the bottom of the boat. But there was neither time nor opportunity

for readjustment. The rapids were roaring, the river flowing, and we gliding down with a rapidity, at that moment, that seemed almost appalling; so, righting myself as well as I could, cramped up in the uncomfortable position that can better be imagined than described, I rowed, while Dad paddled, and, in a few minutes, once again we stepped ashore in safety.

This time we did n't attempt to bale out the boat. The four of us ran it high and dry on the rocks, and, tipping it over, thus got rid of the surplus water.

Again we took our seats: Dad, with paddle at bow, one man at the stern, and the other on a seat before me, his knees touching mine. Poor fellow, his face was pale and his lips quivered, and he held on like grim death, but, plucky and brave, never said a word or made a move to distress or hinder us. It was with a deep sigh of pleasure, however, that we reached the north shore in safety, and the perils of the roaring "Hackataia" were over.

Two miles over a prehistoric trail, passing one or two ancient ruins, and, crossing over two long stretches of weather-worn boulders where the trail had been blazed, who knows how many centuries ago, by pounding rocks upon rocks, obtaining a glimpse of one of the worst rapids of the Colorado River, and finally dropping down over a bluff of shattered metamorphic rocks to the very brink of the Shinumo, we found the rude camp which was to be our headquarters for the few following days.

And what a delicious night's rest I enjoyed! Lulled by the steady murmur of the stream, — not a loud, sullen, angry roar, as of the Colorado, but a

gentle, soothing babble, — accompanied with enough stirring of the air to temper the heat gendered in the rocks by the ardent wooing of the sun during the day, I could not have failed to rest, although I had no other pillow than a judicious combination of camera-case, shoes, overalls, and focussing cloth, and one comforter and a blanket for a bed. I slept soundly and awoke refreshed, ready to begin a study of the Shinumo, which I hope I shall be able before long to continue.



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ROCKY PILLAR AT THE MOUTH OF THE SHINUMO.

The Shinumo is from twelve to fifteen miles in length. It has two upper forks, one of which heads behind Bass Tomb, and the other to the northeast in a canyon of the Shinumo Amphitheatre, the rich green of which can be seen clearly from any of the points near Bass Camp on the south side. These two forks unite at the corner of Shaler Pyramid. The stream continues south for a distance, curves to the west, and flows between Bass Tomb and Dox Castle, to be shortly joined by White Creek, a small stream that winds around in Muav Canyon from beyond Dutton Point to add its water to the Shinumo slightly to

the northeast of the Gray and Crimson Ridges. It is about two miles from here to Bass's Shinumo Camp, and another mile to the junction with the Colorado River, where, unfortunately, its sweet, pure, clean water is immediately lost in the sandy, dirty *Red.*



ON THE SHINUMO.

All along its banks from river to highest reaches are constant evidences of early human occupancy. A few yards above Shinumo Camp is a heap of ruins similar to those found throughout Arizona and New Mexico, showing clearly that they were once human residences. Near here the remains of an ancient irrigating ditch were found, which since have been utilized to convey water to a prehistoric garden. In the rocks to the right of this

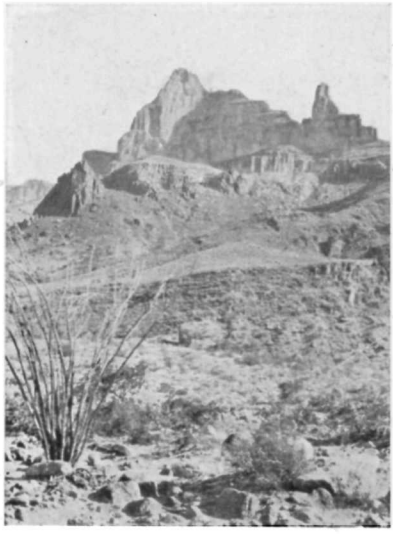
garden, which is about a quarter of a mile below the camp, are two interesting and curious little food caches. These are circular structures, built exactly after the general plan of cliff-dwellings, in suitable niches of the rocks, but of so tiny and diminutive a character as to have puzzled beyond any hope of explanation those earliest wanderers into such hidden regions, — the gold prospectors. All the way up the canyon similar food caches may be found, some of them in places that, to-day, are absolutely inaccessible, others where a little climbing can comfortably reach them. These are similar, in size, build, and general appearance, to those found in Havasu (Cataract) Canyon, and which the Havasupais explain were used by their long-time-back ancestors as corn storehouses. Mescal pits are also found in large numbers, showing that the gathering of the mescal, macerating, and cooking it, were here carried on extensively.

The Indians tell me that on the northeast fork are a large number of cliff-dwellings, also a few in the Canyon of the Bright Angel. The latter Major Powell discovered and briefly described.

CHAPTER XVIII

PEACH SPRINGS TRAIL

THE nearest point on the Santa Fé main line from which the Grand Canyon may be reached is Peach Springs, an insignificant station eighty-seven miles west of Williams, and four hundred and twenty-three east of Los Angeles. But the scenery is so inferior, compared with that of any of the points elsewhere described, that only when it is found impossible to go to these points is a visitor justified in seeing the Grand Canyon at a spot where its majesty and grandeur are so dwarfed. Yet this is an historic trail.



AT THE MOUTH OF DIAMOND CREEK IN THE GRAND CANYON.

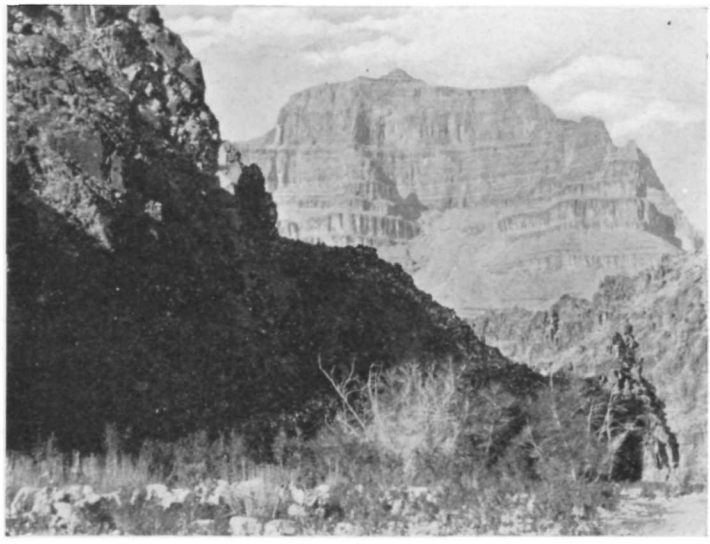
The Peach Springs Canyon has been so worked upon that one can drive all the way to the mouth of Diamond Creek, which unites with Peach Springs

Canyon a very short distance from the river. Lieutenant Ives visited the Grand Canyon at this point in 1858, and the following is his description: —

"This morning (April 3, 1858) we left the valley and followed the course of a creek down a ravine, in the bed of which the water at intervals sank and rose for two or three miles, when it altogether disappeared. The ravine soon attained the proportions of a canyon. The bottom was rocky and irregular, and there were some jump-offs over which it was hard to make the pack animals pass. The vegetation began to disappear, leaving only a few stunted cedars projecting from the sides of the rugged bluffs. The place grew wilder and grander. The sides of the tortuous canyon became loftier, and before long we were hemmed in by walls two thousand feet high. The scenery much resembled that in the Black Canyon, excepting that the rapid descent, the increasing magnitude of the colossal piles that blocked the end of the vista, and the corresponding depth and gloom of the gaping chasms into which we were plunging, imparted an unearthly character to a way that might have resembled the portals of the infernal regions. Harsh screams issuing from aerial recesses in the canyon sides, and apparitions of goblin-like figures perched in the rifts and hollows of the impending cliffs, gave an odd reality to this impression. At short distances other avenues of equally magnificent proportions came in from one side or the other; and no trail being left on the rocky pathway, the idea suggested itself that were the guides to desert us our experience might further resemble that of the dwellers in the unblest abodes, — in the difficulty of getting out.

"Huts of the rudest construction, visible here and there in some sheltered niche or beneath a projecting rock, and the sight of a hideous old squaw staggering under a bundle of fuel, showed that we had penetrated into the domestic retreats of the Wallapais nation. Our party

being, in all probability, the first company of whites that had ever been seen by them, we had anticipated producing a great effect, and were a little chagrined when the old woman, and two or three others of both sexes that were met, went by without taking the slightest notice of us. If pack-trains had been in the habit of passing twenty times



POWELL PYRAMID AT THE FOOT OF PEACH SPRINGS TRAIL.

a day they could not have manifested a more complete indifference.

"Seventeen miles of this strange travel had now been accomplished. The road was becoming more difficult, and we looked ahead distrustfully into the dark and apparently interminable windings, and wondered where we were to find a camping place. At last we struck a wide branch canyon coming in from the south, and saw with joyful surprise a beautiful and brilliantly clear stream of water gushing over a pebbly bed in the centre, and shooting from between the rocks in sparkling jets and miniature cascades. On

either side was an oasis of verdure, — young willows and a thick patch of grass. Camp was speedily formed, and men and mules have had a welcome rest after their fatiguing journey.

"A hundred yards below the camp the canyon takes a turn; but as it was becoming very dark, all further examinations were postponed till to-morrow. In the course of the evening Ireteba came into my tent, and I asked him how far we had still to travel before reaching the great river. To my surprise he informed me that the mouth of the creek is only a few yards below the turn, and that we are now camped just on the verge of the Big Canyon of the Colorado.

"A short walk down the bed of Diamond Creek, on the morning after we had reached it, verified the statement of Ireteba, and disclosed the famous Colorado canyon. The view from the ridge, beyond the creek to which the Wallapais had first conducted us, had shown that the plateaux farther north and east were several thousand feet higher than that through which the Colorado cuts at this point, and the canyons proportionally deeper; but the scene was sufficiently grand to well repay for the labor of the descent. The Canyon was similar in character to others that have been mentioned, but on a larger scale, and thus far unrivalled in grandeur. The course of the river could be traced for only a few hundred yards, above or below, but what had been seen from the tableland showed that we were at the apex of a great southern bend. The walls, on either side, rose directly out of the water. The river was about fifty yards wide. The channel was studded with rocks, and the torrent rushed through like a mill-race."

For some years an irregular stage was run from Peach Springs, and a rude lumber hotel was erected at the mouth of Diamond Creek for the accommodation of visitors to the Canyon. The distance is twenty-four and a half miles.

What might have been a most tragic incident occurred from this trail. In October, 1894, Charles L. Potter, First Lieutenant of Engineers, United States Army, wrote in the hotel register as follows: —

"Being ordered to make an examination of the Colorado River from the mouth of the Virgen River to Yuma, I had to choose between two ways to get to the mouth of the Virgen. To pull up from the Needles, which would take ten days, or ship my boat via Peach Springs to this place and go down. I have chosen the latter as cheaper and quicker, and I hope it may prove so. The members of my party are M. F. Davis, Lieutenant Fourth Cavalry (out for fun), B. S. Weaver, Needles, and John Golden, Needles."

Later H. S. K. writes, referring to Lieutenant Potter's "cheaper and quicker": —

"It proved to be both. Party was shipwrecked seventeen miles below mouth of Diamond Creek and had to walk sixty-five miles to Hackberry. They are satisfied to do their boating on some other river now."

Lieutenant Davis afterwards described some of the adventures the party experienced. They had difficulty in letting the boat down over the first rapids, and then, in accordance with what some one had told them, who knew less of the river than they did, they settled down to enjoy seventy-five miles of smooth water. When nightfall came they had had several narrow escapes and had shot fifteen rapids. The second day was nearly as bad, but the third day proved their Bull Run. They came to a rapid where, for a mile, the river changed to a mass of angry, roaring, hissing foam. Emptying the boat,

Lieutenant Potter and his two men carried everything over a perilous trail to a point below the rapids. This took nearly all day. Then Lieutenant Davis, in accordance with the prearranged plan, turned the boat loose and let it shoot the rapid empty and unguided. Ten minutes after he released it, it shot by Lieutenant Potter like a race-horse.

There was no alternative now but to swim or climb out, so, with provisions, a blanket each and fire-arms, they started, following the trail of a "big horn." He says: —

"Sometimes our path was one hundred feet wide, sometimes for one hundred feet we had scarcely six inches to cling to. In the latter situation our sensations were horrible. Over one thousand feet below us yawned the black chasm; beneath us the rock was treacherous and slippery. It was always level, always the same dizzy height from the white, brawling stream below.

"For twenty-two miles we followed this dangerous trail. Then with feelings of joy we emerged upon the Wallapai Desert. We were three days in crossing this. We had plenty of water and provisions, but the men's shoes had given out and they suffered greatly from the hot sand and the cacti. On the third day we reached the railroad and were taken up."

It was at this point that Robert Brewster Stanton remained ten days, recuperating and getting supplies from the railroad ere proceeding on his perilous but successful trip. He says that Diamond Creek is fifty-three miles from the mouth of the Grand Canyon.

CHAPTER XIX

LEE'S FERRY AND THE JOURNEY THITHER

THE ride from Winslow to Lee's Ferry and the adventures and experiences connected therewith form one of the great memories of my life.



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ON THE WAY TO LEE'S FERRY.

I shall not attempt to give them in detail. A few will give a true picture of an historic section near the Grand Canyon and the Little Colorado River of which few people have any conception.

My driver to this memorable spot was Franklin French, an old pioneer, born in Boston, Massachu-

setts, whose life had been spent in the West, and who would have been a character for Dickens or Bret Harte. He was good company, especially over the desert country we had to drive. The first portion of the journey I went ahead in another wagon.

Crossing Red Lake, dry at this season of the year, we came to a slough, which ordinarily is dry, but now was filled up with the fine dust blown in by the never-quiet wind of this region, all moistened into a soft and yielding mud by a small stream that made a channel for itself as it sluggishly flowed. John, the driver of the first wagon, on the front seat of which I sat with him, was busy at the moment we reached this treacherous slough, expounding some mining problems to me, and, expecting the moist-looking red mud was the coarse sand generally found, and which easily bears up a heavily loaded wagon, he recklessly drove on. In a moment leaders and wheelers were floundering deep in the quagmire; horses wildly leaping and striving to extricate themselves, the mules wisely resting as they fell, waiting until the slush around them settled somewhat. In the mean time John and myself slipped off all our nether garments and jumped into the yielding mud to release the animals from the harness. As soon as they were free, it was not many moments before they stood on the opposite side of the slough. A chain and double-trees were now brought from the rear wagon, fastened to the end of our submerged wagon-pole, the four animals harnessed, and John took the lines! ! ! ! ! !

Reader, do you know what those six exclamation

points mean? Did you ever hear an Arizona pioneer drive mules? — especially when he was mad? *More* especially when his wagon was stuck in such a horrible mess as we had fallen into? *Most* especially when for his nether garments was substituted a coating of red mud an inch thick?

In my varied experiences I have heard skilled artists in profanity, but compared with this man they were but in the kindergarten, and he a classical scholar, familiar with the profanity of the ages in all tongues.

And how those mules did pull! With that sulphurous stream of expletives striking them with full force, accompanied by vigorous thwacks of a wire-loaded black-snake, it was not long before the wagon and its precious freight were safe on the other side. In apologizing for his vigorous profanity, John explained that nothing but swearing would make mules pull when in such a place, and, said he, "While I was ashamed to use such language in your presence, nothing but the Simon-pure article does with these yere chaps."

Being safe and secure, I felt constrained to excuse him, and serene, though muddy, our caravan proceeded, the other wagon making a short detour around the head of the slough, and thus avoiding all trouble.

In a few more miles we reached the banks of the Rio Colorado Chiquito. The only road was one made by the cowboys, and of all the Chinese puzzles of a road it would outwit the celestial inventor of the most bewildering razzle-dazzle to construct another equal to this. We moved in

every direction, made acute angles, oblique angles, and described curves of every order, several times retracing our steps for long distances towards Winslow. In despair I was about to give up the hope of ever reaching the crossing, when John nerved me to a few more moments' waiting, with the assurance that we were "nearly there."

We reached and crossed the dirty red stream at last, and there made our first noon camp.

In order to test the muddy qualities of the stream, and also to enjoy a swim, if one were possible, one of the gentlemen and myself determined to undress and enter the river. One plunge convinced us of the vast amount of matter it held in solution, and the swift current decided for us the question of swimming. We were compelled to strike out, and make for the other bank, walk back on a mud flat, and then recross to where our clothes were. As we emerged we found ourselves fairly coated with a fine red paint, which nothing but plenty of clean water would remove. This we did not have, so scraping with sticks the fine mud off as well as we were able, we dressed, and rejoined the party, who were now about ready to proceed.

For a long way our route lay alongside the Little Colorado River. We passed on the west side of Volz's Crossing — where once I had a party delayed for nearly two days, owing to a ten-feet rise in the river during the night — on to Wolf's Crossing and Trading Post, and in turn passed Black and Grand Falls. Black Falls, in reality, is but a long stretch of slight cascades, the river-bed formed of and filled with rough boulders of lava

and basic rock, so that the muddy red waters are churned into creamy foam for the distance of nearly half a mile, and thus set off in contrast the black of the rocks. The scene is not unlike that of the upper cataracts of the Nile, but on a reduced scale. Grand Falls is more of a genuine waterfall, but unless it is in flood time, there is not enough water to cover the width of the crest of the precipice over which it dashes, and thus make an effective scene. In flood time, however, it is a miniature Niagara.

All along the banks of this stream, variously known as the Flax River, the Salt River (the Havasupais still speak of it as the Salt River, because here their Hopi friends used to obtain salt), the *Colorado Chiquito*, and its English equivalent, the Little Colorado, are the ruins of a large number of homes of people who, long ages ago, here found shelter from worse enemies than the barrenness of a desert, — enemies whose fierce hostility led them to seek protection in caves and cliffs and desert places of this character. What a piteous life it must have been! Nothing grand, picturesque, or beautiful to soothe the horror and awfulness of it; fearful of the attacks of blood-thirsty and persistent foes, both by day and by night; in a region where nothing could grow; the dumping ground of volcanoes, and fired and scorched by pitiless lava flows, — I never picture the life of those wretched, hunted people of the past but a sob of pity rises within me, and tears well up in my eyes.

And to give vividness to the horror, every time I have crossed this desert I have been caught in a dreadful storm. On this occasion it was such a

one as I had never seen before, and I hope I may never see again. From pure cobalt or rich turquoise blue the sky gradually changed to ashen gray, then lowering black, and then fiery red. Clouds were drifting in from the north. When the



IN THE "BOXING" OF THE LITTLE COLORADO.

lightning began it was on three sides, and all at once a wild, fierce glare everywhere. Occasionally these sheets of lightning were followed by vindictive zigzag flashes, which in the north struck from zenith to nadir. By this time the wind was blowing a perfect hurricane, and the thunder rolled fiercely in accompaniment to the wild raging of the wind.

But these were only premonitions! For an hour or more they continued, the Storm King lashing himself into greater and greater fury, until, all at

once, his fierce anger become uncontrollable, and the *crisis* came. The heavens split wide afar, the flood-gates were opened, and down came many waters. Not in drops did the rain descend, nor torrents even, but in rivers, in Niagaras! The hills were water-washed everywhere, and deep canyons were cut even into solid rock. With such a tempest twice a year even, gathering rills into streams, streams into rivers, rolling with fierce rapidity over the rocky slopes, the water charged with sand, possibly stones, and, as the velocity increases, large fragments of rock, there is no wonder that this whole country is barren and cut, sawed, seamed, and scarred, and made as rugged in face and feature as the hero of a hundred desperate hand to hand battles. It seems as if the evil powers of nature concentrated all their fury, deadly hatred, and most awful vindictiveness in this corner, — an area of perhaps one hundred miles in circumference, — for in summer it is blazing with tropic heat, in the fall deluged with frightful floods, in winter cursed with cutting snow blizzards, and in spring the scene of dire battles fought with fierce winds laden with blinding sand. Hence, at all times it is desolate and accursed. And he is wise — unless he be a true explorer and investigator, willing to endure all hardships in his chosen work — who shuns closer acquaintance with its awful desolation, wind-swept wastes, and water-cut surface.

This barren desolation continues as far as Willow Spring, a Navaho Indian trading store. Near-by a number of "hogans" may be seen, where the women are hard at work at their looms, weaving

blankets. Two or three of these weavers have considerable skill and ability, and some of the finest blankets of the tribe are made here.

This is the nearest settlement of any kind to the junction of the Little Colorado River with the Grand Canyon. It was undoubtedly by Willow



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INTERIOR OF NAVAHO HOGAN.

Spring that Cardenas with his handful of soldiers was led by the crafty Hopis, who did not wish the Spaniards to obtain too favorable an impression of the Colorado River region, or gain access to their beds of salt near the junction of the lesser and greater rivers. No other presumption can account for their not being guided by the Hopis down the old Salt Trail — to which reference will be made in a later chapter — to the very edge of the water.

Poor Cardenas! thou and thy thirsty soldiers are not the only ones who have been misguided by

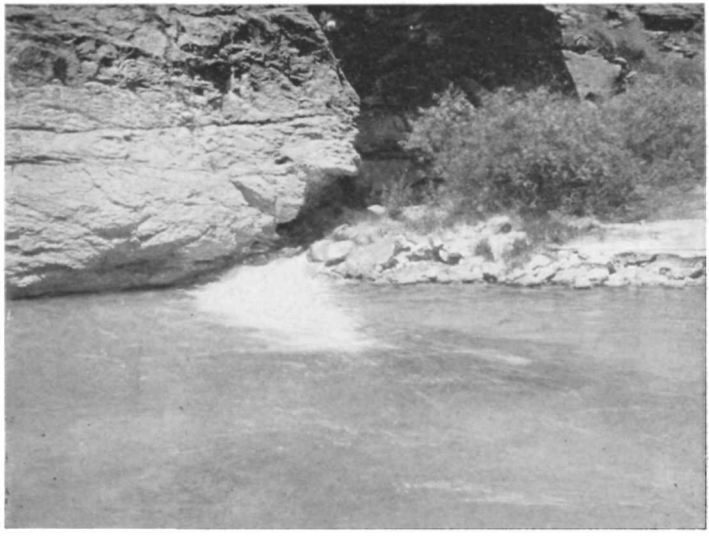
wily and suspicious Indians, or deceived by their constant protestations of good faith.

This corner of country near the mouth of the Little Colorado River is seamed with canyons, ravines, and gulches. It is a genuine "Beled-el-ateuch"— land of thirst — and may well be designated an "interminable country of desolation." There is no water for miles, and except immediately after a rain-storm, when water is caught in a few natural rock pockets, or during the storms of winter, when patches of snow may be found, it is impossible to get even an Indian, used to the sandy deserts in Arizona, to ride across it, much less undertake to guide a stranger over its waterless and pathless miles.

In looking over the country from Echo Reef, one sees a thousand hills of all sizes and materials, — sandstone, sandy clay, blue marl, — and the rock, cut, washed, scarred, and carved by all the uninterrupted forces of nature, that in such places as these seem to enjoy their work of creating desolation.

If one follows the windings of the Little Colorado River, about sixty miles of walled-in, boxed-up canyon are presented, every mile of it grand, stupendous, overpowering. During the dry season, the upper portion of this canyon is almost dry, often entirely so, the light flows of water from the sources in the Arizona White Mountains disappearing in the sand and gravel soon after their appearance. But about twenty miles from the junction of the Little Colorado River with the main Colorado River, nearly parallel with Kohonino Point, there flows out a large body of water at the

base of the canyon wall that makes a stream of considerable size. This water is strongly impregnated with mineral, and is blue in appearance, and when free from the mud and filth of the upper



MINERAL SPRING IN THE CANYON OF THE LITTLE COLORADO.

waters of the Little Colorado, offers an unspeakably beautiful spectacle as it flows on to join the waters of the great river below. There has been much conjecture as to the source of this large stream. I am satisfied, from extended observation on the Kohonino Plateau, between the Little Colorado Canyon and the San Francisco Mountains, that it has its rise in the water-soaked slopes of the latter. Indeed, in several places I have found holes in the rock on this plateau, into which the

wind was sucked with great velocity, so much so that on tearing up slips of paper and placing them within reach of this in-sucking current, they immediately disappeared. I can only account for this suction by the flowing of a strong current of water underneath.

It was a weary drive from Willow Spring to Lee's Ferry. One night the horses got away and started back for water. Poor French had to follow them sixteen miles before he caught them, and the day was nearly gone when at last we made a start, to travel but five miles ere we camped again.

In approaching Lee's Ferry from the south side, there is little or no premonition of the great break in the canyon walls which makes the ferry possible. Ever since we left Willow Spring, we were really in a portion of the great canyon, for Echo Reef, on our right, had gradually been rising higher and higher, while, far away, on what we knew, although we could not see, was the opposite side of the river, was the stratum with its face of precipitous bluffs corresponding with Echo Reef, actually making a vast upper canyon many miles wide. But as we drove along, even when we were nearing the ferry, not a sign could be found in the plateau to denote the presence of Marble Canyon. The first fifteen or twenty miles from Willow Spring is a gentle rise, after which a short ridge is crossed, dotted with struggling pines and junipers, and then begins a gradual descent, which lasts until the ferry itself is reached. The farther we go the more rough and rocky the road becomes.

The homestead, established by John D. Lee, now

belongs to the Mormon Church, and is leased to an elder of the faith named James S. Emet. It is located about a mile and a half from the ferry on the north side of the river. We had to wait a long time on the south side, owing to our inability to



LOOKING ACROSS THE COLORADO RIVER BETWEEN THE UPPER AND LOWER LEE'S FERRY TO THE ENTRANCE OF PARIA CREEK — LEE'S FERRY RANCH HOUSE AND RANCH ALSO SEEN.

make the ferryman hear; for, not only was there the distance to overcome, but the roar of the rapids above and below the ferry was enough to drown the noise of anything except artillery, unless the wind was in the right direction. When at last we did cross, the actual presence of the rapids to our right and left, their fierce, angry, deafening chorus, together with the narrow and precipitous walls of

the mouth of Marble Canyon close by, made us feel the necessity of having ferrymen with sturdy arms, vigorous lungs, and a thorough knowledge of their business. Arrived on the other side, it was but the work of a few minutes for our horses to pull the wagon through the soft sand, to what seemed to our desert-stricken eyes a perfect paradise. There, surrounded by towering walls, glaring back in brilliant reds, crimsons, vermilions, greens, oranges, and yellows, was the scene of the arduous labors of the notorious Lee. Large alfalfa fields, almost equally large vineyards and orchards of apples, pears, peaches, plums, cherries, etc., and a vegetable garden stocked with thriving potatoes, squash, beans, tomatoes, melons, and everything that one could desire, the whole irrigated with water diverted from the Paria Creek, had taken the place of the sandy waste that Lee originally found.

CHAPTER XX

JOHN D. LEE AND THE MOUNTAIN MEADOWS MASSACRE

THE detailed story of Lee's connection with the Mountain Meadows Massacre is much too long for these pages, but its outline will show that his name is associated with the Colorado canyons at several points.

Who is there that has not been thrilled with the horror of the story of the Mountain Meadows Massacre? And what person, who is old enough, does not recall the sense of relief that was felt throughout the civilized world when the authentic news was circulated that John D. Lee was shot? There was a space of nearly twenty years (September, 1857, to March 23, 1877) between the perpetration of the awful and hideous crime and its avenging. Why?

Various answers have been given, but all are more or less conjecture.

In 1857, a hundred and twenty men, women, and children passed through Salt Lake City on their way from Arkansas to California. They met with various difficulties from Mormons and Indians, and, on reaching southern Utah, were directed to camp at a place known as Mountain Meadows. Here they were beset by Indians, and Mormons disguised as such, and for days kept in a state of close siege,

until water gave out and horrible death seemed imminent. Then Lee and other Mormons waited upon them, and offered to lead them away from danger, provided they would undertake to return *and give up their arms* to please the Indians. Incredible though it seems, the despondent men, anxious for the lives and honor of their loved ones, yielded to this preposterous demand, and, under a flag of truce, began to march — as they thought — to a place of safety. Their line was no sooner stretched out so as to prevent mutual help, when they were set upon by the fiends who had pledged themselves to protect them, and every man and woman, and most of the children, were ruthlessly butchered in cold blood.

When the news of this unparalleled atrocity reached the ears of the outside world it was stricken with horror, followed with a fierce rage which called for immediate vengeance. The hierarch of the Mormon Church was openly accused of being the instigator of the crime. He denied either knowledge of or participation in it, except that a report had been made to him by Lee as Indian agent that it was the work of Indians whose fierce attacks he and other members of the church had sought to restrain.

Little by little the truth began to leak out that, authorized or unauthorized by the head of their church, Mormons were certainly participants in the crime. Lee was charged with being one of the leaders, and an effort was made to apprehend him. He escaped, and was gone for three years, none knowing his whereabouts. Then he returned, and established the ferry that bears his name. Here J.

Hanson Beadle, a noted newspaper correspondent, found him. Soon the knowledge of his return renewed the fierce demand for his punishment. Again an effort was made to arrest him, and again he escaped. After a short lapse of time he returned to one of his many homes, — he had eighteen wives and a correspondingly large number of homes, — was captured, had two trials, was sentenced to death, taken out to the scene of the massacre, and there shot.

The attitude of the church is that Lee, for purposes of personal plunder, committed the crime, and that he and his associates alone are responsible.

Lee claims that he acted under orders, and that when he escaped, both the first and second times, it was because of advices that had reached him secretly from Brigham Young. On the occasion of his first escape, he, with three companions who were likewise accused, fled to a region below Kanab, into one of the many side gorges of the Grand Canyon. A Paiuti boy accompanied them. According to the story Lee afterwards told to one of the chiefs of the Havasupai Indians, they were so driven for food that, one after another, the boy and two of the men were slain and eaten. On the Shinumo the bones of an Indian boy have been found, hacked with a knife, as if for the purpose of removing the flesh. After great struggles and perilous escapes, the two remaining wretches crossed the Colorado River, a little west of the Mystic Spring Trail. One fled to the Wallapai country, and the other, Lee, while subsisting upon seeds and desert plants, was found by the Havasupais, and by them secretly taken

into the depths of their canyon home. Here for nearly three years he remained, teaching them improved methods of irrigation, fruit culture, vegetable raising, etc.



JOHN D. LEE AND HIS TWO FAVORITE WIVES.

[From a portrait in the possession of his son at Tuba City.]

Then he decided to return and face his accusers, — so he declares, — but, when beset with danger, he again fled, only to be captured at last, ignominiously secreted in a chicken-house.

His claim of betrayal at his trial is best told in his own words in this literal copy of the letter written by him at the time to Emma, his last wife, from whom I obtained it.

UNITED STATES MARSHAL'S OFFICE

WM. NELSON, *U. S. Marshal.* DISTRICT OF UTAH.

BEAVER CITY, UTAH, Sept. 21st, 1876.

MRS. EMMA B. LEE.
LONELY DELL, LEES FERRY, A. T.

MUCH BELOVED COMPANION, — Knowing the suspense you are in to hear from me and learn of my present situation, and prospects in future, I hasten to write, as I cannot communicate to you in person. I reached here on the 4th instant, but was not wanted till the 11th, at which time my

bondsmen appeared and surrendered me to the court, which placed me in an awkward situation. I was left in charge of the officers of the court, and sent to prison, there to await the summons of the court from time to time. This strange and mysterious move warned me that there was treachery and conspiracy on foot. General Wells, or the "one-eyed pirate," as the Tribune calls him, was in Beaver, to advise and council and direct the Brethren how to swear, and those that composed the jury to be a unit in rendering a verdict of murder in the first degree. My worthy friend and able attorney, W. W. Bishop, felt that we were sold; he and Judge Foster of Pioche, who assisted him, had the promise that all was right from the leading men of the church here in Beaver, and even went so far as to mark the names of each man to be retained on the jury, telling him that if he would make up his jury with the names marked that they would be sure to clear me. Though fearful, he trusted them, which resulted in the jury's finding a verdict against me of murder in the first degree. Six witnesses testified against me, four of whom purgered themselves by swearing falsehoods of the blackest character. Old Jacob Hamblin, the fiend of Hell, testified under oath that I told him that two young women were found in a thicket, where they had secreted themselves, by an Indian chief, who brought the girls to me and wanted to know what was to be done with them. That I replied that they was to old to live and would give evidence and must be killed; the Indian said that they were too pretty to kill, that one of them fell on her knees and said, Spare my life and I will serve you all my days, that I then cut her throat, and the Indian killed the other. Such a thing I never heard of before, let alone committing the awful deed. The old hypocrite thought that now was his chance to reek his vengeance on me, by swearing away my life. Nephi Johnson was the last man that I could have believed that would have sealed his damnation by bearing false testimony against me, his neighbor, to take away my life. The other

two witnesses, Knights and McMurdy, swore that I committed the awful deeds, that they did with their own wicked hands. I own that I am perfectly whiped out, and have come to the conclusion that some men will swear that black is white, if the good Brethren only said so. But my expressing my feelings in this way will not change the verdict against me. This verdict has caused quite an excitement in Salt Lake City as well as here, among the honorable and thinking class of men. They all say that it is too thin and played out. When the verdict was rendered, my attorney asked for a stay of proceedings for ten days, to prepare a plea of abatement for a rehearing, and an appeal to the higher courts, etc. which will sit in December next. My attorney promises to stand by me to the end, but must have a couple of hundred dollars within two months, to enable them to carry my case up to the higher courts. Dearest, do all you can to send me as much money as you can. I know you will do so. I have confidence in your ability to raise money. I have many warm-hearted, noble-minded friends, whom I believe will never see me sacrificed at the shrine of imposition, bigotry, falsehood, and ignorance; my firm conviction is that all will come out right in the end, though it requires a little time to bring it about. Willard, Harie, and Darrow were here yesterday, and went away without letting me know that they were going to leave, a very foolish thing for them to do, as I wished to send my wagon-team and little Isaac back home. This evening Hellen came to the prison and told me that they had started for the Ferry to inform you and Rachel, and to bring Rachel. This, as I said before, was a strange move, but I suppose they thought from the verdict that all that wish to see me must come soon. This, of course, confuses my intended arrangements. I will have to wait until I hear from them before making a move in that direction; in all probability I will be sent to Salt Lake Prison, as the supreme court sits in Salt Lake City. Dearest Emma, keep up good cheer. Say to friend Johnson that he must

let you have all the money that comes from the Ferry, to help me in the hour of trouble. Tell Billy to remember Pa, and send him some money. My love to you and all the dear little children, to Warren and family also. Write immediately and often, for a word from you in your own handwriting carries joy and comfort to my soul. I have many things to say to you when we meet again. Joseph Wood is here in prison with me. He expects to get his trial soon. Miley is also here under indictment. Sarah Jane is at Jo Woods' ranch, taking care of things there, as Hellen was also indicted, and is here on bail, awaiting trial. I had to leave little Isaac with Sarah Jane for company and help her with the cows, as she was alone. Joseph Wood, Hellen. and Sarah Jane all wish to be remembered to you. I will write soon and let you know how matters move along. So good-bye for the present. I trust that we will see many good days together yet.

To Emma B. Lee.

J. D. Lee.

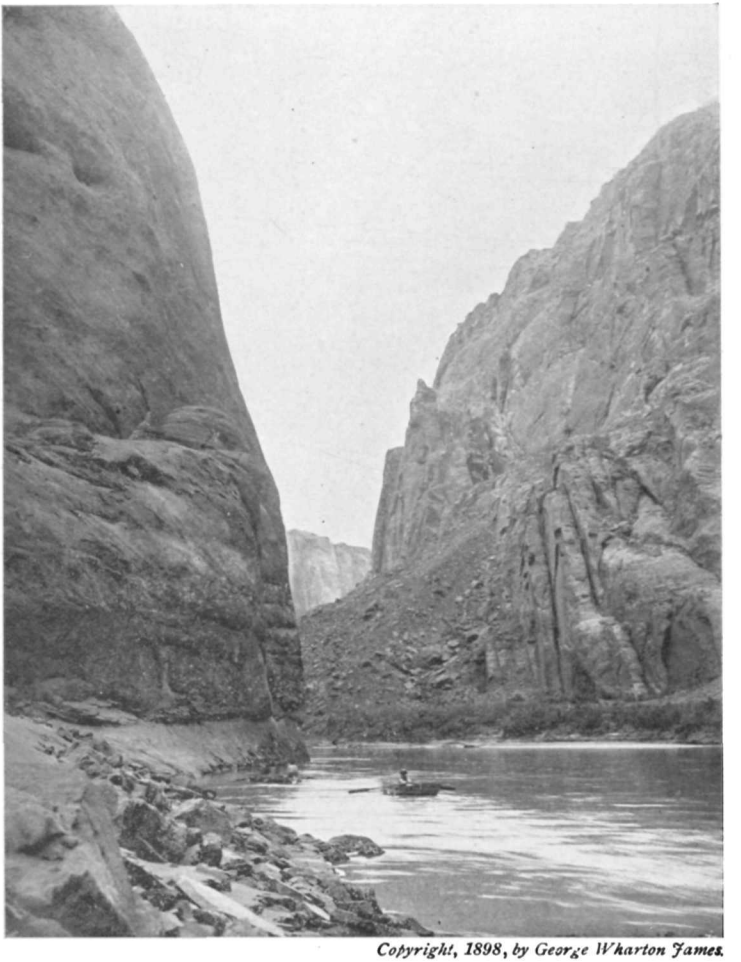
CHAPTER XXI

UP AND DOWN GLEN AND MARBLE CANYONS

WHERE the Paria River flows in from the north to join the Colorado River, the precipitous rocky walls of the canyons break and permit the skilful driver to get his wagon to the water, cross it in a ferry-boat, and climb out over an equally perilous road on the other side. This is Lee's Ferry, and the old Lee Homestead is located on the open and arable lands at the mouth of the Paria River. Here ends Glen Canyon, and just below the ferry Marble Canyon begins.

I was fortunate enough to reach Lee's Ferry at the time Mr. N. Galloway — who, as before related, had emulated Major Powell, in making the complete trip through the canyons of the Colorado, — was about to go up Glen Canyon to visit his placer claims. Under strong persuasion he consented to give me a brief experience up that canyon, and down Marble Canyon as far as the much dreaded Soap Creek Rapids.

A simpler, less pretentious boat than Mr. Galloway's could not be conceived, yet experience has demonstrated that it is the safest yet constructed for running the rapids of the Colorado River and going over its dangerous places. Mr. Galloway is his own architect and builder. A few three-quarter inch planks; a little heavier timber for braces;



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A Bend in Glen Canyon of the Colorado River.

oars with holes in them, through which iron rods, fastened to the sides of the boat, serve always to keep the oars in the same place and are more secure than ordinary rowlocks; with canvas outriggers and cover to keep her from being filled with water and swamped when running the rapids; a bow at both ends, and a flat bottom with the merest pretence of a keel, and the boat is ready. For our trip the outriggers were taken off, as we had no dangerous rapids to encounter.

It was raining when we started up Glen Canyon, and the profound gloom of those vast unillumined walls produced a sensation of depression. The river here has but little fall, and for half an hour we were in water with a slight current. To our right we saw the archway of an immense cave, — a perfect Roman arch, covering a mouth of gigantic proportions. Some years ago a band of Navahos crossed into Utah, killed a Mr. Whitemore who owned a large band of sheep, and, it being winter and the river frozen over at Lee's Ferry, the Indians sprinkled sand upon the ice and drove the sheep into this cave for secure hiding. Since that time it has been the rendezvous of a noted band of horse thieves. And surely no better place was ever chosen for the purpose. The secret place described in Gil Blas was an open highway to this out-of-the-way and inaccessible spot. Reached only by boat up or down the river, and by a precipitous and dangerous trail, a well-provisioned, armed, and desperate band could bid defiance to the whole army of the United States and for a decade laugh at the idea of capture.

As we rowed on, our prison became narrower and the walls higher. Up they soared, until it seemed as if the very clouds floating over them would "scrape" as they passed. Now and again the river made an abrupt turn, and as we rode along we seemed to be coming to the end of a "blind alley" with no possible outlet except to return.

At last the sun came out, and what a glorious revelation of beauty was given to us then! Streaming down through celestial windows, brilliant rays of gold and silver and saffron and gray and yellow and pink and carmine were shed upon the red and gray sandstone walls and the sombre face of the placidly flowing water, and in a moment all was changed, beautified, glorified. More dazzling in effect than the sudden revelation of a brilliant pantomime to an audience in a darkened room, it was dignified by its vastness, majesty, and self-conscious strength.

And who can describe those marvellous walls, with their natural arches, towers, pediments, spires, fantastic gargoyles, buttresses, windows, and infinite variety of form? Generally precipitous, from five hundred to two thousand feet in sheer height, sometimes a solid mural face of sandstone, without a crevice or break, one's neck was strained in the effort to fathom its height. Then when a particularly smooth piece of water was reached, the eye caught glimpses of worlds floating under the water, — shadows of the glorious celestial streets above, made more ethereal and attractive by the slight tremor of the gently rippling water.

Picture after picture was thus presented to us until we reached the placer grounds, where for a while I watched the miners "panning gold." Several pans of gravel were washed, and as the gold settled to the bottom we estimated the value of the "dirt," and found that each yard should bring in from three to ten dollars, and as there were so many yards of gravel, the miners certainly had a "good thing" in this particular bar. And thus the chickens were counted while the eggs were in the basket. Who knows how many will hatch out? Yet miners are not the only people who count their chickens before they are hatched.



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PANNING GOLD IN GLEN CANYON.

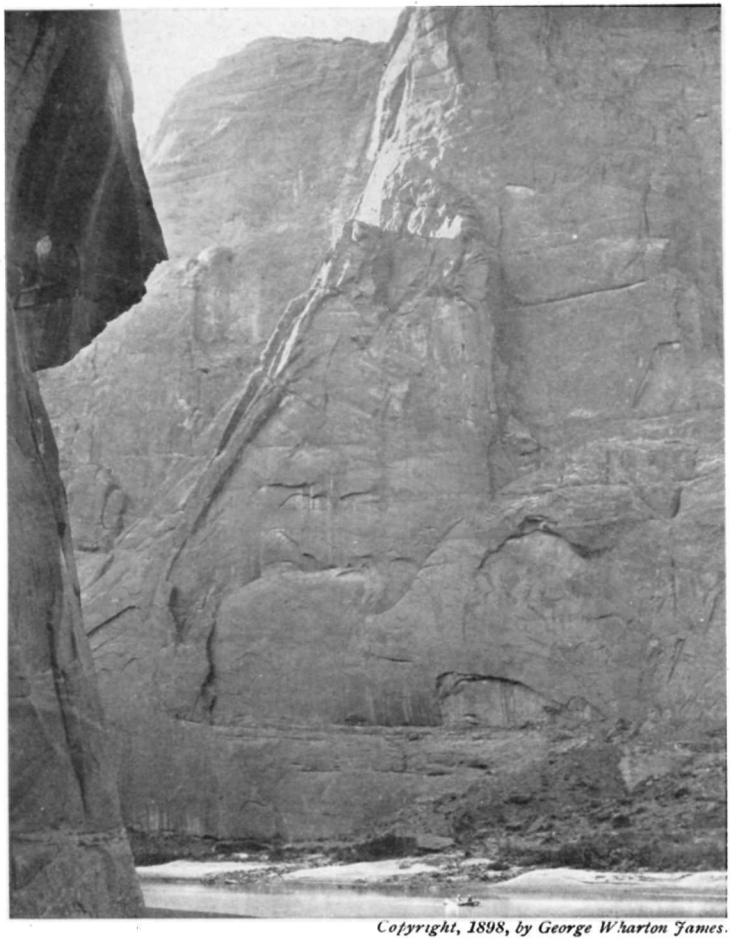
Our return was glorified by the brilliant rays of the sun, which in this deep-walled chasm seemed to take on an exquisite and peculiar charm. The water was warm, and doffing my clothes, I plunged in, and for miles enjoyed the luxury of a warm swim, following the boat as it gently glided with the smoothly flowing current.

The trip down Marble Canyon was more exciting,

exhilarating, and adventuresome, for although we were to stop at Soap Creek Rapids and not risk "running it," we had five other rapids which Mr. Galloway said we might safely run. Lee's Ferry has two ferries — the upper and the lower — about a mile and a half apart, and this distance is almost entirely a long stretch of rapids. A rapid is a greater or lesser fall in the river, where the water increases its speed in accordance with the amount of the fall and the length of the slope. Some rapids are half a mile long, and are yet of such easy descent that they can be "run" in safety. Others are much shorter, but having a large fall are much swifter and dangerous. The chief element of danger in most of the rapids is the large number of boulders in the bed of the river, over which the waters dash and pour in a wild and bewildering manner. More dangerous than the fixed boulders, against the perils of which the boatman may guard, are the rolling boulders, which, as they dash along over the sloping bed of the river, throw up — no one can tell when or where — great rolling waves — fountains — which dash the tiny boat against the rocky walls and crush it as if it were an eggshell, toss it high upon some outstanding rock, or whirl it unresistingly into the depth of the stream. To guide a boat through these dangerous boulders and back-



THE AUTHOR SWIMMING IN THE COLORADO RIVER.



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THE MARBLE CANYON OF THE COLORADO RIVER.

rolling waves, going at the swift speed it is sure to attain when swept along by so rapid a current, requires a quick eye, discerning brain, strong muscles, and prompt action. Our experiences were thrilling and exciting enough to satisfactorily demonstrate the necessity of the possession by our boatmen of these qualities.

Taking my cameras, food, bedding, and a box of fine grapes and other fruits from the Lee's Ferry orchard, we pushed off. There were two of us in the boat, — Mr. Galloway and myself. Our first experience was a rapid. As soon as Mr. Galloway's vigorous strokes brought the boat into the current, off we went. I sat looking ahead, he guiding the boat by occasionally peering over his shoulder. Up and down we danced, now dodging to the right, now to the left, then racing along with a speed that made the walls and boulders and other stationary objects fly behind us. How we leaped and danced and flew along! Our boat was a sentient being, full of life and vigor, and evidently enjoyed this wild race with the raging, roaring waters. All too soon this first experience came to an end, and Galloway was quietly rowing to the second rapids, past the lower ferry, into the very mouth of the frightful Marble Canyon, where poor Frank Brown, strong, vigorous, full of joyous manhood, lost his life, and where, a few days later, two others of his band were drowned. At the ferry our second oarsman, Mr. Fluke, was taken aboard, and in three minutes we were in the midst of our second rapid. At the third rapid Galloway gave way, and let Fluke take the oars, at the latter's request. He asseverated that

his strength was great enough to overcome the power of the waves on either side, and that we need not be afraid to trust to his care. No sooner were we in the rapids than a side current swept us over to the left as if we had been a feather, and it required



NOON LUNCH IN GLEN CANYON.

all the strength of Fluke's vigorous arms to keep the boat "head on." In the face of his boasting I presumed to tell him that we nearly made a "fluke" of passing that rapid.

We prospected every gravel bar in the canyon, and found slight traces of gold after each panning. My camera was called into requisition time and time again, as new pictures of the grand, majestic, and beautiful were presented at every turn. At noon, on a sandbar, with driftwood for our fire, we

had beefsteak, tea, and fruit, and while the former were being cooked, I jumped into the river, which was fairly still at this point, and revelled in its buoyant and warm waters. After dinner we started on. Occasionally we were in the hurrying of the rapids, and again and again we could hear scarce a sound, save the gentle lapping of the waters against the boat or the canyon walls, the cooing of a lost dove, or the piping, semitone scold of the canyon wren, many of which we saw on this trip. Here and there we saw signs of beaver, which Mr. Galloway longed to stay and trap. And thus we quietly journeyed along until a louder roar and din than we had yet heard told us of our speedy approach to Soap Creek Rapids. And what a wild, restless, tossing, swirling, fuming, confused scene it was! This was no childish "Lodore." The water here was indeed "dizzying and deafening the ear with its sound;" the boulders were large, the fall rapid for half a mile, and the current strong; consequently, as the waters swept over the edge, they were changed at once from placid, smoothly gliding things of peace, to angry, roughly tossing weapons of war. Here, like white-crested snakes in fierce wrath, they arose above the rocks, and then darted down upon them with a fierce fury, as if they would split them into fragments. There, for a few rods, a part of the current ran in a mighty volume down the steep slope at unrestrained speed, only to drop into a great hole, where it was dashed into spray against a tremendous boulder. Now, conceive a little shell of a boat battling its way through such a tangle of rocks, spray, waves, currents, cross-currents, whirl-

pools, and madly racing waters, and you will know why it is so perilous, and why a man feels that he takes his life in his hands, and risks its being snatched away in a moment, when he enters one of them.

Fortunately we had neither to run the rapids nor make a portage around. We simply watched it, studied it, photographed it, sat down before it, and pictured the brave band of explorers who had dared its dangers, and then, peacefully and happily, started on our return journey to Lee's Ferry.



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SOAP CREEK RAPIDS, BELOW WHICH FRANK M. BROWN LOST HIS LIFE.

CHAPTER XXII

THE OLD HOPI SALT TRAIL

ABOUT eight miles from the mouth of the Little Colorado is located this old and historic trail, long used by Hopituh, Paiutis, and Navahos. It leads to a salt ledge, extending from the lower end of the Little Colorado, some eight or nine miles, towards the Tanner-French Trail of the Grand Canyon. Owing to the cheapness of salt, and the superior quality of the article purchased of the Indian traders, the aborigines have ceased fetching salt from this ledge; hence the trail is rapidly becoming impassable, and unless something is speedily done to it, not even the agile Hopi and their fearless ponies will be able to use it.

When Cardenas and his band desired to see the great river to the north — the Colorado — of which they had heard so much, it would have been an easy matter for the Hopi to have guided them to this trail and to the point where the waters of the Little Colorado join those of the *Colorado Grande.* But fearful that the strangers would use the knowledge thus gained against them, or that they might find in that region or river something that would lead them to desire to make frequent excursions into the country and thus become too common visitors, or perhaps that the sight of their precious salt ledge

would arouse their covetousness, — these things were sufficient to determine them to *mis*guide the Spaniards. Consequently they were taken to the barren and inhospitable region already described in the chapter on Lee's Ferry.



SALT SPRING IN THE LITTLE COLORADO CANYON.

When Lieutenant Ives desired to investigate the same region from Oraibi, he met with exactly the same difficulties that had confronted Cardenas. He says: "The country to the north and northwest is rolling for some miles, and then there are elevated plateaux rising in successive steps. The most remote appears to be sixty miles off, and higher than any tableland that has been passed. Distant peaks can be seen a little east of north. The Indians have said that the trail runs northwest, and that it is the only practicable route by which upper portions of the river can be attained. Such a course would bring us, at the end of ninety miles, opposite to the point where we struck the Cascade River (Havasu Canyon), and only about fifty miles distant from it, though we would have travelled, in heading the canyon and

side canyons of Flax River (the Little Colorado), nearly three hundred miles."

Now, had the Hopi cared to have guided him to their Salt Trail, Ives could have reached the waters of the Colorado River in two days. But although he was the accredited representative of our government, no aid could he gain from the suspicious Hopi of Oraibi.

He graphically describes the treatment he received at their hands; how that, although he had made a bargain for a guide, he failed to appear (undoubtedly forbidden to do so by the Oraibi chief), and then, how amiable and considerate the chief was when, after making the attempt to reach the river alone, and the party was compelled to turn back, he said, "I told you so," but gladly offered them a guide to Fort Defiance, a hundred and fifty miles to the east.

CHAPTER XXIII

THE TANNER-FRENCH TRAIL

VISITORS to the Grand Canyon by way of Flagstaff, to any of the three accessible trails reached from that point, will remember riding out to Comanche (Bissell) and Ute (Moran) Points, and from one or the other looking farther east to Navaho Point and wondering whether the view there was much different from the one he had just been enjoying. He will also remember looking down into the depths of the Canyon towards where, he was told, the Little Colorado formed its junction with the *Colorado Grande*, and remarking how *open* the Canyon appeared to be.

It is in this open space that the trail known variously as the Tanner and the French Trail is located. Major Powell travelled over it, — for it is an old Indian trail, used for centuries by Havasupais and Hopi to reach the salt deposit before referred to, — and did considerable labor on it, crossing to the other side and building a trail to the plateau above.

Some time before Powell's visit, Seth B. Tanner, a Mormon pioneer, now living at Tuba City, expended considerable labor, energy, and money upon it for mining and stock purposes. Shortly after this, Franklin French, who was my driver to Lee's

Ferry, desirous of doing some mining work in the Canyon, and dissatisfied with the upper portion of the trail, built a new section, which made a Y of the trail when it was completed. In those days the condition of the trail can be imagined from the following incident, related to me by French, and by him vouched for as "Gospel truth."



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THE WORK OF EROSION ON THE RIM.

"One day the boys had a lot of planks to be carried to the river. It was my business to load them on the mules, and get them down there. It was a soul-destroying job. There was hades to pay. We called it a trail, but it was only a roughly marked out suggestion of where a trail ought to be. But that made no difference; I had to get the lumber down to the river. A happy thought struck me. Drunken men will often do things they dare not attempt when sober. I thought I would try it on the mules, so when they drank I dosed the water heavily with whiskey; and down we went a-skiting. The mules were as reckless as Jack Tars on a frolic. We got there all

the same, but a sorrier looking set of remorseful, repentant mules than we had the next morning the eye of man never saw."

The trail is difficult of access, and as none of the guides care to make the trip unless an explorer outfits for himself and *goes*, he stands a poor chance of reaching the river, nowadays, down this old and forsaken trail.

In March of 1886 Mr. Bass, with two companions, started out to hunt for the lost John D. Lee gold mine. They aimed for this trail, and, arriving on the rim in the evening, camped at the top, turning their horses loose, as usual, to graze. Early the next morning, going down the east fork of the upper part of the trail, they came upon a camp, evidently vacated but a short time before by its owners, for there were five rolls of bedding, left just as the sleepers had tumbled out of them, five Winchester rifles, five six-shooters, five saddles, etc. Knowing the owners could not be far away, Bass and his companions passed on, and, on reaching Rock Tanks, in the gorge below, were not surprised to find five men busily engaged in watering eighteen horses, which, it required no expert to discern, had just undergone the suspicious operation of "changing the brands." This operation, fully understood in the West, may need a little explanation. In the vast ranges of this great unfenced country the only protection a man has for his wild running stock is his brand. All the brands of the district are registered, and each man's mark becomes as well known as his name. When animals are stolen and the thieves desire to sell them again, it is a dangerous experi-

ment to try to sell stock of another man's brand, unless the seller can show a bill of sale. Forgery is dangerous and, generally, easily detected. But by skilful manipulation and with a little time brands can be so altered — "hocus-pocussed" — as to become unrecognizable. Then sales, *at comparatively low prices*, are easy.

These thieves had brought the stolen stock to this secluded spot in order that the brands might be changed. But while this was as apparent to the three gold seekers as the innocent little disguises of a newly-married couple are apparent to an experienced hotel clerk, self-protection bade them close their eyes and see and know nothing. Accordingly whiskey flasks were passed around, and one of the five thieves then became quite communicative in answer to the questions put by Bass and his companions as to water holes and camping places on the other side of the river. He was a Frenchman, and claimed that he had been with Major Powell in his explorations of the Canyon at this point.

The prospectors reached the river, and there found some stranded bridge timber, of which a raft was constructed, and the river crossed. There the water and camping places showed that the information given was correct. But fearing for the safety of their horses at the head of the trail, they decided to return for them. It was but two days from the time they had met the horse thieves, yet on reaching their camp again they found they were gone, "stock, bag and baggage," evidently directly after the first meeting was over. On returning to civili-

zation they read in the papers that shortly prior to their meeting with these five men, eighteen valuable horses had been stolen from Albuquerque, and that the thieves had been traced as far west as the Little Colorado River, and there lost sight of.

In 1890 this trail was again the scene of gold hunting. A Mormon named Brown drove from Utah, his head full of a variety of stories told by his fellow Mormons who were miners, and even by responsible men in the church, in relation to the John D. Lee mine. One story he had heard was that Lee had buried seven cans of almost pure native gold near the mouth of the Little Colorado River. Brown was instructed to find Mr. Bass, which he did, and together they began afresh the search for the mine and the buried gold. Leaving Williams, they crossed the desert, passed Rain Tanks and Hance's, and hurried on to the west fork of the Tanner-French Trail. Here, some little distance down, a tree had fallen across the trail, and they were compelled to return. They had with them five burros, all heavily laden, besides their saddle horses. In going down, Brown failed to re-cinch his saddle, and on dismounting to return, it either pitched or twisted so as to scare the horse and set him off "bucking." And buck he did to such good effect that he knocked over the five burros and came near making an end of the whole expedition. One burro's pack contained a rifle, and as he rolled down the steep slopes of the talus the weapon went off, and, as if to emulate his fellow, another burro, after rolling over and over, and finally landing pack down with all of his four legs in the air, helplessly

waving for assistance, seemed to remember that there was a loaded revolver in his pack, and, without further provocation, fired it off.

The return from this expedition came near being fatal to Mr. Bass, for on crossing the Painted Desert he was overcome with the heat. At Big Horse Tanks he was compelled to dismount from his horse and lie down, and had it not happened that a cowboy passed who gave him water and attention, it is not improbable that the Mystic Spring Trail would now be without its enthusiastic owner. As it was, he went to Southern California to recuperate, and turned over his outfit to Brown and another man, that they might continue the search. At Christmas he received a notice from these two worthies that "if they found the mine he would have no share in it," thus repaying his guidance and the use of his horses and other outfit. But they failed in their search, as others had done before, and the John D. Lee mine still awaits a new discoverer.

CHAPTER XXIV

THE RED CANYON AND OLD TRAILS

THERE are no distinctive features connected with the Red Canyon Trail, except that it is fairly engineered, and so well constructed that one can ride almost the entire way from Hotel Camp to the river. It begins about three miles east of the Old Trail, and after a rapid zigzag brings one to a "hogback," which connects the south wall with the shoulder of Ayer Peak.

Looking towards the rim from this hogback it will be observed that the cliffs are very irregular. They thrust themselves forward, then recede, then again come forward, and thus make a series of capes and bays, which reaches for an extended distance in each direction. This irregularity of the mural face accounts for a peculiarly charming echo, which may be observed by the curious. Turning one's face to the rim and giving a loud "hallo," the voice seems to enter the bays of the serrated cliffs and roll around each promontory in turn. The result is singular. First, the voice is given back as from an immense distance, but rapidly approaching. Then it swells out and re-echoes with great volume, as if shot forth from the farthest recesses of the bay, to receive a final great impetus as it reaches the very point of the nearest promontory. Then it sinks

again, to once more emerge in power, and thus it swells and dies down, again and again, until the last promontory of the wall is reached, when, like the final crack of a whip, it gives one last "hallo" with a vim and energy that is simply startling, and the echo



NONCONFORMABLE STRATA ON RED CANYON TRAIL.

disappears. The time taken for the echoes is from nine to twelve seconds.

Desirous of testing the figures given as to the height of Hotel Camp and the river, Hon. T. P. Lukens of Pasadena, and Mr. W. H. Jackson, the celebrated artist-photographer, made a series of careful measurements with aneroids, which had been tested on a variety of occasions with the bulletined measurements of the United States Geologi-

cal Survey. These measurements showed that the general idea of the Canyon depth at this spot was much exaggerated. The elevation at Hotel Camp was found to be seven thousand feet, and at the river twenty-seven hundred feet, thus giving a direct descent of forty-three hundred feet, as the difference between the elevations at the upper and lower levels.

From the standpoint of the geologist, whether expert or student, the Old Trail is much more interesting than the Red Canyon Trail, though both have distinctive features that make a study of each profitable. In the Red Canyon the non-conformity of the lower sandstones is beautifully revealed, while in the Old Trail Canyon one may study the archæan rocks. The Old Trail was the one down which I first descended many years ago, in the company of several friends. We were all new at the work, and went without a guide. The first three miles is a steep zigzag, then a narrow gorge leads to a slightly open space and Cottonwood Gorge. Just below the gorge we passed the singular faulted mass of subcarboniferous rocks which Thomas Moran called the Temple of Seti; then through narrow canyon walls of granite, up and down rope ladders, splashed by waterfalls and accompanied by the gentle babbling of a tiny stream, we plodded along. At length we came to a fifty-foot precipice, over which dashed the water, and my companions, deterred for a while, discussed whether they should proceed or return. Impatient of delay, I descended, and dashed ahead in delightful solitude. Soon I heard a new and strange sound.

The following, which I quote from my note-book, was written at the time: —

"The babble of the little stream rippling over the rocks has filled our ears all the way down, but now its noise is like the cry of an infant compared



THE COLORADO RIVER AT THE FOOT OF THE OLD TRAIL.

with the deep bass voice of a giant roaring as in a passion of pain, and in awe-stricken wonderment I listen. Hark! the river at last! A few more moments and, solitary and alone, I catch my first glimpse of it, — a raging, roaring, boiling, surging torrent. The granitic cliffs tower on either side in rough, jagged, cruel outline, their fantastically carved spires reaching upwards into the fleecy clouds which float in the azure sky. To the right

the river flows smoothly and placidly, as if an inland lake with unruffled surface were being rapidly borne on the backs of giants who walk so gently that no upheaval or disturbance is observable.

"Immediately at the foot of the side canyon the scene changes. It is as if a deep trench had been cut directly across the bed of the great river, into which it tumbles, and whirls and rages and roars with wild fury. Now look to the lower side of this trench! What a change from the placidity above! A mass of turbulent, seething, hissing rapids fills up the gorge. The giants are here, but no longer moving easily and noiselessly along. In the massive boulders that help fill up the channel the imagination easily sees titanic faces and hands and arms. Yonder is a frightful monster, seizing a tremendous wave as it comes out of the trench. With incredible fury and fierce rapidity he hurls it upon his foe on the other side of the river. Immediately a score of waves are thus picked up and hurled, some in one direction, some in another. Now and again these waves meet in the air, destroy each other, and fall back, impotent for evil, into the wild mass. Yonder is a defeated giant buried beneath a cataract of waters. Down he goes, his appealing face clearly visible and his hands and arms stretching out for help. It is fascinating, thrilling, horrible, for though one knows it is all imagination, it seems so real that one feels he is looking upon the battling place of the giants, fighting in deadly combat for the control of this great waterway."

CHAPTER XXV

GRAND CANYON FOREST RESERVE

ON the twentieth of February President Harrison issued a proclamation creating the "Great Canyon Forest Reserve" in the northern part of Coconino County, the land embraced in it being reserved from settlement on entry. The boundaries are as follows: —

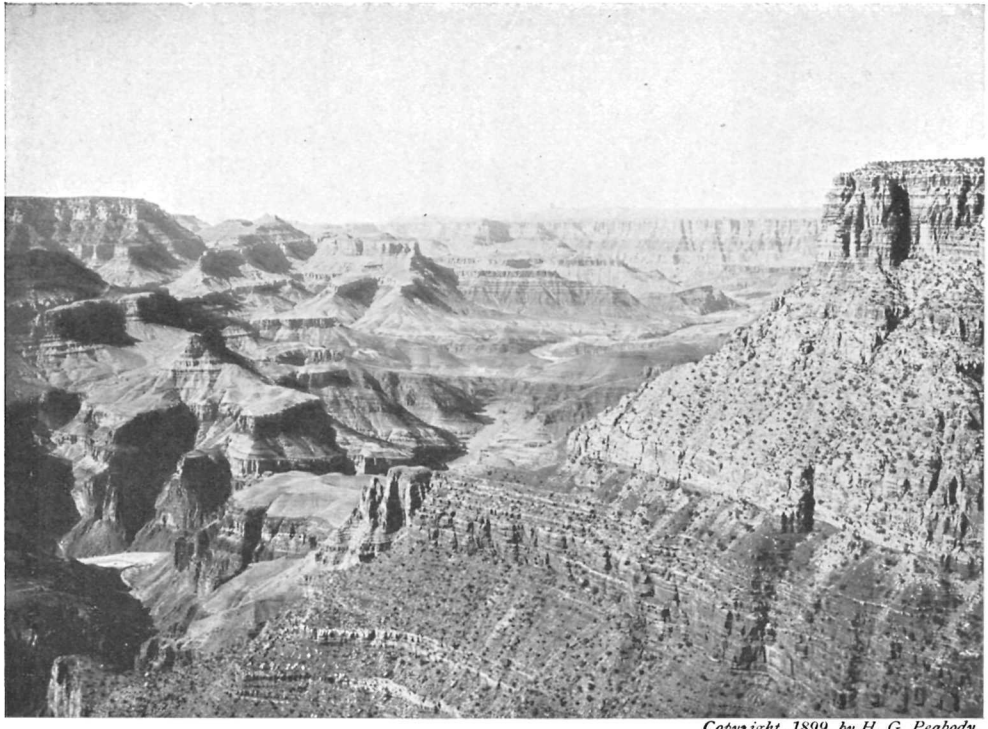
"Beginning at the point of intersection of the parallel of thirty-six (36) degrees, thirty (30) minutes, North Latitude, with the meridian of one hundred and eleven (111) degrees, forty-five (45) minutes, of Longitude west from Greenwich; thence westerly along said parallel of latitude to its intersection with the meridian of one hundred and twelve (112) degrees, forty-five (45) minutes, West Longitude; thence southerly along said meridian of longitude to its intersection with the parallel of thirty-five (35) degrees, forty-five (45) minutes, North Latitude; thence easterly along said parallel of latitude to its intersection with the meridian of one hundred and eleven (111) degrees, forty-five (45) minutes, West Longitude; thence northerly along said meridian of longitude to its intersection with the parallel of thirty-six (36) degrees, thirty (30) minutes, North Latitude, the place of beginning.

"Excepting from the force and effect of this proclamation all lands which may have been, prior to

the date thereof, embraced in any legal entry or covered by any lawful filing duly of record in the proper United States Land Office, or upon which any valid settlement has been made pursuant to law, and the statutory period within which to make entry or filing of record has not expired; and all mining claims duly located and held according to the laws of the United States and rules and regulations not in conflict therewith.

"Provided that this exception shall not continue to apply to any particular tract of land unless the entryman, settler, or claimant continues to comply with the law under which the entry filing settlement or location was made."

It is a matter of regret that the United States Government has not yet seen its way clear to convert the most scenic portions of the Grand Canyon into a National Park. The people ought to own, forever, this glorious inheritance. There should be no limitations placed upon their perfect enjoyment of it but such as are necessary for its preservation; and while the forest reserve act, above quoted, is a step in the right direction, there should be no incompleteness in this act of national reservation as a public park. An act should be passed forever preserving all the natural curiosities, wonders, and scenic marvels, the game and forests of the region; reserving it from private occupancy, so that it shall remain in unrestricted freedom for the benefit, pleasure, and enjoyment of the people; and at the same time providing for the granting of such leases for hotels, railways, stages, and other privileges as are necessary for the com-



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THE RIVER FROM UTE POINT.

fort, convenience, and safety of visitors. In addition to this there should be an administrative act passed defining all offences against the park and providing a penalty for their commission. The blunders in the organization of the National Park of the Yellowstone need not be repeated. At trifling cost the necessary protection can be secured and wanton destroyers kept in wholesome check.

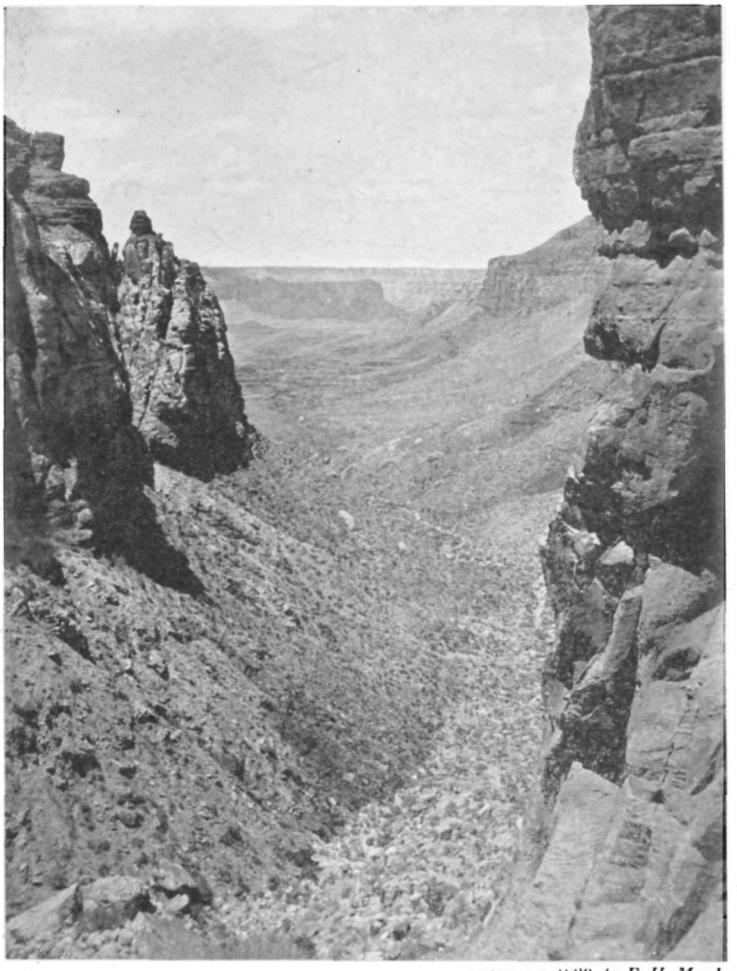
While there are many things that might be referred to as fit subjects for legislation or proclamation, I am especially anxious that the mural faces of the Grand Canyon shall not be desecrated by painted advertisements. Now that the railway has made it accessible, it is not unreasonable to fear that unless some action is speedily taken the visitor may find, staring at him from the walls of the Canyon, a painted recommendation to use some special liver pad or try the only reliable catarrh cure.

CHAPTER XXVI

THE TOPOCOBYA TRAIL AND HAVASU (CATARACT) CANYON

THERE are two Cataract Canyons known in connection with the Colorado River. One is the Cataract Canyon of the upper portion of the river, referred to in Chapters Two and Four, and the other is the Cataract Canyon which receives the drainage and flood waters of the northern slope of Williams Mountain, the Kohonino Forest, and also of the southern rim of the Grand Canyon for a distance of nearly fifty miles. It begins near the town of Williams, at the base of Williams Mountain, and winds and twists in a tortuous manner through a comparatively level country for about one hundred miles, but fifty miles from the Grand Canyon it enters the bluffs of the southern slopes of the Kaibabs, and becomes a wildly romantic canyon, in the heart of which live the interesting tribe of Indians known as the Havasupais. From this canyon radiates an intricate series of smaller but grand canyons. It is the latter canyon to which this and the succeeding chapter are devoted, and it is referred to throughout this work by the name given to it by the Indians, viz., the Havasu, or Canyon of the Blue Water.

In the stupendous majesty of its walls, their close proximity to each other, and, consequently, in nar-



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AT THE HEAD OF TOPOCOBYA TRAIL INTO HAVASU CANYON.

rowness, Havasu Canyon more nearly approximates to the popular idea of a canyon than the Grand Canyon itself. In this regard it is similar to, though surpassing, the canyon of the Little Colorado, and as the latter is practically inaccessible, and the former is so comparatively easy of access that I have taken my daughter into its inmost depths, I deem it appropriate that it should find a representative place in this book. It is a part, and a not insignificant part, of the Grand Canyon system. It is one of the most important of the southern tributaries of the Colorado River; it is the home of a tribe of Indians whose history and every-day life is inseparably connected with the Grand Canyon, — a people who rudely engineered the whole of the trails described in this book from the Tanner-French Trail, nearest to the Little Colorado, to the Mystic Spring Trail on the west, — the six most important trails of the Grand Canyon, — so that the only reason against its introduction is that it cannot be treated in these pages as fully and satisfactorily as its importance and interest warrant.

Ten years ago, in company with Mr. Bass and a special agent sent out to make overtures to the Havasupais to send their children to Fort Mohave to school, I made my first trip down the Topocobya Trail to the Havasupai village and the superlatively enchanting waterfalls, which have given their name to the canyon.

The Indians call it the Canyon of Hahavasu, — the blue water, — a most appropriate and truthful designation, for the water we find on our arrival at the villages is of a singularly blue color. The In-

dians themselves are the Ha-ha-va-su-pai — the *pai*, people, of the *va-su*, blue, *ha-ha*, water. This is shortened into Havasupai, and by the miners and people of Arizona generally into "Supai."

Leaving Bass Camp, we drive over a fair wagon road that mainly follows the long used Havasupai Trail from the village to Hue-tha-wa-li, which, as the reader will recall, is the Mount Observation of the Mystic Spring Trail. The whole wagon ride is through the pinion, cedar, and juniper forest that covers this portion of the southern edge of the Grand Canyon. There is nothing of peculiar interest in the ride, except that we pass one of the water-pockets of the Indians, — valuable to them beyond silver or gold, — a natural water hole in the limestone where the rain-water collects in sufficient quantities to last beyond the rainy season into hot and dry weather. It is about midway between the heads of Topocobya and the Mystic Spring Trails, and therefore most conveniently and appropriately located. It rejoices in the appellation of Ha-ha-ta-wal-ga.

After about thirteen miles of this picturesque rolling forest and glade have been passed, the wagon is left, and provisions and bedding — if one is going for a prolonged stay — are placed on pack burros that have been driven on ahead, and we take the saddle on good horses or mules, sure of foot and steady of nerve, for we are going to descend a trail that tries the nerves of horses as well as men. Two miles of riding down the gentle slopes of a "draw," where the Topocobya Canyon has its head, leads us to the point where this ticklish part

of the trail begins. And it is well we were warned beforehand. We ride out upon a very small level space at the foot of the limestone walls that already begin to hem us in, and from there take a look at the "jump off" down which we are expected to believe human beings have constructed a trail safe for us to travel. It is too much for even *our* credulity. Directly before us — we are on its very brink — is a precipice of a thousand feet, that appears to hollow in beneath us, so that we cannot see its base. There, far, far, but immediately below, is the dry bed of the stream, boulder strewn and rough, in which is our trail, and in that short lateral distance we must lower ourselves the thousand feet of this awful precipice.

Ah! what clever engineers these Indians of a past generation were! To have seen the difficulties would have been enough to discourage ten generations of school-trained engineers, but to the practical necessities of the Havasupai the natural obstacles of making this a place of ingress and egress were soon overcome.

Follow with your eye Mr. Bass and the Indians who have come to meet us. To the right, on a narrow shelf, that seems a mere scratch on the face of this frightful cliff, they are *riding* or leading their horses.

If they dare go, we dare also.

So, following them, as they zigzag down the loose rocks and boulders that have fallen into this "Topocobya," sometimes going to the south, then to the north, with the advance members of the party now below us so that easily we could jump

upon their backs, — in places where to give an enemy a love-tap with a fifty pound rock would have been, in purely Indian days, the most simple matter imaginable, — then straightening along on a shelf under the overhanging cliff, and descending over another hair-raising precipice, three steps hewn out of the solid, slippery rock, only to return to more "zig and zag," and "zag and zig," — *this* is the occupation that arrests our attention for a full hour, the interest heightened by the constant solicitation one feels as to whether the horse he is leading will slip over him in the dangerous turns, or whether it will be possible to avoid scaring the horse on the shelf above that is advancing to the south as we studiously and carefully pick our steps to the north. If he falls he will surely bring down upon us a perfect avalanche of the rocks that line his perilous pathway.

The Indians' name for this place is an appropriate one. A "Topocobya" is any semi-circular declivity between two outstretched rocks, as at the fleshy curve between the finger and thumb.

A short distance before reaching the dry bed of the stream the trail makes another detour to the left, landing us immediately at the base of the solid mass of limestone and sandstone, and there, indeed, are we surprised at finding ourselves suddenly within a secret recess of grandeur, fascination, and usefulness. Trickling down from the edges of the lowest layers of the rock is an almost imperceptible spring of water, but it is sufficient to comfortably fill three rocky basins, holding forty or fifty gallons. Rising up from these basins is the wall, — solid, mas-

sive, pitiless rock, — curving slightly outwards, so that, in its ascent, it soon completely overhangs and overshadows this cunningly hidden retreat. A chamber indeed for goddesses to bathe and sport in, unalarmed and fearless, for, provided the one



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AT THE TOPOCOBYA SPRING.

approach is protected, there is no spot around from which a peeping Tom may see what transpires.

This trail and the spring are connected with the memory of the notorious John D. Lee, of the Mountain Meadows Massacre, for it was on the plateau above that he was discovered by the Havasupais. Blindfolded, they led him down the canyon we are soon to traverse, to the hospitality of the village, where, for nearly three years he was generously entertained and cared for; as completely lost to the

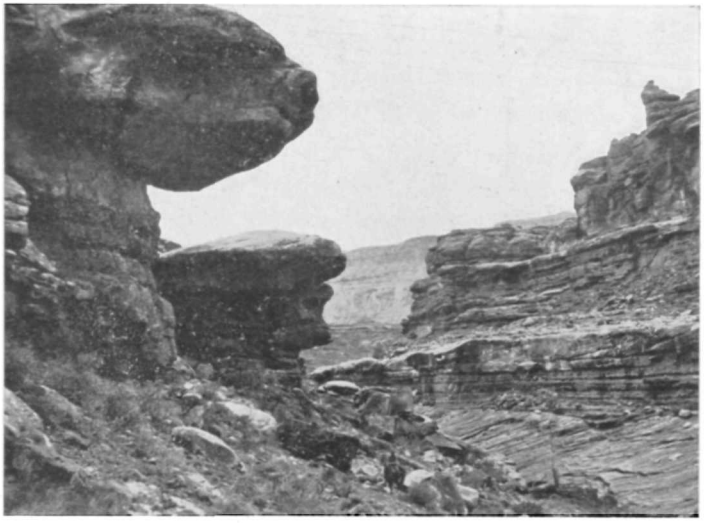
outside world of wives, friends, church, and country, — all of whom were looking for him with varying degrees of eagerness — as though he had no existence whatever.

Packs adjusted, saddles put back from the necks of the horses, and cinches tightened, we resume our journey. For a while — a mile or so — our trail is on the loose pebbles of the dry stream. The rocky walls of sandstone and limestone tower precipitously on each side of us. This is Topocobya Canyon, a side canyon to the main Havasu (Cataract) Canyon, to which this leads us, and its junction with which we reach when about half the distance between the spring and the village is accomplished.

All along this portion of our way are immense masses of rude conglomerate, — pebbles, rocks, and boulders imbedded in a softer substance which has hardened around them like mortar, — occupying such positions as demonstrate them to have been formed by slow accumulation in the former bed of the stream. Oftentimes they were directly in the course of the creek, which has washed through them and formed walls on either side through which we pass, fifty, a hundred, and even more feet high, thus showing the power of the occasional torrents which disturb this now quiet and dry ravine.

The ravine soon cuts into the red sandstone, and rapidly we "drop" into it, leaving the gray walls, to be immediately hemmed in by the red. What a change of scenery in a few minutes! These walls have marked stratification, and, as the erosion has cut down the rock, it has left terraces, revealing the lamination. These terraces are of varying sizes

and widths, and as we go lower and lower they are crowned with all the fantastic forms and figures that one can conceive. This would have been a perfect treasure ground of suggestions for the mediæval sculptors who wanted hideous forms for gargoyles for their churches and cathedrals.



OVERHANGING CAPITALS ON THE TOPOCOBYA TRAIL.

Now the canyon narrows, and all the loose pebbles and sand have been washed away. We are riding on the solid sandstone on a narrow ledge or shelf, and here, to the right, below us, the rock is scooped out into a series of rudely oblong water-pockets or bath-tubs, in which, after a rain or flood, water is always to be found.

Now we descend from our shelf, by using the rock terraces as a stairway, back again to the bed

of the stream. A trail horse is no more concerned about walking down or up these stairs, with a two hundred pound man upon his back, than a porter is concerned at carrying a ten-pound valise up a flight of stairs.

"Let their bridles hang,— don't attempt to guide or control them. They understand their business and know the way far better than you. Keep your seat and enjoy the rugged picturesqueness of the scenery. They will do the rest in safety to themselves and you," is the advice of the guide.

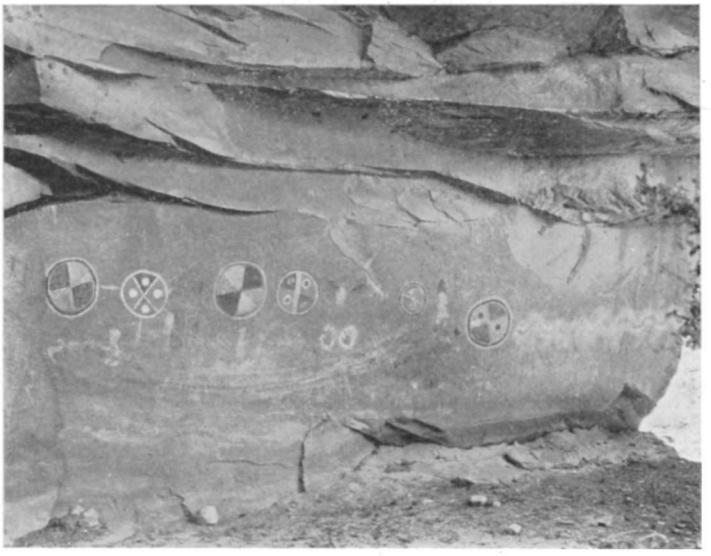
So, on they go, unwatched by us. First on a shelf to the right, then on one to the left; now up, now down, but always carefully and knowingly.

At last we come to a ledge to the left which we feel we must watch. It remains almost on the level, whilst the stream bed to the right narrows and descends with fearful rapidity. Our trail dodges in and out, around immense boulders that have fallen from the walls above where stone toadstools stand threateningly toppling and near, and great petrified toads, weighing perhaps half a million tons, every moment startle us by their apparent readiness to jump.

Every step reveals strange red sandstone houses, citadels, giants' heads, monster forms as various and inconceivable as those of summer clouds.

"All off your horses!" is the cry, and we dismount. We are about to make a perilous turn, where there is but room for the unencumbered horses; so, bridles in hand, we lead them, pass this danger spot, and find ourselves out of Topocobya Canyon upon a sliding, dangerous shelf in Rattle-

snake Canyon. The sandstone ledge upon which we now walk is two hundred feet or more above the bed of the stream. The surface of the ledge is rounded off and slopes rapidly towards the precipice edge. A slip or a stumble and a man



SHIELDS AND PICTOGRAPHS ON WALLS OF HAVASU CANYON.

or horse once started down that rounded surface would stop only on the ravine bed below, unless Providence specially interposed in his behalf. But as we are all sure-footed and steady-nerved, we reach the end of the shelf in safety, where another "flight of stairs" down the terraced edges of the rock brings us to the bed of the ravine, where, retracing our steps, we leave Rattlesnake Canyon, make a curve of a few feet, and are in Havasu (Cataract) Canyon itself.

On the left is a large sandstone rock on which rude representations of the Great Serpent, various shields, hands, antelope, and men are depicted, all of which are held in great reverence by the Havasupais.

The road, or trail, is now comparatively smooth and easy. The bed of the stream is rough, rocky, or sandy, and the walls grow more precipitous as we descend. The curves and angles of the ravine are more than we care to count, especially as the day is hot, the walls absorbing and then radiating the heat, until we long for the interior of a heated bake-oven as a change.

Here to the left is Polyphemus Gorge. On the side face of the canyon is an immense cave where a hundred of Vulcan's monster workmen might commodiously have lodged; and a little way down the canyon are a thousand of the rocks they hurled at the poor Greeks as they sought to escape. Even all their gigantic power was needed to move these rocks, for the smallest of them weighs a score of tons.

Down, down we go, the walls becoming more grand, more precipitous, more striking as we proceed. Now and again we come to a fallen boulder or splinter of rock, split from the great walls above. Some of them would form a quarry large enough in themselves to build a structure as large as the Court House in Chicago, the Grand Hotel in Cincinnati, or even the Capitol at Washington.

But our necks are tired, craning them to allow our eyes to see all, or half, the wonders of this shut-

in red-rock Havasu Canyon, and we are glad, thankful, when at last, after about fifteen miles of horseback riding since we left the wagon at the head of Topocobya, there appears just ahead a fine grove of cottonwood trees, and we hear the noise of much



IN THE HAVASU CANYON.

flowing water, which Mr. Bass informs us is the bubbling out in a thousand springs, some as large as a horse's body, of the subterranean waters of Havasu Creek, which from now on boldly and openly flow above ground to join the great Colorado fifteen or twenty miles farther on.

This was my first trip down the Topocobya Trail. Since then I have been a dozen times, but I never weary of its grandeurs. A few years ago I took several friends, of whom two were ladies, — one

my daughter, and the other a sweet-spirited, brave, and courageous woman from Chicago. We were somewhat limited for time, and, on making the return trip, left the Havasupai village late in the afternoon, hoping, by forcing the horses, to reach the wagon at the head of Topocobya Trail before dark. But it was more than we could accomplish, and by the time we arrived at the foot of the steep and dangerous thousand-feet-high trail it was so nearly dark that I viewed the ascent with feelings of anything but calmness and equanimity.

And now, looking back upon it all, who can tell the horrors endured in that ascent!

Leaving Nellis and Symons at the junction where the trail went into Topocobya Spring to get provisions we had cached there on our way down, and to fill the canteens with water, the ladies and myself went on ahead. The trail was so steep that I disliked asking them to walk, and yet it was so dangerous I feared to allow them to ride. Here, indeed, also was another Scylla and Charybdis. I wanted to caution them, and yet I knew if I did so I should arouse within them the dread I wished to avoid, and thus make possible the danger I feared. So I said nothing.

We rode up in the rapidly growing darkness, taking a few yards at a time, and then stopping to rest the horses. Higher we went, zigzagging to and fro, until now it was so dark that my horse appeared to have no head, and not a sign of the trail did the most piercing glances reveal. Should we dismount? No; better ride a little farther and then get off. So on we went. As I called back,

both ladies answered, "All right!" to my inquiries as to their comfort and readiness to ride farther. At last a turn was made, which, in a moment or two, I knew would bring us to the most dangerous and critical part of the trail. It was a steep slope leading on to the narrow shelf before referred to which went close up against a frightful overhanging wall, and there made an acute angle to the left, at the same time ascending three steep stone steps, on the topmost of which the trail sharply angled again to the left immediately above the trail over which we had just ridden, and on an equally narrow shelf. And here was the terrible danger; below the three stone steps was a drop of two or three hundred feet. Far quicker than it has taken me to write this, I was on the shelf, and as my horse turned to climb the steps I could feel the yawning blackness to my right. Should I make the ladies dismount? I knew the horses could take the steps all right if they were left alone, and so, as I did not wish to arouse their fears, I let them come on without any warning, trusting to the watchful care of an all kind Providence to bring them safely over the dangers. As soon as I reached a place where the trail slightly widened, drawing rein, I breathlessly awaited the coming of my companions. My daughter's horse walked along step by step without a stumble or a fault, and in a few moments I breathed an inaudible but none the less sincere "Thank God" as her horse stopped close to mine. Then, calling out encouraging words to Mrs. Long, she came nearer, — on to the lower shelf, — I could almost see her

in my agony of suspense. Then I heard her horse turn upon the rocky steps, and I began to breathe more freely, when, the noise of his stumbling hoofs aroused awakening echoes from the rocky walls, which sounded louder than fiercest thunder, and instantly stopped the frantic pulsations of my heart. In another moment I almost fainted as the dull



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ON THE TOPOCOBYA TRAIL STEPS, WHERE MRS. LONG'S HORSE FELL.

thud of a falling body reached my ears, immediately followed by a low groaning "Oh, dear!" I waited for a moment to hear what of all sounds I dreaded most to hear, — the shock of the body falling upon the rocks at the foot of that frightful precipice, — and never was soul more thankful than I to hear nothing more than a loud sigh, as of one in a deep swoon. Flinging myself from the saddle, I handed the reins to my daughter as I passed, bidding her dismount also; and then carefully has-

tened to the steps, hopes and fears alternately chasing themselves through my heart. Would the clumsy horse step upon our friend? Would she move in her unconsciousness and roll from the steps into the abyss? Would my going back frighten the horse so that he would lose his footing on the narrow shelf where he stood? Could I possibly pass him at this critical spot? These and many other questions flashed through my brain like lightning as I crawled on the shelf. The horse answered some of them by rushing past me, and I felt thankful to have him out of the way, even though he nearly pushed me into the deep, dark blackness. Another moment and I was by the side of the insensible woman, her deep sighs satisfying me that she was still alive, but the darkness rendering it impossible to tell how seriously she was injured. Lifting her in my arms, I managed to reach the other shelf and the widened trail. But our coming startled her horse, and as he ran forward he frightened the two horses ahead which my daughter was holding, and the next moment we heard all three dashing up the trail at full speed. Surely the bars that the Indians had put across the upper portion of the trail to prevent stock from escaping would arrest their flight! But no, just at the same moment that I reached the place where my daughter stood trembling at this new disaster, I heard the sound of poles and bars as they were whirled aside by the fleeing horses, and then I knew that they had escaped, and soon would be roaming through the boundless forest and plains above. By this time, however, Mrs. Long had re-

covered enough from the shock to ask where she was and what was the matter. A few minutes' more rest and she thought she could slowly proceed up the trail, so that, on reaching the top, I might follow and endeavor to recapture the horses, while she and my daughter awaited the arrival of Symons and Nellis from the spring. But it was slow work. Mrs. Long was so shaken and bruised that she could take only a few steps at a time, and to accomplish these she had to be sustained. It was with a deep sigh of relief that my thankfulness was expressed when we reached the top of the trail. But even now our difficulties were by no means over. Our wagon, with all our camp equipments, was over two miles away. It was pitch dark. The horses that Nellis and Symons were bringing were heavily laden, and we had no saddle. Even had there been one, Mrs. Long was incapable in her present condition of sitting upon a horse alone. We were indeed in a frightful plight! I felt I must follow the horses, as without them we could not get back to the railroad, and yet I felt it was brutal to leave my timid and shrinking daughter with a possibly seriously injured woman alone in the darkness, in a locality where the wild howls of coyotes and other night animals were constantly heard. I could only do what I thought was best, and, brave women! without a word of selfish murmur or complaint, they both urged me to follow the horses, while they promised to sit content on the rocks and await the coming of the men. With a prayer to God for their protection I plodded along in the darkness, running where I knew the

trail was reasonably safe, and crawling in one or two places where the memories of former rides along sides of yawning chasms made me somewhat uncomfortable.

Occasionally I stood and listened, ready to return if the ladies called for me, and hoping also that I might hear the horses. Soon I was satisfied that they were not far ahead, and after a while I heard them stop for a little, and I knew that they had found grass. But the moment they heard me they were off again, and a half-dozen or more attempts to steal upon them soon satisfied me that it was a hopeless task to endeavor to catch them unless I climbed up the steep sides of the canyon, — for even though we were out of the steepest part of the canyon, we were still in a place where the talus on either side was more precipitous than I cared to adventure in the night-time. So, relinquishing the chase, I returned to the ladies. It was not long before Symons and Nellis also appeared. And then began our walk, in the dark, over the longest, dreariest, most discouraging two miles of trail it has ever been my misfortune to travel. Those two miles stretched out interminably. The darkness got blacker, as if to completely bury us from the sight of Heaven. And it did, indeed, seem as if we were forsaken of all the good powers of the universe. I was the only one who knew anything about the trail, so wearily I plodded ahead, feeling for the narrow trodden path with my feet, and occasionally lighting a match to see that we were all right. My daughter followed, leading one of the horses, then came Symons, half

carrying Mrs. Long, and the procession was closed with Nellis and the other horse. It seemed to me the hours lengthened into weeks of darkness before we reached the wagon. With what joy we gained the crest of the short but steep hill on which our wagon stood, few can understand. A fire was soon lit, provisions cooked, and around the camp-fire we ate and drank all we needed. Though completely unnerved by her fall, and wearied out, we were now assured that Mrs. Long had received no serious injury, and this made our hearts light. But, oh! how weary we all were! Almost too weary, even after our refreshing meal and stimulating coffee, to stretch out our blankets and crawl in between them.

But poor Nellis! even this enjoyment was denied him. Throwing a saddle over one of the horses, he followed the three that had escaped, and we were quite willing to be awakened out of our sound repose by his return just before dawn with the truant animals.

In two days more we were at the railroad and on our way to visit Acoma, the City of the Cliffs, and in the excitement of the strange scenes there witnessed, the adventures of Topocobya Trail were almost forgotten.

CHAPTER XXVII

THE HAVASUPAI INDIANS AND THEIR CANYON HOME

OF no tribe of Indians in the United States has more wild nonsense and foolish exaggeration been written than of the Havasupais. Men who merely heard of, but never saw them, wrote outrageously false accounts as to their place of residence, their stature, their ferocity, their cliff-dwellings, and of a tiny people whom they held in cruel slavery and degrading bondage. Such statements could not be controverted, as not ten white men could be found fifteen years ago who had ever visited the Havasupais in their canyon village, or knew anything whatever of their life and habits.

The name by which the Havasupais were known to the Spaniards, and which they have bequeathed to us, is "Coconino" (Kohonino). This has led some writers to confuse the names Havasupai and Coconino (Kohonino), and speak of them as distinct tribes, the one inhabiting Havasu Canyon and the other the region known as the Coconino (Kohonino) Forest. It is clear, from the name that the present-day Zunis give to the Havasupais, that the Spaniards obtained the name from them. The Zunis speak of the tribe as Kuhni kwe, and of the region they inhabit as Kuhni. Remembering Spanish pronunciation, it is not difficult to assume the meta-

morphosis of Kuhni kwe into Coconino—Ko-ho-ni-no. Sitgreaves changed it again to "Cosninos," and tells of some mules stolen from him by them, and Lieutenant Ives, who descended the Wallapai Trail, names them Yampais. The common designation for them nowadays in Arizona is Supais, though the name means nothing, and is a dividing of their word for blue, *va-su*, and *pai*, people.

In the preceding chapter I have described the journey down the Topocobya Trail as far as the cottonwoods and the place where the creek bubbles out in a thousand springs. Here begins the home of the Havasupais.

The village occupies the whole length and width of the canyon for a distance of some three miles, beginning at the schoolhouse, and continuing below Navaho Falls, near to the upper portion of Bridal Veil Falls. The river or creek winds irregularly along, first on one side and then on the other, flowing with great rapidity; occasionally arrested by a well-constructed dam, which thus forms a large reservoir, admirably adapted for the purposes of a swimming pool. Almost the entire length of the creek, both in the village and below the falls, is lined with willows, cottonwood, mesquite, or other green trees; hence the name bestowed upon the people by Cushing, — "The Nation of the Willows." No people on earth have a more picturesque home. Rugged grandeur, combined with quiet beauty; flowing water with ponderous rocky walls; blue sky and blue water,— ha-ha-va-su; green trees and red precipices; tiny ha-wa's where merry naked children gambol, laugh, and play; fertile fields in

which men and women patiently labor; sheltered nooks under shady trees, where women deftly weave water-tight baskets, dress buckskin, or grind their corn or grass-seeds; gossiping places where men sit and talk over the faults and frailties of women, or where old men tell of the "days of the long ago" "when the world was young" and the coyote ate the heart of their ancestors, and made the deeps of their canyon home, — these are what one sees. The walls of the canyon at this point are in the red sandstone of the carboniferous, and their deep, rich, beautiful red is the dominant color. Seen in the upper part of the canyon, before the village is reached, and without the contrasting effects of the varied greens of the trees and fields, the red becomes monotonous, but here it is never wearisome, never obtrusive. Here and there where the walls are a little more broken, or the canyon a trifle wider, one may see the red strata above, the talus sloping backward and leading to the great precipices of the cross-bedded sand and limestone. These are lighter in color than the red, and, when illuminated by the direct rays of the sun while the red below is in shadow, the picture scarcely seems like solid, unyielding rock, but a fairy vision fit for the setting of some Arabian Night's tale.

That night we were invited to camp at the ha-wa of Tom, the kohot Navaho's eldest son. A kohot of the Havasupais is the chief. Navaho was the kohot, but there were four sub-chiefs or kohot-kedjes, and Tom was the senior of these four. Calling to his eldest daughter, Jennie, Tom bade her wash her hands — in several waters, which she

dutifully did — in order that Mr. Bass and his white friends might be fully assured of their cleanliness, and then calling upon the former for *meāla* — flour, — *meula* — sugar, coffee, — *sci* — bacon, — she made as good biscuits (baked in a Dutch oven) as hungry men ever ate, ground the coffee and nicely prepared it, fried the bacon, brought in a dozen fine roasting ears of corn (to me the most delicious portion of the meal), and a large *ku-u* — basket — of peaches. Spreading one of our blankets on the ground and placing the food thereon, she called to us to "sit up and eat." We were not loath to do so, but we were all somewhat amused, and poor Jennie considerably chagrined, to find that, not being accustomed to the white man's salty bacon, she had liberally sprinkled it with salt as if it had been a mess of fresh deer or antelope.

Poor Jennie, — she had a tragic history and equally tragic death; and some day, if no pen more gifted than mine makes her its theme, I shall endeavor to do full justice to the memory of one who, though a dark-skinned Indian, was tender, true-hearted, devoted to principle, and steadfast to what she conceived to be right, even "unto death."

No sooner were we fairly established at Tom's ha-wa than the Indians began to flock around the place in the hope of speedily reaching Mr. Bass. Their devotion to him and his to them was touching in the extreme, and, in the many trips I have made to the Havasupais, generally in his company, I can testify to the truth of the following statement, which I quote from an account (that has a place in my scrap-book) of some visitor's trip to Havasu Canyon.

"Everywhere the Indians had something to tell Mr. Bass, my guide; now it was a tale of sorrow, sickness, or death; now asking for advice, now wishing him to settle some difficulty for them. He listened to it all very patiently, and always had a word of comfort for them. All the money he had he gave them, and from his supplies he took flour, sugar, matches, baking soda, and other things to distribute among them. I also gave them all the change I had, for nowhere was it more needed than among this destitute people."

That night, as I stretched out on the sand in my blankets, outside of Tom's ha-wa, the grandeur of the stupendous walls of the canyon impressed me more than they had during the day. Was there ever such a sublime place before used by man as a site for his home? Travellers come back to their native land full of descriptions of the great temples of the Nile and the wonderful ruins of vast structures found elsewhere in the world, but where has man ever contrived and erected dwellings between walls of rich red sandstone, formed of layers so perfectly and harmoniously placed that they appear as if laid by a master mason, and that tower into the pure cobalt sky, two thousand feet and more above? A sensitive soul is ever awed, a petty soul dwarfed, and a religious soul elevated by contemplation of them.

I was invited to share Tom's ha-wa, but when I found that in that one hut not only his own family, — himself, wife, and several sons and daughters, — but also a number of relations, male and female, were also to be accommodated, I declined the offered hospitality with thanks.

Next morning saw the beginning of my studies of the Havasupais, which have afforded me much pleasure and gratification ever since. Not far away was an aged and almost helpless old man, perfectly nude, struggling under a wicker frame



TO-HOL-WOH FRAME.

which his daughter covered over with blankets. A basket holding water was placed inside, and every few minutes she thrust hot rocks under the blanket. Before long the old man was sweating vigorously, but he remained in the to-hol-woh for fully twenty minutes longer. Then, hastily casting aside the blankets, the woman poured two or three large ollas-full of cold water over her helpless parent, after which she wrapped him up in one of the blankets and left him to dry in the sun.

This primitive Russo-Turkish bath is largely used by the Havasupais, and I have seen a score of men after taking it dash into the deep pools of the creek, bathe for half an hour or more, and then stretch out and enjoy the warmth of the sun. A couple of weeks ago (August, 1899) I was invited by some of my Havasupai friends to enjoy To-hol-woh with them. The ground inside the wicker frame was neatly covered with a layer of beautiful willow twigs, and then the blankets pinned over the frame. By the side of the to-hol-woh was a log fire, in which two or three scores of rocks were placed so as to become thoroughly heated. I was honored by being asked to become the first to take a seat in the frame. Two others then followed, the blanket "door" was shut, and three or four hot rocks placed to the right of the opening. My vis-a-vis, one of the medicine men, immediately began a wild, exciting song, in the erratic music of which I endeavored to join, while I exercised all my attention to get at the words. I was able to catch enough to explain that the song is a recital of the advice given to the earliest Havasupais by their gods, Ho-ko-ma-ta and To-cho-pa, that they must never neglect To-hol-woh.

"My children, my children, listen to me while to you I speak earnestly.
I love you, or why should I have brought you into being.
I am To-cho-pa, the god of your fathers, who came up to earth from the lowest recess;
'T was I who gave my daughter to be wooed of the sun and the water
That you, my children, might be born and live upon the earth.
To-hol-woh is good, my children, for I, To-cho-pa, give it to you.

Make it of willows, green willows, that grow on the banks of the Havasu ;
Cover it with willows and mud, that its heat may not be lost:
In the fire place rocks, large and many, and make them fiery hot:
Then, as brothers, each help the other, as you sit in To-hol-woh:
Those without shall bring the rocks made hot with fierce and burning fire,
And those within shall sing and tell the words I have taught.
Oh, To-hol-woh, thou art a gift from To-cho-pa.
Let the heat come, and enter within us, reach head, face, and lungs,
Go deep down in stomach, through arms, body, thighs.
Thus shall we be purified, made well from all ill,
Thus shall we be strengthened to keep back all that can harm,
For heat alone gives life and force."

This is a very rough translation, but it adequately represents the song, shorn of its many repetitions, such as: —

Let the heat enter our heads,
Let the heat enter our eyes,
Let the heat enter our ears,
Let the heat enter our nostrils,

and so on, line after line, stanza after stanza, until every known and unknown member of the body had been named.

After two songs a basket full of water was handed to the priest, and he sprinkled it upon the hot rocks. In a moment the tiny place was filled with a fierce, biting steam, that made each breath seemingly of fire, and I almost shrieked with its burning force. But it was my intention to bear all I could, in reason, and the first few breaths taken I was able to join in another song (of the same burden) with earnestness and fervor. At its close another sprinkling of water and ascent of steam took place, and as hotter rocks had been inserted while we sang, it was all I could

do to endure this second dose. But there was another song and another steam due, ere the curtain was lifted and we came out. The priest stretched himself out in the sun, but the other victim, an Indian (who seemed to have enjoyed it), and myself (who made believe he had), rushed to the creek, and there in a fine swimming hole revelled in the water. Then, after dressing, as I stretched out in the sun, I began to feel the refreshing effects, and no city Turkish bath ever surpassed it, though had the swim been followed with a well-administered massage, the later pleasures would have been much enhanced.



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NAVAHO, THE KOHOT, OR CHIEF OF THE HAVASUPAIS.

On first arrival at the village one's attention is mainly attracted to the Indians themselves.

There is as much love of ornament among them as is displayed by the Pueblos, but evidently poverty allows them less opportunity for its gratification. When possible, however, they will trade for or buy from the Zunis or Navahos silver rings, bracelets, necklaces, belts, bridles, etc., and they display them with gratification and pride.

Their domestic animals are mainly dogs, and a few cats are to be seen in some of the ha-was. The dogs are not well cared for, and they look like half-starved, wolfish creatures, that are neither useful nor ornamental. They are often tied out in the gardens and fruit patches to keep raccoons, foxes, and other predatory animals from destroying the fruit. I have seldom seen a dog or a cat affectionately handled or petted, though it is no uncommon sight to see a great hulking lad take a young puppy or a kitten and twist its front legs over upon its back, put it down, and laugh heartily as he watches its struggles to bring its legs back to a normal position.



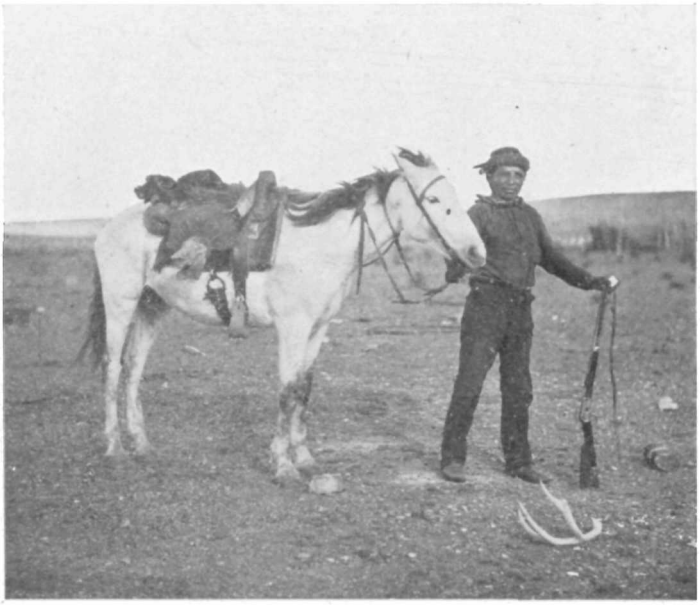
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OLDEST SQUAW OF THE KOHOT NAVAHO.

Only the other day I saw a dozen big lads surrounding a young raccoon, one of whose feet was fast in a steel trap. They kicked and otherwise abused it, set their dogs upon it, and enjoyed to the full the horrible tortures of the poor creature, and were surprised when I insisted that it be immediately put out of its misery.

And yet parents are invariably kind and affection-

ate to their children, and never seek to control them by either harsh words or actions. The latter are seldom disobedient to the expressed or known wishes of the former. As a rule the old people are well cared for. They are watched and tended not



CHICK-A-PAN-A-GI.

only by their own relatives and friends, but the whole tribe takes a kindly interest in their welfare.

There is no definite method of giving names to Havasupai children, many of them having none at all until near or after the age of puberty. A name will be given because of some personal, facial, or strong mental characteristic, or in ridicule of some habit or other. For instance, one boy that I knew

was named Chi-i-wa, he having a goitre, and that being its Havasupai name. Chick-á-pan-a-gi (bat) received his name from the striking similarity his face at times presents to that of a bat. Pu-ut was very proud of a Mexican sombrero that was given to him, and wore it in and out of season, day and night; consequently its name (pu-ut) was given to him. One child, in her mother's arms, naked, plump, and round, was seen imperfectly by the wife of the teacher, and turning to the mother she asked: "What's that? A watermelon?" And from that one remark the child has received its name for life, viz., Somaja — the watermelon.



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MAN-A-KA-CHA, PRESENT KOHOT, OR CHIEF OF HAVASUPAIS.

Another child was given a pair of black pants, — mi-ki-u-la, — and, expressing his unbounded delight in them, the name was given to him. It sticks, and will stick until some important and striking event happening in his life suggests a change.

Some of the elders thus have several names, as has Vesna, who is also called Pu-ut.

Many of the names given are proofs of the rude, lusty animality of the people, for they are untranslatable to ears polite, though to the Havasupais they are every-day words and suggest no offence.

A great source of amusement to the little chil-



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HAVASUPAI GIRLS PLAYING GAME OF HUI-TA-QUI'-CHI-KA.

dren — especially the girls — is tossing three or four hard small melons as the jugglers do, seeing how many they can keep in the air at one time. Often have I seen four, and sometimes five and six, kept up together. Their eyes and quick, active motions make this an interesting occupation to witness.

Another game, called Hui-ta-qui'-chi-ka, is played as follows: —

Squatted around a circle of small stones, the circle having an opening at a certain portion of

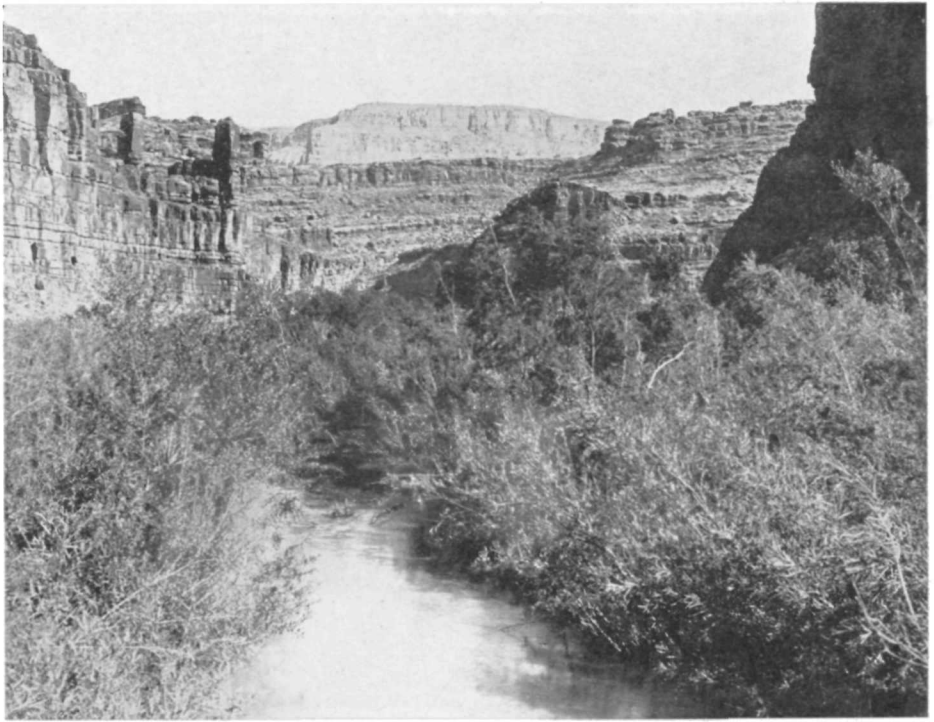
its circumference, called the *Yam-si-kyalb-yi-ka*, and a large flat stone in the centre, called *Taā-bi-chi*, the Havasupai Indians play the game called *Hui-ta-quĭ-chi-ka*. Any number of players can engage in the game. These players are chosen into "sides." The first player begins the game by holding in his hand three pieces of short stick, white on one side and red on the other. These sticks are called *Toh-be-ya*, and take the place of our dice. Rapidly they are flung upon the centre stone, — *Taā-bi-chi-ka*, — and as they fall, counts are made as follows: —

3 whites up	10
2 whites and 1 red up	2
2 reds and 1 white up	3
3 reds up	5

Tallies are kept by placing short sticks between the stones — "*hui*" — that compose the circle, one "side" counting in one direction from the opening *Yam-si-kyalb-yi-ka*, and the other "side" keeping tally in the opposite direction.

Of late years this game has been one of the most popular forms of gambling with the Havasupai, and even the girls now play it, gambling for safety-pins or other girls' treasures.

But space forbids lengthened description of this interesting people. Elsewhere I must write more fully about them.



WIG-LI-I-WA AND THE HAVASU (BLUEWATER).

CHAPTER XXVIII

HAVASU (CATARACT) CANYON AND ITS WATERFALLS AND LIMESTONE CAVES

IT is at the foot of the cottonwood trees before mentioned that Havasu Creek bubbles up in a thousand springs to enjoy an open-air existence for



NAVAHO FALLS, HAVASU CANYON.

the remainder of its journey to the Colorado River. It is no figure of speech to say a "thousand springs," for the creek is alive with them all the way down, some small and others as large as a man's thigh.

At Navaho Falls, half a mile below the village, the stream is fully ten feet wide and about four feet deep, and flows rapidly. As the water emerges from the ground it is neither cold nor pure. It is slightly warm, and though clean to the eye, is heavily charged with lime and oxides.

These sediments are answerable for the astonishing process which is constantly in operation immediately below the Havasupai village. They rapidly solidify, clinging to anything that affords sufficient resistance to overcome the force of the current. It seems that at some remote period the inner chasm below where the Indians now live became gorged and choked at different points by falling boulders, thus forming a base for the cataracts and waterfalls it now contains. The velocity of the current was checked, its carrying capacity reduced, and the work of building up commenced. Destruction at one point, reconstruction at another. Trees, vines, etc., took root in the alluvial deposits. Each succession of vegetation became enwrapped in a solid casement of lime, while the sand and débris were held in check and firmly cemented together in a conglomerate mass. For ages the solidifying process has been going on, building outward and upward. Miles and miles of this conglomerate or native concrete may here be seen, as well as the processes of manufacture in active operation. There are tree trunks, doubtless encased when growing, and now exposed by later erosion of the surrounding deposit. Scores of caves are found, full of reddish, creamy accretions, some as delicate as the finest ferns, others that rival the cobwebs in their

frailty and surpass them in beauty. Above Navaho, Bridal Veil, and Mooney Falls one may spend hours ransacking these repositories of exquisite workmanship "not made with hands," and by the sides of Bridal Veil and Mooney Falls, in places over which the lime-charged waters used to flow, especially beautiful specimens of these accretions are to be found. Just below Bridal Veil Falls is a great mass of this "concrete," reaching almost the entire width of the canyon. It is covered by a wild tangle of trees, shrubs, and undergrowth, yet careful study of its surface demonstrates that it was once the retarding pathway of the creek, which, at some impetuous period in its history, when made swollen and fierce by flood waters, rasped and cut a narrow way to the right, through which it still flows. For, allowing for the natural erosion, this wall — which is approximately from sixty to one hundred feet deep, an eighth of a mile wide, and a quarter of a mile long — presents the same appearance as the quarter or half mile in the narrow canyon *above.*

Here the bed of the stream, which extends across the entire canyon, is covered in many places with a growth of cottonwood trees. Wherever a root has been exposed the solidification of the carbonates has taken place, and, as one stumbles and jumps his way along, he crosses scores of small, large and larger basins, some of them ten, fifteen and more feet deep, and equally wide and long, all made by the upbuilding of these sediments clinging to roots, fibres, or arrested débris. Nothing can be more strange and picturesque than these basins. They remind one somewhat of the geyser basins in the

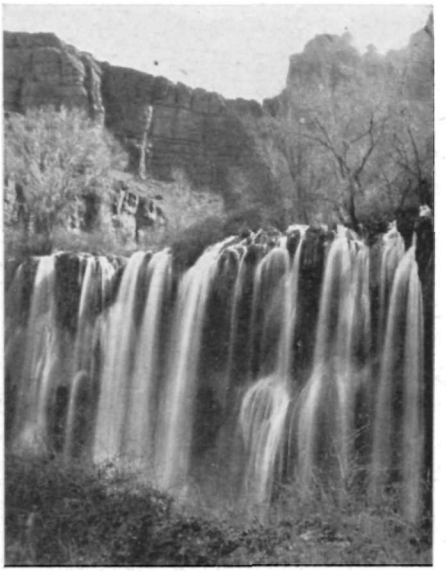
Yellowstone, but, being surrounded and overshadowed by trees, and filled with clear running water, and extending for a long distance, they are far more attractive and romantic.

In trying to reach Beaver Falls, which is several miles below Mooney Fall, I found hundreds of these basins. Indeed, the only way my companion and I could make progress was by swimming the pools, one after another, where the concrete edges were too weak or narrow to allow us to walk over them. This was exhausting and wearisome work, and, after three miles of it, we determined to go no farther, and with difficulty struggled, waded, and swam our way back. Never again since have I tried to reach Beaver Falls *that* way.

There are five waterfalls in Havasu Canyon. The first is Havasupai Falls, a small but picturesque "splurge" of waters not far below the village. The next, a few hundred yards farther down, is Navaho Falls, more pretentious and strikingly beautiful; but it is so inferior to the next falls, generally known as Bridal Veil Falls, that in these already too-expanded pages I must forego the pleasure of describing it.

Bridal Veil Falls — Wa-ha-hath-peek-ha-ha — is, to my mind, the most exquisitely beautiful waterfall in the world. There is nothing in the Yosemite that, for rich delicacy of beauty and rare combination of charms, can equal it. Sit down in the grass in the magnificent amphitheatre built by Nature immediately before it, and drink of its delicate beauty to the full. Nay! you cannot do that in one hour's view. You must study it ere you can know all that makes it what it is, "a thing of beauty

and a joy forever." To the left and right are towering cliffs two thousand feet high, of red sandstone. At your feet is rich green grass, and a delicate gauzy growth, as fine as asparagus grass which covers the ground with fairy-like lace and makes a carpet fit for a "Midsummer Night's Dream" dance. Above, just on the edge of the fall, are several trees, rich in their new dress of spring leaves, with the red mountains and azure sky, as richly blue as that of the Mediterranean, forming a singularly picturesque background for the incomparable fall underneath. The leafy branches overhang the falling water, and drop down so as to mingle their green with the blue and green of the water and the fluffy white spray of the fall, whilst ivy, peculiar vines, climbing clematis, maidenhair and other ferns, columbines, and rich and rare mosses, in a perfect revelry of green shading, cover the rocky setting of the fall with a grace and elegance that would be at once the envy and the despair of any



BRIDAL VEIL FALLS, HAVASU CANYON.

landscape artist. But even this does not complete the description of the background of the fall. The sediment in the water, before spoken of, combined with the small shrubs, etc., which grow profusely, has made a number of caves — some large, others small, as if a number of umbrella trees, growing upright on the face of the cliff, had been drenched with water, and then, whilst the water was still falling, by some magic art, trees, leaves, branches, and water had all become red stone. Now, with such a background, enjoy the fall — Wa-hath-peek-ha-ha. It is not one sheet of water, as the Niagara or Vernal or Nevada or Yosemite, but there are at least five hundred different streams, one large, three or four lesser ones, and the remainder mere tiny baby falls, which, flowing over the varied red and green behind, make up this fairy-like scene. Fairy-like? Yes, indeed it is! Shut out the world beyond from your thought, let your imagination have free play, and in five minutes Oberon and Titania, and all the hosts of Shakespeare's fairyland, are dancing on the grass, merrily tripping in and out of their own caves behind the falling water, laughing and playing with the dashing spray, while mermaids, tritons, and nereids splash and dash in the pools beneath as the water falls upon them. Pan is alive again! His pipes are heard in the singing of melodious waters as they descend, and dash, and babble, and murmur and gurgle on their way to the far-off sea.

In a booklet recently issued some one has had the effrontery to place the following as the title under an engraving of these falls: "The Hance Falls, Grand Canyon." Such a designation reflects

no honor upon the author of the book, as it is a false and misleading title. These falls are not in the Grand Canyon, and the association with them of the above name, which is synonymous with nothing that is "beautiful, true, honest, pure, lovely, and of good report," is a desecration and an impertinence that every true soul will resent.

There are four modes of descent to Bridal Veil Falls, all of which I have followed, though the way generally taken is the path on the left-hand side of Havasupai Canyon and down by the Miner's Trail. One may clamber down the side of Navaho Falls, or go along the regular trail to the left until he comes to a break in the marble wall, which leads by a scary foothold here and there down to the open space a few hundred feet above the fall. Or, he may cross to the right-hand side of the canyon, either above or below Havasupai Falls, and then, tying his horse to an immense boulder on the plateau, scale the wall over and through the caves to the bed of the canyon which is seen to the left, when looking towards the falls from below. And what a descent that "climb" is! First a few foot-holes cut into the rock, then through a manhole eight or ten feet deep into the heart of one of the great caves, before described, formed by the carbonate of lime in the waterfall of centuries ago when this was the place of its life, instead of fifty or one hundred feet away. Here another hole of fifteen or twenty feet is to be crawled through, and then more hand and foot holes, where one clings to the face of the wall as a cat climbs up a tree. It is ticklish work, and requires clear brain,

steady eye, and strong muscles to accomplish it in safety.

The caves here are the most beautiful and perfect I have ever found. They are such caves as our childish imagination used to people with mermaids under the sea, only all the seaweeds, kelp, and salt water are gone, and the caves are high and dry in the heart of this canyon. There are lace-work in most delicate tints, masses and masses of coral, and festoons of stone sponges in all the caves, and there are small caves leading from large caves, and caves within caves, caves below caves, caves above caves, and labyrinth after labyrinth of caves, all full of these exquisite and delicate specimens of limestone accretions.

It appears as if tree branches, the leafage of shrubs, ferns, trailing vines, creepers, etc., had all been caught by the overflowing water, and bowed down in umbrella form, and there, in that position, coated with the red limestone deposit before referred to. Imagine a score or a hundred of these stone masses, appearing one above another, and all across the face of the cliff over which Bridal Veil Falls leap, irregular in arrangement, diverse in form and size, and yet all having the umbrella shape, and you have a faint conception of these peculiar and interesting formations.

Of course only half the umbrella is presented. It is as if a large number of different-sized stone umbrellas had been cut in half, and then cemented on the rock wall for the water to tumble over.

Inside and underneath each formation are stalactites and stalagmites, crystals, lime-covered moss,

ferns, vines, shrubs, tree trunks, branches, bunches of leaves, masses of débris, but all made into fairy-like lace-work by the slow weaving of the stone-laden waters. I have several tree roots and branches covered from half an inch to an inch in thickness



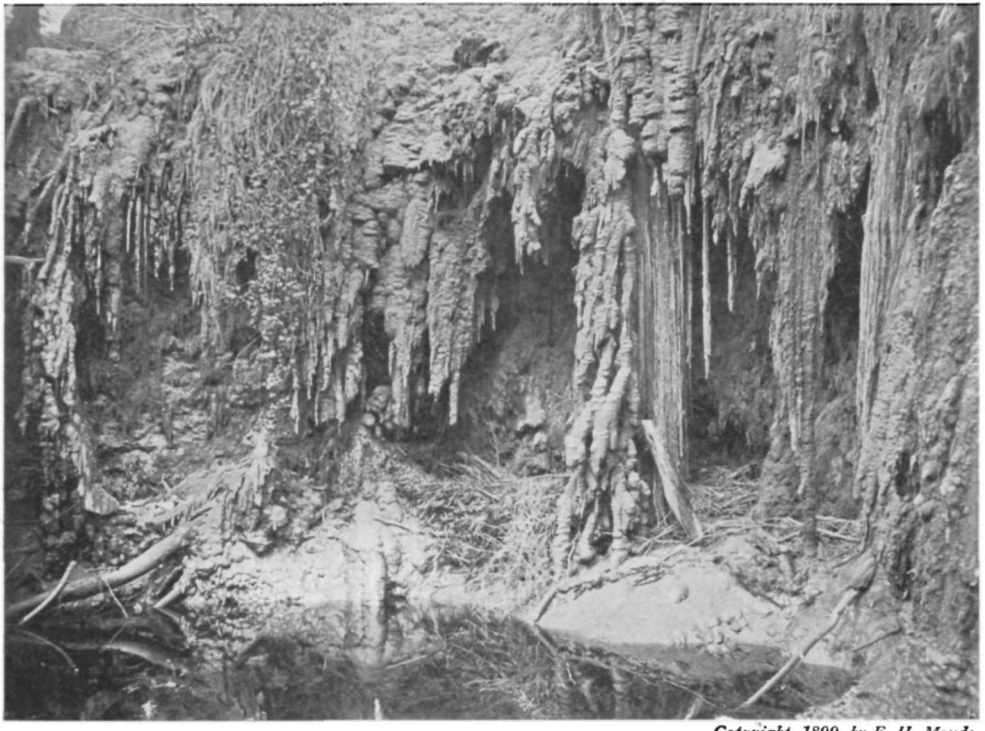
HAVASU BETWEEN BRIDAL VEIL FALLS AND MOONEY FALL.

with the stem still green and living within. I have seen scores of tree trunks, in the older formations, completely surrounded, sometimes the tree rotten to punk, in other cases so firm that they could be pulled out, thus leaving the stone matrix empty.

From Bridal Veil Falls to Mooney Fall is a most interesting walk. There is just enough of adventure in it to give spice and vim, even for ladies; but of course they, as well as the sterner sex, must dress in such a manner as to enable them to face the roughness without fear. The distance

is a mile, and the first part of the trip is over the peculiar red limestone formation already described. There are acres and acres of it, piled up in some places two, three, or four hundred feet high. Tree trunks, branches, leaves, twigs, are still found embedded in the lithoid substance, and in the hidden recesses of the caves rare specimens may be found, as delicate in appearance as the finest Mexican filigree work, and yet ready to fall to pieces at the slightest touch. They are composed of the skeletons of leaves, plants, and flowers, covered with a very slight lime formation, as if the "troll" of the waterfall had but breathed on them as they decayed.

Farther down, the surface of this formation has so disintegrated as to afford plentiful nourishment for plant and tree life, and there is an extensive area covered with a tangle of cottonwoods and underbrush. Climbing up the sides of the canyon, which become deeper as we go farther down, are vines, clematis, ivy, and other creeping shrubs, and on examining these I was astonished and delighted to find, in a score of places, the water trickling down, filtered of its reddening substance, and depositing its lime in a million fantastic forms on rocks, tree, fern, moss, and flower. Stalactites twenty feet long are found, hidden in tiny caves, — long narrow cracks, that just allow the pendent lime column to hang. By and by, if left undisturbed, these columns will so expand as to fill up the crevices, and a limestone layer will be made, to be further solidified by time, and in after years to be exposed, perhaps, as an object lesson in geological infiltration. This is not mere theory



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LIMESTONE ACCRETIONS IN HAVASU CANYON.

for I have watched the processes on my different visits, and in many cases have found the growth of lithoid matter exactly as here described, both behind the falls and in the canyon wall crevices.

Crossing the stream, in several places, on tree trunks, we come at last to a deserted mine. White men discovered a fairly rich silver mine, worked it for a time, built a trail at considerable expense out from the canyon to the plateau above, and then deserted it. In rambling about the tunnels I found a couple of boxes and sacks, in which were sticks of dynamite, candles, etc., the latter gnawed by the rats. On the dump are still to be found good specimens of ore, bearing silver and gold in paying quantities.

Just above Mooney Fall the creek flows directly under the right wall of the canyon. Its roar fills our ears as we walk with and wade in the stream, and at length we stand on the summit and look down through the spray and mist into the great basin below. We are able here to trace the path of this fall. The umbrella-shaped lithoid formation occurs here as at Navaho and Bridal Veil Falls, and, as the débris, washed down in the stream, has caught and solidified, the water has been diverted, first to one side, then to the other, until it has filled up the entire canyon from wall to wall with these beautiful appearances.

To the left of the fall we are able to climb down over a number of these "umbrellas" to a lower level, and there we can obtain not only a better view of the fall, but can explore a score of the caves under the umbrellas, where most delicate specimens are to be obtained.

This fall is named by the old Indians "Mother of the Waters," but by the whites, and now even by the younger Havasupais, Mooney Fall. This name was conferred upon it in memory of James Mooney, a mining prospector, who lost his life here in the year 1880. Mooney was a sailor, who, weary of his sea-faring life, settled at Prescott, Arizona, and became a miner. Learning of the Grand Canyon and its tributaries from cowboys and others who had traversed the banks of the great gorge, and doubtless fired with stories that have never ceased to circulate in this region about valuable mines discovered and worked by the Spaniards and the Indians and then abandoned, he with four others started from Prescott on a prospecting trip. They came in safety to the Havasupai village, and were hospitably received. Near the foot of Bridal Veil Falls they prospected and made some locations, and then pushed on until they reached the summit of these falls. Mooney, being the most adventurous of the party, urged an immediate descent to the lower plateau. How were they to reach the foot of the fall? He would descend by means of the rope they had brought. One end was securely fastened above and the other thrown over the precipice. Without waiting to see whether the rope reached the bottom, Mooney grasped it in both hands, coiled it around his leg, and was soon slipping down to the depths beneath. His companions, unable to see him, waited long enough, as they thought, to enable him to reach the bottom, but no sign or signal did Mooney give. They tried, by peering over the precipice, to see where

he landed, but in vain. Then one of them, seizing the rope, pulled upon it, and as it immediately yielded, found there was no one upon it; consequently Mooney must have reached the bottom. But still he gave no signal. They shouted and shouted, but no answer was returned. At last, thoroughly alarmed, and fearing that their comrade had met with an accident, they sought a place from which they could see where the rope hung. To their horror they found that it did not reach to the bottom of the precipice, and saw that Mooney, relying upon its reaching the bottom, had dropped unknowingly and unconsciously to his death. He must have been so surprised when he came to the end of rope as to be incapable of giving any alarm, or, if he did so, its sound was lost in the roar of the falling water. It is possible that he discovered that the rope was too short, but in throwing it over the precipice he had carelessly allowed it to enter a crevice, which would prevent his pulling himself up hand over hand. However it had happened, there was no doubt as to his fall, for there he lay. In vain his friends tried to descend the tragic depths, and at last, finding it impossible, sadly they gave up the trip and returned to Prescott. It was not until ten months later that a party of them returned, so equipped that they were enabled to build and put in place a ladder, — which, in an unsafe and dangerous condition, still remained when I made my 1898 trip, — by means of which they descended. There they found the remains of their friend. Reverently they dug a grave, and covered all that was left of him who had gone to his death

in so sudden a manner. When I first visited the fall, the grave of Mooney was still to be seen, although one end of it had been washed away during some unusual rise of the water in the canyon. It has now completely disappeared.

About six miles below Mooney Fall is a smaller cataract named Beaver Falls, from the large number of beaver constantly at work there. Five miles farther and the junction of Havasu Canyon with the Grand Canyon — Hack-a-tai-a — takes place. I have never seen this junction. Several times I have tried to reach it, but some unforeseen and unprovided for difficulty has always interposed. Some day perhaps I shall succeed.

The Havasupais call the Grand Canyon Hack-a-tai-a Chic-a-mi-mi. The first word signifies any loud, roaring sound, whether caused by a fierce wind or the dashing of the waters; the latter word means a large canyon. The Colorado River always gives this roaring noise, especially in the region of the rapids. So the name Hack-a-tai-a to them has come to mean the canyon as a whole. Hence, when a Havasupai would tell you he is going to the canyon, he says, "Ya-ma-gi Hack-a-tai-a," "I go to the place of the roaring sound." His own canyon is Havasu Chic-a-mi-ga — the small canyon of the Blue Water, Chic-a-mi-ga being a small canyon.



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HAVASU CANYON AND MOONEY FALL.

CHAPTER XXIX

AN ADVENTURE IN BEAVER CANYON

I HAVE had many a perilous adventure in my ten years of exploring in the canyons of the Colorado River, but none so peculiar as one I passed through this year (1899). My note-book says: —

"I sit here late in the afternoon of Saturday, August 3, 1899, alive, well, and happy. An hour ago my Indian guide and friend, — Wa-lu-tha-ma, — of the tribe of the Havasu, and myself were entrapped in a deep gorge, where the sun shines for but one or two hours in the day, between two precipices, the one descending over fifty feet and the other ascending about twenty-five feet. The space between these two precipices is perhaps two hundred to two hundred and fifty feet long, and is occupied by a deep pool of water. An hour ago I almost despaired of leaving the place alive. Bruised, bleeding, exhausted with my futile endeavors to scale the smaller precipice down which we had come, I sank back into the deep water almost helpless, — the Indian had about given up in despair, when I determined upon making another and a different effort.

"For years, as related in the preceding chapter, I have endeavored to reach the junction of Havasu

(Cataract) Canyon with the main canyon of the Colorado River (Chic-a-mi-mi Hack-a-tai-a), but have not yet succeeded. Others starting from the Havasupai village claim that they have stood where the pure blue waters of Havasu Creek mingle with the dirty red of the Colorado, but my efforts have not been crowned with success.

"On talking the matter over with Wa-lu-tha-ma, who with Yu-ta controls this portion of the canyon as a range for his stock, he suggested that, instead of descending to the foot of Mooney Fall, we ride along the plateau above, detour to the south to the head of a short but frightfully deep tributary canyon known as Beaver Canyon, ascend to its head, and, starting down its bed, reach the junction that way. It is astonishing how easy such trips look when one is merely talking or writing about them, and how the difficulties magnify as the endeavor is being made.

"I decided to attempt the descent the way Wa-lu-tha-ma suggested, and on Saturday, August 3, 1899, the two of us set forth. We rode along on the edge of the canyon, on the plateau made by the long-ago denudation of the strata above, and at places came to where, without dismounting from my horse, I could look down into the frightful depths of the canyon to my right, to where the cottonwood trees and flowing water gave life and wondrous enchantment to what would otherwise have been an awful hell of barren rocks. For the walls here were not more than a couple of stone throws apart,— two hundred or three hundred yards, —and yet they were a sheer two thousand feet or

more in actual, unbroken depth. No wonder that even the Indian kept as far away from the edge as he could.

"All the morning we rode, turning at length from the southwesterly direction of the course of the canyon of the Havasu to the south, where the tributary — Beaver Canyon — entered. This canyon at its junction with the Havasu is as majestic, grand, and awe-inspiring as the main canyon, but it rapidly narrows, going towards its head, until there are places where the sun seldom, if ever, reaches the bottom, — a canyon of perpetual gloom. To the head of this we rode, some three or four miles from the point of its junction. After finding water for our horses and turning them loose to graze until our return, — which we calculated might be in two or three days, — we prepared for the descent. We had provisions enough for scant three days, but they were hearty and good. Wa-lu-tha-ma took them on his back, and also carried two long, stout ropes, which we anticipated the possibility of needing. After walking down perhaps a quarter of a mile, we lunched and then pushed forward. In less than an hour we came to the place of our fate, — the place where I now write, and where Wa-lu-tha-ma lies asleep, wearied, exhausted with his heroic and successful climb back to life. Poor fellow! it is time we were returning, but I have n't the heart to awaken him. Let him sleep and gain the rest he has well deserved, for had it not been for him I should be down below on the nether edge of that pool, shivering myself to death, a shiver more of fear than of cold.

"We had passed one rather big downward jump caused by a blocking boulder when we came to this. Try to picture two marble walls, several hundred feet high and less than twenty feet wide. Immediately where we are two immense boulders of sandstone have fallen in, and, aided with lesser rocks, have completely blocked up the narrow space. To the right the tiny stream flows rapidly down the steep bed of the canyon. It dashes into a small pool under the larger of the two boulders and then down a marble slide or shute into the great pool beneath, which is fully twenty feet in depth at this end. When we reached this spot Wa-lu-tha-ma, after examining it, laughed and cried out, 'No in-yah-a' — no trail, no way, — and said we must go back. Seeing my intense disappointment, he looked again, and as I gazed into the dark pool of deep waters I asked whether he dare plunge into this deep reservoir, and swim to the farther end, and there look down to see what the prospects were for continuing our journey. He said he would go if I would. We could tie the rope to a boulder above and then pull ourselves up after we had investigated the situation.

"No sooner said than done. We undressed. I carelessly threw the rope over a boulder and asked him to fasten it before he ventured his weight upon it. Laughing and thoughtless, Wa-lu-tha-ma seized the rope without inspecting it, lowered himself, and plunged in. Calling out that the water was 'ha-ni-gi!' — good — I followed, and, to my horror, just as I put pressure upon the rope it

slipped from off the boulder and precipitated me into the pool. I sank, but my heart rose into my mouth, and I felt — what did I not feel? — as I came to the surface and looked up that horrible marble slide down which the water was flowing, — as it had been doing for centuries, making the rock as smooth as if polished by a lapidary, — and up the other side where the sandstone boulder stood at an angle so slightly tilted from the perpendicular as to seem absolutely precipitous. How should we get back? The Indian laughed with thoughtless glee. 'No yarm-i-gi,' he cried, — 'no way of getting back.' Hastily I swam to the lower end of the pool and found worse conditions there than at the upper end. It was another precipice deeper than the one over which we had come, and at the foot of it another pool equally as large as the one through which we had swum. And what beyond? I didn't know, but Wa-lu-tha-ma did. There was no way out down there, he said, except to struggle on, naked as we were, to the junction of the Havasu, then up to Mooney Fall, and endeavor to climb out up the old and dangerous ladder.

"This made even the Indian serious, and, swimming to the upper end, he tried and tried and tried again to scale the marble slide and the sandstone wall. But they were alike insensible to the danger of our state, and yielded not an iota of their impossible conditions. Then I tried, and the rough sandstone scraped away large pieces of my cuticle here and there, and the cruel marble bruised me almost everywhere as I slipped and slipped again in my desperate attempts to ascend.

"Then it was that I thought of trying to remove a smaller boulder that acted as a keystone by the side of the great boulder that dammed the lower end of the pool. I thought if this could be taken up, a large amount of the water of the upper pool would flow away and give us a better chance for our escape, than struggling up a steep-faced rock directly from deep water. But Wa-lu-tha-ma thought the water better than nothing to fall back in. 'Nothing,' meant being bruised on the rocks beneath, and perhaps dashed to death. Then why not try to carry some of the smaller rocks; build up a standing place; get it as high as possible; then one of us stand on that to give the other a 'boost' up the rock to where, possibly, a hand-hold could be reached, and thus escape made possible. It was hard work to swim, sometimes on the surface, but oftener under the water, with heavy rocks in our hands, and it was frightfully slow work building up a pile high enough to be of any service. But we kept at it. Sometimes we got a rock half-way across the pool and were compelled to drop it. Then rising to the surface for air, we would float a moment or two, regain breath, strength, and courage, dive down, seize the rock, and with a desperate forward dive seek to put it in place.

"At last I deemed the pile high enough. We sat down and rested, and studied out a plan of action. Wa-lu-tha-ma was to go first, get on the pile, and obtain as good a hand and foot hold as he could. I was to follow, and, planting myself firmly on the rock pile, help him up in any and every

way until he could stand on my body or shoulders or head, and thus get out. Fortunately we had a second rope above, so that it was not necessary for him to be weighted with the innocent cause of our misfortune as he made his endeavors. We did as we had planned. Twice he slipped back, and forced me to make a backward dive off the pile. But the third time he fairly seemed to hang on with his fingernails and eyebrows, while I braced myself to bear his strugglings as he stood on my body and shoulders reaching upwards. At last, with one shout and a grunt of content his weight left me, and he was safe on top. Joyfully I dived in, returned to the other end of the pool for the treacherously tied rope, swam back, and pulled myself out as Wa-lu-tha-ma held the other rope.

"It is easy to laugh at it all, now that it is over, but as I stretch over Wa-lu-tha-ma's sleeping form ere I wake him, and look down into that deep shady pool, the 'shivers' go over me, and I ask myself two questions: What would I have done without Wa-lu-tha-ma? and, Is there a Providence that watches over such a careless explorer as I am?"

We were tired out when we arrived late that afternoon at Wa-lu-tha-ma's ha-wa, which we had left in the morning. The Havasupais had openly prophesied that we could not make the descent, so I was not surprised, three minutes after our return, to see men, women, and children come around as if they had been on the lookout. As soon as possible Wa-lu-tha-ma and I sat down to eat, surrounded by about thirty of the Indians. They

listened with great glee to the recital, by my companion, of our attempt and failure. I was made the butt of the major part of the fun. Wa-lu-tha-ma ate and ate and continued to eat, and the coffee-pot was twice replenished ere he had completed his



WA-LU-THA-MA TELLING THE STORY ON OUR RETURN.

story. Knowing the joking propensities of his people and their utter indifference to the feelings of any person out of whom they can extract a little fun, I was prepared for the rude jokes and vulgar witticisms expended upon me, and sat eating and drinking with the stolidity of a Hottentot — or a Havasupai. If they enjoyed making me the object of their fun I was quite willing, since I was safe out of the adventure.

But I am going again some day.

CHAPTER XXX

THE GEOLOGY OF THE GRAND CANYON

TO discuss exhaustively, in a few pages, the geology of the Grand Canyon, when Major Powell and Captain Dutton required large volumes for the purpose, is an evident impossibility. All I can do is to give an outline of their theory.

Simultaneous with the deposition of the sedimentary strata in the ocean beds which afterwards became the plateaux of the Grand Canyon region, the uplift and subsidence consequent upon the cooling and contracting of the earth's surface were going on. For it must be remembered that in those early days of the earth's history its crust was in a far more heated, and therefore plastic condition, than it is now. So that when vast sedimentary deposits were rapidly made in any given area, the yielding earth subsided, and thus afforded room for more and higher deposits.

These processes of deposition and subsidence continued until, for some reason or other, a new era set in. The depositions ceased, the subsidence was reversed, and uplift began. And ere long (geologically speaking) the matter that had been deposited under water as sand, silt, and what not, now appeared above the face of the waters as solid rock; that latest deposited appearing first. And,

if the uplift continues long enough, all the strata thus deposited are exposed, and perhaps also the archæan and plutonic rocks beneath. This is what we actually find to be the case in the Grand Canyon.

At the mouth of the Little Colorado clear evidences of uplift and subsidence are seen in connection with the non-conformable strata of the pre-carboniferous era. Here, with a thickness of about five hundred feet, strata are found, in a *tilted* condition, upon which are *horizontally* deposited the several thousand feet of the carboniferous era. To the geologist the history of these strata is easily read. It tells of ten thousand feet of rock substance deposited horizontally upon the plutonic formations æons ago. In the uplift that followed their deposition they were tilted. While thus thrust out and tilted, denudation began. This undoubtedly was rapid and fierce, for ninety-five hundred feet were removed and washed down by the river.

But the non-scientific reader asks: How do you know ninety-five hundred feet of strata were removed from this region? With only five hundred feet left how can you assert that there were once ten thousand feet? In other words, How do you measure strata that are no longer there?

The answer is simple. One could take books that are but a foot high and an inch thick, and, standing them in a tilted position, lay them together, as in Fig. A, side by side, for a mile. Yet they would be but a foot in height. But if these same books were placed one above another, as in Fig. B,

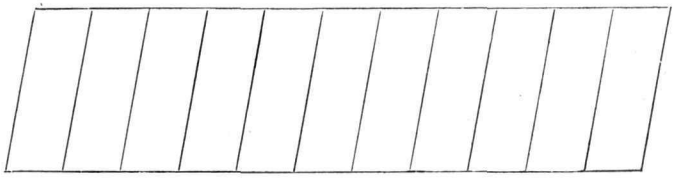


FIG. A.

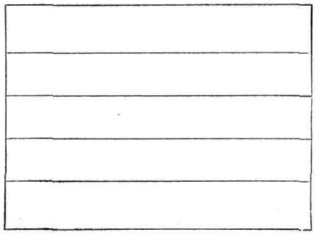
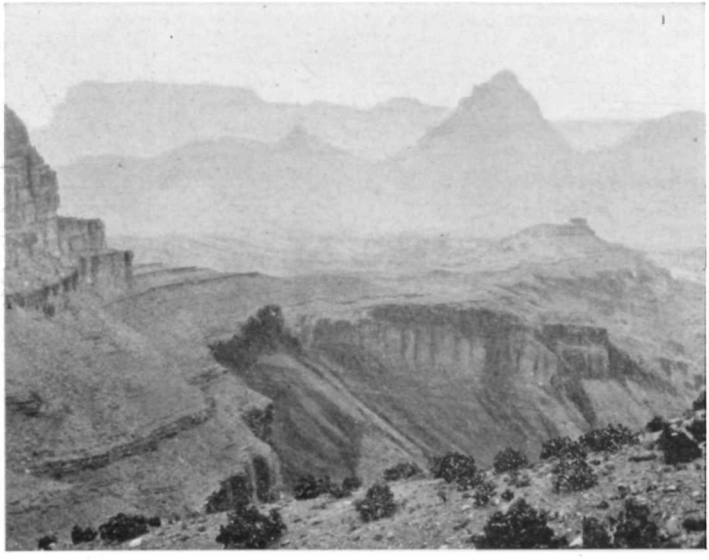


FIG. B.

they would no longer be a foot, but a mile high. Now, instead of dealing with books, deal with immense layers of rock five hundred or more feet in thickness and covering vast areas, deposited originally one above another as the books are piled in Fig. B to a thickness of ten thousand feet. Then slowly tilt this mass over until the rocks are sloping, as are the books in Fig. A, but of course reaching far up into the air. Let the forces of erosion gnaw away at them for the centuries, and by the time they are submerged again into the ocean bed, they are mere fragments of their former selves. Yet if their measurement be taken *longitudinally*, it is apparent that this must have been their height when originally deposited *horizontally*. Consequently, though now they are but five hundred feet horizontally, their longitudinal measurement being ten

thousand feet or thereabouts, we know that that was their original height.

Standing on Ute, Comanche, or Navaho Points, or riding down the Red Canyon Trails, these non-conformable strata are beautifully apparent.



ON THE RED CANYON TRAIL, SHOWING NONCONFORMABLE STRATA. NEWBERRY TERRACE AND VISHNU TEMPLE ACROSS THE RIVER.

Above these non-conformable strata are to be found various layers of the carboniferous to a depth of some four thousand five hundred feet. These are as level and horizontal as when originally deposited.

Here then is a demonstration that after the period of denudation, when the nine thousand five hundred feet of strata were washed away, the whole of this region subsided, and was again submerged.

During the period of submergence millions of tons of sand and other sediments were washed down from the rocky regions above, and in the course of the ages made the four thousand five hundred feet of depositions we now find in solid rock above the denuded fragments of the earlier strata. To account for their regularity we must assume that the bed of the ocean upon which they were placed subsided slowly and evenly to allow them to be deposited, and that then a new era of uplift began, and they were thrust out, with regularity and evenness, to take their places as a part of the rocky crust of the exposed earth surface.

But a study of the plateaux around and beyond the Grand Canyon demonstrate to the satisfaction of such an expert geologist as Captain C. E. Dutton that there used to be even ten or eleven thousand *more* feet of strata on this Grand Canyon Plateau region than now exist, so that, if all the strata that have been deposited here during the ages had remained, the sum would have been as follows: —

Archæan Rocks	depth unknown
Algonkian (?)	about 200 feet
Remains of non-conformable pre-carboniferous	500 "
Denudation of non-conformable pre-carboniferous	9,500 "
Carboniferous (upper and lower) . . .	4,500 "
Permian, Jura-Trias, and Cretaceous . .	10,000 "
Lower Eocene (lacustrine)	1,200 "

thus giving the enormous total of twenty-five thousand seven hundred feet of sedimentary deposits.

Imagine the height of a region nearly twenty-six

thousand feet above the level of the sea. And these are the conservative estimates of the best informed experts who have spent many years in investigating the geological conditions of this interesting region.

How came all these upper ten or eleven thousand feet of strata to disappear? Here is Captain Dutton's theory.

Suppose the whole country were forced up from underneath in a dome-shaped mass, and that over the area of greatest elevation the rasping forces of nature began to gnaw away the rocks, which were ground into minute particles and carried away as sediment in a river that had a great descent, and therefore great transporting power; it would not be long (speaking geologically) before that eleven thousand feet of strata would disappear.

If this theory were a correct one, however, the remnants of the strata would be found in the form of terraces leading up from all directions towards this common centre, the summit of the original dome, and which is now the platform of the Grand Canyon. These terraces *are* found west, north, and east. They are met, as one journeys east and north, exactly as one would expect to find them, — first the Permian, then, further back, the Triassic, then the Jurassic, followed by the Cretaceous and Eocene.

Dutton claims that this great denudation took place in Tertiary times. Here existed a great Eocene lake, which received the sediment-laden waters of the rivers above. Slowly the continent at this region began to be uplifted. The waters of the lake were poured out into a channel they rapidly carved for themselves. As the uplift continued, the

cutting down accompanied it with equal speed. The river, laden with rock débris, was the saw, — to use Major Powell's apt illustration, — and the formation of the uprising earth's crust was the log, and as fast as the uplifting forces supplied the log the saw cut through it. And these processes continued, until not only the eleven thousand feet of Eocene and Mesozoic strata were washed *through*, but the saw rasped into the Carboniferous, made sharper and keener by the destruction and removal of the beds of Eocene and Mesozoic which had once covered the Carboniferous.

And had the uplift not ceased, the sawing processes would have continued until many thousand more feet, perhaps, of the Archæan and Plütonic rocks had been exposed, and some of earth's most esoteric transactions revealed.

And this is the theory Newberry, Powell, and Dutton present to us as the only rational explanation of the existence of the various canyons of the Colorado River. It is accepted almost without question by all the great geologists of the world, and by them is believed to be the only theory that satisfactorily accounts for all the existing conditions.

But during all these æons of uplift and subsidence, erosion and corrasion, were there no greater forces at work? Are there no evidences of earthquakes, active volcanoes, and the like, to more satisfactorily account for this stupendous phenomenon? These are questions perpetually asked by those of less geological knowledge.

Complex questions, indeed, yet the geologists are

almost a unit in answering them. Earthquakes, volcanoes, faultings, flexurings? Yes, in great quantity, but as *subsidiary*, not *primary*, forces in the production of the Canyon.

Across the Grand Canyon and Plateau regions over fifteen faults of stupendous magnitude are found to exist. Some of these are hundreds of miles in extent, and the displacements vary from a few hundreds to upwards of seven thousand feet. Imagine the process. A great country, of thousands of square miles of area, split in half, one portion remaining on the level, and the other slowly but surely rising seven thousand feet above its original level, or subsiding to that extent.

It is the evidences of these great upheavals that puzzle the local and slightly informed geologists. They contend, and not without some show of reason, that these *must* have had some important influence in the creation and present appearance of the great Colorado waterway. Undoubtedly they have helped shape its ulterior form, but in a small and insignificant manner as compared with the great law of simultaneous uplift of the region and cutting down of the river's channel before outlined.

And it should not be forgotten here, by way of an important parenthesis, that, comparatively speaking, during all these years of cutting and rasping the river retained about the same level. It neither raised nor lowered. It went on flowing, and cut down its channel as fast as the uplifting forces fed the rock to its saw-like waters.

I have already described, in the chapter on the Mystic Spring Trail, the Wheeler Fold in Trail Can-

yon. This is one of the earth's flexurings while the processes of uplift and subsidence and crust crumpling were going on. But I think it is evident that this took place in pre-carboniferous times, and therefore could not have had any influence in determining the course of a waterway that was made through strata deposited at a much later era, and which, as an impervious sheet, covered this and scores of similar folds and wrinkles throughout the region. The Uinkaret Mountains, which are clearly seen from the head of the Mystic Spring Trail, are purely volcanic, and their fiery floods of lava have poured in burning streams over the very edge of the Canyon's precipices, thus demonstrating an activity long after the Canyon was formed.

It is not improbable that the San Francisco Mountains — which are all volcanic — were once an area of great depression in the plateau region whose denudation I have attempted to describe, and that, prior to that wholesale denudation, a chimney or rent in the earth's crust had afforded a vent for boiling lava from the molten mass beneath. This lava formed a crust over the area of depression, so that when, subsequently, the region round about was eroded, this lava crust acted as a protecting cap and saved the region from falling a prey to the otherwise irresistible forces. Thus, as the degradation continued, the erewhile depression became a prominence, and ultimately a mountain.

There are many other evidences of faultings, flexurings, and upheaval to be observed in the canyon region, and in the Bibliography published at the end of this volume the interested student will find a list of

those works that will aid him in his studies of these and all other geological phenomena connected with the Grand Canyon.

That the Grand Canyon region presents to the geologist a fascinating and unequalled field there can be no question, and he who seeks to penetrate the mysteries of nature's primitive forces will be wise if, ere he travels farther, he solves the problems here offered for solution.

CHAPTER XXXI

BOTANY OF THE GRAND CANYON

I SHALL attempt no personal account of the botany of the Canyon, but merely introduce this heading to allow the insertion of two items from the Canyon Hotel Register at the Peach Springs Trail. Professor Asa Gray, of Harvard, America's greatest botanist, and Mrs. Gray, visited the Canyon May 3, 1885, and thus wrote in the register: —

"Some conspicuous plants of the Canyon are: —

Fonquiera splendens,	"Occotillo."
Acacia Lemmoni, n. sp.	Cat's Claw.
Allionia incarnata L.	Flat on the ground, flowers all day and all the year. Shuts at night.
Fallugia paradoxa.	Bush with white, rose-like flower on slender stalk.
Cowania Mexicana.	Bush like last, many greenish white blossoms, followed by beautiful feathery seed-carriers.
Larrea Mexicana.	The Creosote plant. So vile in odor that even mules will not eat it.
Porophyllum.	With yellow flowers in balls, sweet scented, on slender twigs.
Eriogonum inflatum.	Herb. Indian pipe-stem.
Abronia turbinata.	Small flowers in cluster, white flowers in the sand on the river.

Alternanthera lanuginosa. Large flowers, separate. White flowers in the sand on the river.

Erytheae Calycosa. Herb with red, star-shaped flowers.

Professor and Mrs. J. G. Lemmon, of Oakland, California, on November 4 and 5, 1892, wrote as follows: —

"First visited the Canyon April, 1884, discovering several new species of plants.

Second visit, November 4 and 5, 1892. Following is a list of the principal plants of Peach Springs Wash and Diamond Creek to its confluence with the Colorado, beginning with the trees: —

Populus Wislizeni. The large poplar near the spring.

Pinus edulis. Nut Pine. The only pine of the region. Sp. *Piñon.*

Juniperus Utahensis, Lemmon, n. sp. Rare on the plateau, surrounding and in the Canyon.

Juniperus Occidentalis. Western juniper.

Prosopis juliflora. Long-pod mesquite, with large leaves and spines.

Prosopis pubescens. Screw-pod mesquite, with small leaves and spines.

Acacia Lemmoni, Gray, n. sp. Cat's Claw.

Dalea Parryi. Dr. Parry's dalea, shrubby bush.

Grayia polygaloides. Grease wood. Commemorating Professor Asa Gray. "Neat but not gaudy," as he says.

Canotia holacantha. Green bush, quite large on the cliffs below the spring; a mass of intricate branches and spines.

Quercus turbinella, Greene Shrubby black oak, the only oaks of the region.

Salix. True willows, several species along the damp canyons. Quite large one is *Salix longifolia* with white, long leaves.

Cheilopsis saligna.	Desert willow. Resembles a willow, but bears large red bilabiate fls.
Atriplex.	Several species of pigweed — one is quite a large bush.
Ephedra trifurca.	Mexican Tea, a noted medicine for skin diseases.
Penstemon Palmeri.	Dr. Palmer's beard tongue,— purple, in the Canyon, large (3–5 feet high), very fragrant and beautiful.
P. spectabilis.	Very beautiful. Near Peach Springs Station — purple.
P. Parryi.	Dr. Parry's, smaller, — red.
Salazaria Mexicana.	Fragrant shrub of the mint family. Commemorates the Mexican member of Boundary Survey, — Salazar.
Fallugia paradoxa.	Shrub with solitary white flowers.
Cowania Mexicana.	Shrub with many yellowish flowers.
Larrea Mexicana.	The noted Creosote bush, very strong-scented, spreading bush, with bilobed leaves and jointed stems. Even the traditional burro's appetite rejects this bush.
Fonquiera splendens.	"Candlewood," from its flame-like flowers, and also termed "Occotillo" from resemblance to a fish-pole. Very curious, and tenacious of life.
Porophyllum macrocephalum.	Odor of marigold.
Œnothera cæspitosa.	Large rose red, flowers numerous, by the very side of the Colorado river, fragrant.
Œnothera albicaulis.	White evening primrose.
Allionia incarnata.	Prostrate, running plant, with red flowers.

Salvia Greggii.	Perhaps undescribed, red. Diamond River.
Abronia turbinata.	On sand-spit at confluence of Diamond River.
Menthaceous plant.	Diamond River.
Aster tortifolius.	With very large showy flowers. Several other species along the Wash from Peach Springs.
Aplopappus.	Several species, one yellow-flowered, shrubby, in Diamond Creek.
Phacelia glechomaefolia.	New species, large-flowered, very pretty. Will be an acquisition for cultivation.
Phacelia Lemmoni, Gray, n. sp.	On rocks, small flowers rare.
Phacelia saxicola, Lemmon n. sp.	On rocks near Peach Springs, the roots penetrate the cracks of the rocks and flake off small convex scales, — hence the name.
Nicotiana trigonophylla.	Indian tobacco.
Argemone hispida.	Rough Mexican poppy, flowers 4–6 inches across.
Eucnide urens, Parry.	Clefts of rock along Diamond Creek, clothed with stinging hairs.
Hilaria rigida.	Galleta grass, coarse but very nutritious.
Muhlenbergia Texana.	Black Grama, fine-stemmed, very valuable, $60 per ton.
Panicum Lemmoni, n. sp.	Near Peach Springs Station, with several species.
Cheilanthes Parryi, Eaton.	Parry's cotton fern, clefts of rocks.
Cheilanthes tenera.	Clefts of rocks — high up on sides of Diamond Creek, very rare.

Cacti.	Several species called "Cholla" (Chaw-ya) if formidable, or "Tuña" if bearing eatable fruit.
Opuntia fulgens.	White-spined and formidable, bushlike.
Opuntia arborescens.	Quite large and terrible bushes.
Opuntia basilaris.	Prickly pear, common, nearly spineless.
Cereus Wislizeni.	Barrel cactus, 2–3 feet high.
Cereus gigantea.	Giant cactus, 40–60 feet high, "*Suguar-o*," Sp. for Water Carrier, (pron. Swar'-o).
Mammillaria phellosperma.	Fish-hook cactus, small, 3–4 inches high, with hooked spines.
Mammillaria pectinata.	Rainbow cactus, with bright-colored zones.

On the Kohonino Plains bordering the Grand and Havasu Canyons is a thin forest of *Pinus scopulorum*, Lemmon (lately decided to be a distinct species). This is south of the Canyon, and leads by scattered trees back to the magnificent forest of the same species covering the great Colorado Plateau, some seventy by thirty miles in extent, and which is seen at its best from any high point near the Grand View Hotel.

I am indebted to Professor J. G. Lemmon, of the Lemmon Herbarium, Oakland, California, for several valuable additions to this chapter.

CHAPTER XXXII

RELIGIOUS AND OTHER IMPRESSIONS IN THE GRAND CANYON

CAN any soul look upon a masterpiece of any kind, the masterfulness of which is in any degree apparent to him, and not feel the deepest emotions of his nature stirred? Marion Crawford well illustrates this in "Marzio's Crucifix." The infidelistic chiseller of silver images for churches, who despised creeds, churches, and priests, was yet so moved before a crucifix of his own manufacture that, as he bowed before it to study its artistic excellence the better, his daughter, accidentally seeing him through the half-open door, imagined him in the surprising attitude (for him) of reverent and adoring worship. And there was a worship — of its kind.

So, with all souls capable of feeling, the Grand Canyon produces — calls forth — emotions, feelings that, for the time being, at least, dominate all other feelings.

I once rode up the mountains in a fierce storm with Clarence Eddy, the great organist. We were almost blown from our horses. But the power of it, — the irresistible fury of the storm, the compelling impetuosity of the wind, the dominating roar of its angry voice in the trees, made such an impression

upon Mr. Eddy that he said: "This forms an epoch in my life. I shall play better for this experience so long as I live."

This is something of what I mean when I speak of the religious and other impressions evoked by the Grand Canyon. To the musician it will suggest new powers in his art; to the artist, new color emotions will be stirred; to the sculptor, new forms will be suggested; to the architect, new majesties in structure will be set forth; to the reverent believer in God, new conceptions of His power; to the agnostic or disbeliever, new and strange movings of the soul, which speak of higher forces than any yet conceived.

One man, an avowed agnostic, as he stood and gazed upon the vast amphitheatre of sixty-five miles' sweep which is opened up to the gaze at Havasupai Point, turned to me and said: "What a place! Here is surely where the Almighty will hold the Judgment Day!"

What a long history this Canyon has had in the making of it! Look back a hundred years, when Washington and Jefferson and their compeers were fighting for American freedom, and this Canyon was hoary with antiquity. It seems a long time ago since Cromwell battled to overturn the doctrine of the divine right of kings, yet the Grand Canyon has scarcely added a day to its history since the unhappy Charles the First was beheaded. The dawn of American history begins with Columbus, yet from the time of Columbus until now, scarcely a change of any importance in this great waterway could be discerned by the most careful observer.

History has begun to grow dim when you look back to the time when William the Conqueror, with his warlike Normans, slew the Saxon Harold at Battle Abbey, yet this great and mighty river was then flowing as it is now. The twilight has become darkness when we gaze upon the Pyramids of Egypt, yet God had sculptured the many and wondrous architectural forms of this Grand Canyon centuries before Cheops was born, or the dynasty of the Shepherd Kings had gone.

And as one listens to the teachings of the geologists in regard to the formation of the Canyon, the millions of millions of years that undoubtedly have elapsed since its foundations were laid, the millions that have rolled away to allow ten thousand feet of non-conformable strata to be deposited, elevated, tilted, washed away; the depression of the Canyon surface again for the depositing of Devonian, Lower Carboniferous, Upper Carboniferous, Permian, Triassic, Jurassic, Cretaceous; the formation of the vast Eocene Lake and its total disappearance; the opening of the earth's crust and the venting from its angry stomach the foul lavas that blacken portions of its area, — the mind reels and whirls and grows dizzy in a vain attempt to comprehend the magnitude of such periods of time, and when reason can assert itself it is to feel the truth of the Hebrew Apostle's words: "One day is with the Lord as a thousand years, a thousand years as one day."

The "American style of Architecture" is not yet born, yet, I am satisfied the time and the master architect will come. And when he does come, it is in this Grand Canyon that he will gain his inspira-

tion. From the varied, marvellous, and sublime of the thousands of miles of canyon, a system of architecture will be created quite as original and national as Persia and Egypt borrowed from their sandstone ledges, or the inhabitants of the north of Europe found in the primeval forests of the fir and pine.

Then who can gaze upon this weird and wondrous beauty and not feel that God must love beauty for its own sake? The idea that everything is formed solely as a background upon which to display the development of man, takes powerful grasp upon us when we yield ourselves to the persuasive eloquence of Browning, but a voice louder and more forceful than the great English master's peals forth in one's own soul when he gazes upon God's great work here, and he feels instinctively that the Almighty God made this glorious grandeur centuries of centuries before man ever could see it in order that He, personally, might enjoy its beauty.

Just as the garments of Aaron the priest were to be made "for glory and for beauty," so do I think this great Canyon was made as a revelation to man that God loves to make things solely for "Glory and Beauty."

Then its solitude! Ah, who but those who know and love the solitude that shuts out the fever of life; the fretful nervousness that contact with man produces; the rush of busy streets; the cold-heartedness, selfishness, indifference, and apathy to others' woes that one must see in great population centres, — who but he can tell the delight of this gracious, healing, restful solitude, where, however,

one is never alone? For there is an abiding sense of the brooding presence of the Almighty, all-powerful, all-loving, all-merciful, that soothes and hushes and quiets the distressed and wounded soul, so that a normal equilibrium is gained and strength restored to return to one's place, manfully to fight one's true battles with the world, the flesh, and the devil. To me this Canyon is the Holy of Holies, the Inner Temple, where each man may be his own High Priest, open the sacred veil, and stand face to face with the Divine. And he who can thus "talk with God" may not show it to his fellows, but he knows within himself the new power, calmness, and equanimity which he has gained, and he returns to life's struggles thankful for his glimpses of the Divine.

And yet what words can tell how utterly insignificant man must feel himself to be when he finds himself in the depths of this Great Gorge, solitary and alone, and finds not this Divine presence! He may be a king on his throne; a despotic ruler in his office; a monarch in his store; a tyrant in his workshop; but here he is so dwarfed, made so small, that, if he have any soul at all, he is humbled and made reverent at this marvellous manifestation of superior power, might, and greatness.

But it is only to suggest a few of the impressions aroused by these scenes that this chapter is inserted as a fitting conclusion to my book.

I never take a mental view of the great river flowing from the high snowy mountains of Utah, Wyoming, and Colorado to the great Pacific through the Gulf of California, that I do not feel

how like to man's life it is. Watch it from its source to its mouth. It has its rise in the pure white, unsullied snow of the mountains; it flows on, gathering strength and power as it progresses; it passes through Flaming Gorge, where everything is bright and brilliant; there is the excitement of the rapids, and the exhilarating feelings that come from dashing along at high speed and the dangers are minified. Soon sweet and restful paths are entered, where gentle deer browse, and the "forest aisles are filled with the music of birds, and the parks are decked with flowers."

Then comes the Canyon of Desolation, with everything dreary, desolate, and forsaken. But even here the "Lighthouse Rock" catches the rays of the sun and speaks of brightness beyond, which, indeed, is reached when farther progress is made, and Glen Canyon is entered. Marble Canyon, with its rapids and dangers, is passed, and then the waters enter the Granite Gorge of the Grand Canyon. Here jagged cruel rocks line the waterway, and there are places of deepest gloom where the sun never touches the water. Here are great waterfalls, and then deep cuts through black and forbidding lava. But on and on the water flows, enters Black Canyon, and finally emerges into the open, peaceful, gentle slopes of the desert, down and on, without effort, into the Gulf of California, soon to have all its individuality as a river lost in the vastness of the great Pacific Ocean.

Is not this a perfect type of man's life? He begins in the high mountains of innocency and childhood. He progresses through places where

everything is bright and brilliant, and passes in safety and exhilaration places in life where others, perhaps, have been wrecked. Then he enters the soothing parks and quiet pathways, gaining strength and courage for the canyons where rapids must be run and disasters risked, and, happily, avoided. How joyously he welcomes open places and sunshine that follow, and how disgusted with the restraining influence of the "bends" of life, and then how sad and forsaken when he is forced into the Canyon of Desolation! Friends have forsaken him, loved ones gone, perhaps even God seems to have left him to himself, but as he looks up, even here he sees the sun of grace shining upon the Lighthouse Rocks that raise their heads above the Canyon walls, and new hope, new faith, new encouragement are the result.

And alas! he, too, may have to contend with "Dirty Devil" streams flowing into his life, which will becloud and befoul the hitherto pure waters. But, as in the Colorado River, by and by the Bright Angel Creek, with full, clear, pellucid, refreshing, and purifying power enters in.

And so his life flows on, passing through canyons and rapids, dashing by the cruel, hungry granite and over dangerous waterfalls; but just as surely as the river flows on and enters the Great Pacific, so will man enter the unfathomable ocean of the heart of God.

So, friend, reader, whomsoever you may be, and in whatever portion of your canyon journey, may I commend the end of life to you as your encouragement. If you are in the refreshing parks

there may be Desolation Canyons ahead. Get all the strength and courage you can; you will need these and all the virtues ere the end of your journey is reached. Have you just entered the cruel waterway and been dashed over great precipices and find yourself crushed and bleeding where the sun never shines? Flow on! Ere long you will emerge into the sunshine, and in the bosom of God forever find rest.

CHAPTER XXXIII

PHOTOGRAPHING THE GRAND CANYON

UNTIL recently there were few subjects more disappointing to the photographer — professional as well as amateur — than the Grand Canyon. Its vastness, its great precipices and wide distances, all covered and filled with a peculiar purple or violet haze, rendered it singularly unaccommodating to the photographer's art. In the Yosemite and similar valleys the objects are so near, compared with those of the Grand Canyon, that photography was enabled to accomplish for the former what for years it could not achieve for the latter.

But as in all difficulties capable of scientific solution, persistence, skill, and science at length have overcome the obstacles to excellent picture-making to a great extent, and now good photographs of the Grand Canyon may be obtained. And in the forefront of those who have studiously worked for a solution of the many problems involved is Mr. Frederic Hamer Maude, of Los Angeles, who for several years has visited the Canyon, making hundreds of negatives, and learning from his failures the secrets of success. The result is an excellent selection of most artistic and desirable subjects. From the Red Canyon Trail to the Topocobya

Trail into Havasu Canyon he has seized upon almost every available point to secure grand and comprehensive views of the Eastern, Surprise, and Western Outlooks. From the interior plateaux he has made photographs of mural masses crowned with fleecy clouds that are triumphs. He has most successfully caught the varying moods of this most moody of American rivers, and its rapids, whirlpools, and smooth stretches have all pictured themselves upon his sensitive films. In his studies of the Havasupai Indians, the waterfalls, limestone caves, and general environments of their wondrous canyon home he has been no less successful, and this book owes many of its illustrations to his skilful endeavors.

Another photographer who has met with admirable success is Mr. A. F. Messinger, of Phoenix, Arizona. He has spent considerable time and energy at Bass Camp, Havasupai Point, and has a number of fine subjects from all the salient outlook points. With a persistent energy that would have daunted and discouraged most men, he labored day after day on the rim and on the plateaux below with his large twenty by twenty-four outfit, making gigantic panoramas twenty inches high and eight feet in length. Two or three exquisite pictures such as these, printed on bromide or platinum surfaces, giving the wide sweep of Canyon from rim to opposite rim, afford one a clearer comprehension of the architectural variety found within the Canyon walls than pages of verbal description. On one occasion, when taking his large camera down the steep trail to Le Conte Plateau, the pack mule,

just at the most ticklish portion of the road, objected to his weighty and top-heavy pack, and sought to rid himself of it. Kicking and plunging, he became oblivious to his danger. Lenses and knick-knacks scattering about his heels rendered him more reckless, and with a desperate plunge he landed head first on a sloping ledge, a foot between himself and death. With reckless bravery Mr. Bass dashed upon the prostrate animal and sat upon his head. Mr. Messinger, determined to hang on to his precious camera outfit, clung to the mule's rope with desperate earnestness, and between the two the animal was hoisted to a place of safety, his pack adjusted, and the trip completed without further *contretemps*. On another occasion, while on the very edge of the Grand Scenic Divide, a sudden storm arose, which nearly blew camera and operator into the deep gulf beneath. But, regardless of dangers and difficulties, Mr. Messinger persisted, and his excellent collection of superb photographs is his reward.



LYELL MONUMENT IN THE CORNER OF STANDING ROCKS.

The engraving of Lyell Monument, from the "Corner of Standing Rocks" on Havasupai Point, is one of Mr. Messinger's choice pieces.

Other photographic artists — as H. G. Peabody, of Boston, Massachusetts — have made fine pictures of the Canyon, and some of Mr. Peabody's artistic creations grace these pages by his favor.

But without question the finest, the most elaborate and satisfactory work yet done photographically in the Grand Canyon, has been accomplished by Mr. Oliver Lippincott of the Lippincott Art Photographic Company of Los Angeles, Cal. Mr. Lippincott has made a large number of photographs, taking in all the principal trails from the Red Canyon to the Mystic Spring and Topocobya Trail into Havasu Canyon. He has been preeminently successful in his large panorama work, making panoramas six and seven feet long and one to three feet wide. Photographically they are perfect; the mechanical work is the best of its kind, and of the art shown in securing the subjects, in choosing locations, and in placing upon the sensitive paper those scenes that were especially impressive to the Canyon visitor, too many words of praise cannot be said. Until photography in colors becomes an accomplished reality it seems to me that nothing can surpass Mr. Lippincott's Canyon photography. Especially should attention be called to his panorama from Comanche Point, taking in the river, Vishnu Temple, Point Final, Newberry Terrace, and the massive North Wall of the Kaibab Plateau. Another panorama is from Havasupai Point overlooking the region of the Mystic Spring

Trail, showing Point Sublime, Dutton Point, Bass Tomb, Dox Castle, and the Grand Scenic Divide. To own such pictures as these is to possess those things that are "a joy forever."

On his trip to the Mystic Spring Trail Mr. Lippincott descended to the river, making pictures from the Grand Scenic Divide, and all the way down Trail Canyon. Then crossing the river, he made several fine pictures of Shinumo Creek and Camp. He is now contemplating a trip which will take him across to the summit of the Kaibab Plateau, where, from Point Sublime, he will photograph those scenes that hitherto we have had no pictorial record of except in the admirable outline sketches, before described, made by Professor Holmes.

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APPENDIX

PRACTICAL HINTS TO TOURISTS

So many readers of the first edition have written to the author of "In and Around the Grand Canyon" asking practical questions as to how to reach the Canyon, etc., that he has deemed it advisable to prepare the following suggestions.

Railway to the Canyon. At this time of writing (April, 1901) the branch line from the main line of the Santa Fe, leaving at Williams, Arizona, takes the traveller to within ten miles of the "rim." A stage ride completes the journey. Possibly by the fall of this year the railway will be completed.

Visiting the Canyon in Winter. While there may be snow on the "rim" during some of the winter months, and the upper part of the trail be slightly blocked, my own experience is that winter is the best time to visit the Canyon. The heat is moderated and the trip is most agreeable. In an official Circular recently issued the Santa Fe Railway officials state that:—

"This winter the Bright Angel Trail (from the hotel down the Canyon to the river) has been open its entire length. Scarcely any snow has fallen and the weather has been charming. Such ideal atmospheric conditions are subject to occasional stormy periods of brief lengths. The only effect of a heavy fall of snow is to temporarily close the trail down the Canyon's side. Excursions may then still be taken along the rim for miles east and west over fairly smooth roads. The views from Hopi, O'Neill, and other points are always satisfactory, no matter what the season is. The stage line will run all winter. Should the snow become too deep for easy wheeling, the coaches will be converted into sleighs."

If one should happen to reach the Canyon in a fog, all the better. If the visitor be wise he will take advantage of his opportunities, for never can the Canyon be better studied than when the fog slowly clears and reveals the hidden wonders below.

The Railway and Stage Journey. The railway journey is described in Chapter VII., pp. 65 to 71, though, as before stated, ten miles of it has to be completed by stage. This ride is in an easy coach, through the Kohonino Forest, amid fragrant pines, over low hills, and along occasional gulches and "washes," following for the most part the graded line of the projected railroad. The air is always exhilarating, but usually of agreeable temperature. Should the weather be stormy, there are thick blankets handy, further protection being afforded by side curtains. Taken under the favorable conditions which generally prevail at this high altitude, the journey is a novelty and a delight.

Bright Angel Hotel. Accommodations, at present, are temporary, yet comfortable. The hotel comprises a combination log and frame structure of eight rooms, with a neat frame annex of six rooms, and (for summer use) several rows of tents, all clustered on the rim and surrounded by pines and spruces. Each room in the annex has two beds, a stove, dressing table, and Navaho rugs. In the log-cabin part of the main edifice are two large rooms; one is used for reception purposes, being heated by means of an old-fashioned fireplace, and tastefully carpeted with Indian rugs, also furnished with capacious rocking-chairs and a piano; the other of these two rooms is for emergency uses.

Good meals are prepared by an expert cook and served in a pleasant dining-room. In a word — the hotel facilities are such as one might reasonably expect to find for the rate charged, viz: $3.00 per day, on the American plan. There is no "roughing it;" everything is home-like and comfortable. One must not, however, expect any city luxuries. A telephone line directly connects the hotel with the outer world at Williams.

Bright Angel Trail. The trail is perfectly safe. It reaches from the hotel four miles to Angel Plateau on the top of the granite wall immediately overlooking the Colorado River, as described on pages 130 to 138. At this point the river is over one thousand feet below, while the hotel on the rim is four thousand feet above. The trip is commonly made on horseback, accompanied by a guide. Almost any number of persons can go at one time. Three dollars is charged for a horse, and $5.00 for services of guide, the latter amount being pro-rated among the members of the party. A strong person, accustomed to mountain climbing, can make the round trip on foot in one day, by starting early enough; but the average traveller will soon discover that a horse is a necessity, especially for the upward climb.

Eight hours are required for going down and coming back, allowing two hours for lunch, rest, and sight-seeing. Those wishing to visit the river leave the main trail at Indian Garden Spring, and follow the downward course of Willow Creek. Owing to the abrupt descent from this point, part of the side trail must be traversed on foot. The majority of tourists omit this part.

Those who deem themselves capable of going on foot should never attempt it without a canteen of water, and, in hot weather, should think eight or nine times (instead of twice) before they start. The descent is not so hard, but the long ascent is taxing for all but athletes. (See also what I say elsewhere about hard crackers and Malted Milk Tablets.)

Length of Stay. Arrange to stay as long as you can. This is what the officials say:

"While one ought to remain a week, a stop-over of three days from the trans-continental trip will allow practically two days at the Canyon. One full day should be devoted to an excursion down Bright Angel Trail (if open), and the other to walks and drives along the rim. Even when the trail is closed there is a sufficient variety of outlook from the plateau level to fully occupy the time. Another day on the rim — making a four days' stop-over in all — will enable visitors to get more satisfactory views of this stupendous wonder."

But why speed away in four days? If you want to know the Canyon, make a "trip" of it, as you do when you go to other places far less worthy of time and attention. Read Chapter XI. about the Grand View Trail, and Chapters XIV., XVII., XXVI., XXVII. and XXVIII., about the Mystic Spring Trail and the Topocobya Trail into Havasu Canyon. If Berry's Hotel is open at the Grand View Trail a few days can well be spent there, and arrangements can be made at the Bright Angel Hotel to be taken over to Berry's, or a letter to the latter will bring his stage for the purpose.

The accommodations at Bass Camp are of a more primitive character and only the traveller willing to "rough it" a little had better attempt to go there. Arrangements, too, must be made beforehand with Mr. W. W. Bass, who can be addressed at Williams, Arizona, at least two or three weeks ahead of the proposed trip. He will take all those who desire it on the following interesting trips:—

I. Down the Mystic Spring Trail, on to Grand Scenic Divide, Observation Plateau, or Mystic Spring Plateau.

II. Down Trail Canyon to the River.

III. Across the Canyon and River to the Shinumo.

IV. Across the Canyon to Point Sublime, or Dutton Point.

V. Down the Topocobya Trail to the Havasu Village and the Waterfalls.

The two first named excursions can be made by any ordinarily healthful lady or gentleman, but trips III., IV., and V. necessitate camping-out, and only those desirous of "roughing it" should attempt them.

What to Bring. If much tramping is done, stout, thick shoes should be provided. Ladies will find that short walking skirts are a convenience; divided skirts are preferable, but not essential, for the horseback journey down the zigzag trail. In winter, travelling caps and warm gloves are useful toilet adjuncts. Otherwise ordinary clothing will suffice. A strong field-glass materially assists in getting a satisfactory view of the farthest cliffs. A camera of ordinary size should be brought along, although it can only record little details of the Canyon — one should not expect satisfactorily to photograph the entire panorama.

Those who purpose doing any climbing will do well to provide themselves with a few Bent's crackers, the hard, solid ones that take up but little room and need a good deal of masticating. Even more useful is a small flask of Horlick's Malted Milk Tablets. These tablets are a wonderful help sometimes. One can be placed in the mouth and allowed slowly to dissolve, and it will both relieve thirst and hunger. They are far better than alcoholic stimulants and tide one over "hard places" without any subsequent evil results. From personal experience I can commend them highly. A little vaseline or cold cream and other emollients are good for sunburn and chafing after riding.

Stop-overs. Stop-overs will be granted at Williams and Flagstaff on railroad and Pullman tickets if advance application is made to train and Pullman conductors. Baggage may be stored in the station at Williams free of charge by arrangement with ticket agent. A large brick depot has been built at Williams, mainly for the better accommodation of Grand Canyon tourists.

Accommodations at Williams. Williams is a busy town of fifteen hundred inhabitants, lying out in the Arizona sunshine at the foot of protecting mountains, three hundred and seventy-eight miles west of Albuquerque on the Santa Fe Route. Here are located large sawmills, smelters, numerous well-stocked stores, and railroad division buildings. Hotel Tolfree, near the depot, is a new brick structure, containing thirty commodious guest-rooms. It is lighted by electricity, and nicely furnished throughout; rates, $2.50 per day, American plan. The Grand Canyon Hotel is a large brick edifice furnishing rooms only, with café annex. Accommodations may also be secured at the Haywood House for $2.00 a day, meals and room included.

Cost of Trip. The present round-trip ticket rate (rail and stage), Williams to Grand Canyon and return, is only $10.00. Adding $6.00 for two days' stay at Canyon Hotel, $2.00 for part of a day at hotel in Williams, $2.50 for probable proportion of cost of guide, $3.00 for trail stock, and the total necessary expense of the three days' stop-over is about $25.00 for one person: each additional day only adds $3.00 to the cost for hotel.

From Flagstaff. There are those who still prefer the ride around the San Francisco Mountains from Flagstaff to the Old (Hance) and Grand View (Berry) Trails, though, as I have shown in the book, both these trails may be reached by stage or other conveyance from the Bright Angel Hotel or the end of the railway track. During the winter months the snow makes the journey difficult if not hazardous, but in the summer, say from May or June to October, it is a glorious ride, and private conveyances, with or without driver, may be engaged at Flagstaff. The livery rates are reasonable. An automobile line is also in contemplation from Flagstaff, on a specially engineered and constructed road. There are good hotels at Flagstaff, where accommodations may be had at reasonable rates, and from where other pleasant and interesting excursions may be taken.

The officials of the Santa Fe Railway assure me that further information will gladly be furnished by them at any time, on any of these points, to those who will write to any of the following: Geo. T. Nicholson, Passenger Traffic Manager, The Atchison, Topeka & Santa Fe Railway System, Chicago; Jno. J. Byrne, General Passenger Agent, Southern California Railway, Santa Fe Pacific Railroad, and San Francisco & San Joaquin Valley Railway, Los Angeles, California; W. J. Black, General Passenger Agent, The Atchison, Topeka & Santa Fe Railway, Topeka, Kansas; W. S. Keenan, General Passenger Agent, Gulf, Colorado & Santa Fe Railway, Galveston, Texas.

It will afford me pleasure to answer queries for the readers of my book if they will enclose a stamped and directed envelope for reply. My permanent address is Pasadena, California.


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