THE STORY OF MAN AT GRAND CANYON

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When I first came to Grand Canyon National Park as a seasonal ranger-naturalist in 1960, the recataloguing of museum records was in progress, and I was given the historical specimens to process. There in the vault of the Visitor Center were the material evidences of Grand Canyon history; the journals and photographs of river explorers, the registers of pioneer hotels, the field notes of scientists, and even the hats of well-known rangers. The fascinating history of the region surrounded me, and when I was asked to write this history I was very pleased.

Others before me had made efforts to preserve historical information about Grand Canyon, and to these people I am grateful, particularly to William E. Austin, who searched old newspapers and interviewed pioneers who were still living in 1939, and to Margaret M. Verkamp, whose unpublished thesis, written in 1940, was the only serious attempt before this to write a history of Grand Canyon. I am indebted to Otis Marston, who has made a valuable effort to collect all the available diaries and journals of river runners on the Colorado, and has placed some of them in the Grand Canyon Library.

Emery C. Kolb was kind enough to share with me some of his vast store of Grand Canyon experiences, and Art Metzger, long the postmaster at Grand Canyon Village, did so as well. Edwin D. McKee, park naturalist for more than a decade, gave complete answers to some questions which occurred to me. Juan Sinyella of the Havasupai Tribal Council gave me the history of his people from tribal legends and stories, and several Hopi Indians, who prefer not to have their names mentioned, did the same. Jack Fuss, of Flagstaff, told me of
days at Bass Camp and of the 1924 deer drive. I must also thank Harvey Butchart, whose knowledge of Canyon topography is firsthand and encyclopedic.

The staff of the Museum of Northern Arizona, particularly Katharine Bartlett, were most helpful in giving me access to the Research Center collections. Also, the officials of the Sharlot Hall Museum allowed me to see some of the documents on file there.

Mr. Bill Bass, son of W. W. Bass, was kind enough to review my chapter on his father, and to suggest valuable revisions. Dr. Robert C. Euler of Prescott College did the same with the sections on the Indians.

My research would have been handicapped seriously without the patient help and wise suggestions of Louise M. Hinchliffe, librarian of Grand Canyon National Park’s excellent Research Library. It would have been impossible without the encouragement of a fine supervisor, Chief Park Naturalist Merrill D. Beal, who assigned me to this work and allowed me the latitude necessary for study.

I could not close this preface without expressing thanks to Dr. Richard M. Cameron of Boston University, who taught me the historian’s craft, and above all to my wife, Pamela, whose understanding and active help made possible the completion of this work.

To these people I assign the merits this work may have. The shortcomings and mistakes are entirely my own.

J. Donald Hughes
Grand Canyon, 1966
The Geographical Setting

History has taken strange turns in the Grand Canyon, that vast chasm worn by the Colorado River through the high plateaus of northern Arizona. The geological story of Grand Canyon's erosion extends backward perhaps 10,000,000 years, and the rocks through which it has been cut contain the remarkably complete record of more than 1,700,000,000 years. This book is concerned, however, not with this long duration of pre-human history, but with man in his dealings with the Canyon. Man has made an impact upon the Canyon; the Canyon also has deeply impressed and influenced man, and has made the currents of history flow in remarkable channels. Therefore, this chapter's discussion of Grand Canyon's geographical setting involves the effect of that setting upon man; upon Indian and Spaniard, explorer and trapper, empire-builder, miner and tourist, conservationist and exploiter.

The Grand Canyon itself is for man a geographical barrier, extending along somewhat more than 200 miles of the Colorado River. It is from 4 to 18 miles wide, and that distance is filled with a series of long, curving, almost unbroken cliffs which descend in gigantic, step-like terraces to the river, 3,000 to 6,000 feet below the canyon rims. Within the Canyon are towers, buttes and temples of mountainous size. Travelers through the region on foot, horseback or by automobile always have found it a formidable obstacle.

The Colorado River is one of the mightiest in North America. It drains an area of 242,000 square miles, with an average
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minimum annual flow of 7,500,000 acre feet of water. As a wild river, it was heavily silt-laden, carrying about 500,000 tons of sand and mud in an average day, along with large amounts of dissolved limestone. Thus the water of the Colorado in the Grand Canyon is hard and unpalatable, as well as being virtually inaccessible, and man has not used it to any extent in this very region where water is one of his most crucial needs.

The Colorado River in the Grand Canyon is much too swift and turbulent to provide man with a dependable means of transportation. A "young" or "immature" river, the Colorado drops 1,850 feet within the Canyon, passing over countless dangerous rapids in the course of its fall at a speed of from 2 1/2 to 12 miles per hour. Erosion is proceeding rapidly, and the river bed is filled with enormous hard-rock boulders which roll over and over during flood seasons. Navigating such a stream is at best a hazardous adventure. The use of the latent power of this falling water, as well as the use of the water itself, form a late chapter in the story of man's impact upon the Canyon.

Climate at the Grand Canyon varies with elevation. The North Kaibab Plateau, at an elevation of 8,000 to 9,000 feet, receives on an average 27 inches of precipitation including over 10 feet of snow each year. Summers are mild and winters severe, and human occupation on the North Rim has been limited generally to the summer months. The Coconino Plateau, which is 6,000 to 7,000 feet above sea level, receives almost 15 inches of precipitation, with about 60 inches of snow annually. Temperatures are quite warm in the summer and cold in the winter, while general dryness and the altitude combine to produce considerable daily variation of temperature. Within the Canyon, rainfall averages 7 inches per year, and in an average year there is no snow in the Inner Gorge. Temperatures often rise near 120° in the summer, and winters are mild. At an elevation of 1,600 to 3,000 feet, the Inner Gorge presents the climatic conditions of a true desert, and these conditions are magnified by the reflecting and confining canyon walls.

Natural vegetation varies with climate and soil conditions. The North Kaibab Plateau is covered by a rich forest of pine, aspen, spruce and fir, interrupted by broad meadows. The Coconino Plateau has a typical pinyon-juniper forest, with some
groves of ponderosa pine. Both the North and South rims are formed of Kaibab Limestone, a permeable rock in which no permanent springs occur. Water is found only in rare, intermittent tanks or pools. The soil is thin and poor. All these factors combine to make human agriculture on the plateaus marginal at best, although animals can be grazed in season on both rims, and lumbering is possible on the North Rim. Within the canyon, typical desert vegetation covers such relatively flat areas as the Tonto Platform, a shelf above the Inner Gorge. Sagebrush, mesquite, yucca, and cactus are among the more prominent plants. Here water is the limiting factor. Cottonwood trees grow near rare springs and permanent or intermittent streams. Where relatively level soil occurs near a dependable source of water, as at Indian Gardens and the flat alluvial floor of Havasu Canyon, man has been able to use irrigation for intensive agriculture in a strictly limited area.

The most useful forms of wildlife in the Grand Canyon region have been the mule deer and bighorn sheep. The former ranges the entire area, while the latter is confined to the rugged interior of the Canyon. The beaver, which inhabits the banks of the river and its permanent tributaries, was at one time much desired by white trappers. Other mammals used by man include the pronghorn antelope, formerly abundant near the South Rim, porcupine, rabbits, squirrels and smaller rodents. Predators are the mountain lion, bobcat, fox, wolf and coyote. Raccoon, badger, ringtail, skunks, and bats also occur. Individual bears, though not resident, sometimes make their way to the South Rim. Birds are abundant at the Canyon, and are too numerous to list here. Those of economic importance include the wild turkey, golden eagle, doves, quail, and grouse. Feathers of many species were used by the Indians. Reptiles at the Canyon include many species of lizards, among them the edible chuckwalla; and snakes, notably the rare Grand Canyon rattlesnake. Amphibians are present, and although a few native fishes occur in the Colorado, Indians of the region generally avoided fish as a food.

One aspect of the Grand Canyon's natural geographical setting is an intangible element, impossible to define. Man has always found the Canyon mysterious, filled with an awe-inspiring power, strangely attractive and repellent, beautiful and
charged with meaning. From the first Indians who placed votive figurines in its caves to the latest gasp of a visitor, man's reaction to the Canyon has involved his mind, heart, and spirit. Individual men have been unaware of or unimpressed by the Grand Canyon, but upon mankind as a whole it has exercised an aesthetic, scientific, emotional, and even a religious challenge. No historian of the Grand Canyon can fail to remark upon this unique effect of its primitive immensity, form, and color. These meanings that the Canyon has for man are responsible for much of its unusual history, and for its status today as a National Park.

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American Indians

HUNTERS

The story of ancient man in the Grand Canyon cannot be written fully until archeologists have made a complete and systematic study. At present, only the outline can be sketched. The earliest signs of human use of the Canyon are split-twig figurines, probably representing deer, pronghorn antelope and bighorn sheep, found in remote caves in the cliffs of Redwall Limestone. These figurines are 3,000 to 4,000 years old, according to the radioactive carbon dating method. There is no evidence to indicate that men made their homes in the caves in which the figurines were found. Evidently the makers were nomadic hunters. The Pinto culture, which flourished in the southwestern desert region about that time, may have produced the figurines. Projectile points and other stone tools of this culture have been found on Red Butte, not far from Grand Canyon.

Perhaps the figurines were placed in caves during ritual ceremonies to secure success in the hunt, as all of them were made in the same basic pattern, many were pierced by small spears made of sticks or mescal thorns, and most were cached. Arrow points were also found. A shrine-like structure of stone, objects resembling prayer-sticks with feathers attached, and a lock of human hair suspended by twine in one cave indicate that it had been used for magical or religious rituals. One can imagine a group of hunters, seeking out in their wanderings
caves and other mystical spots in which they could place their offerings, hoping that the symbolic slaying of small figurines would bring similar results in the hunt.\textsuperscript{7}

**BASKETMAKERS**

About 2,000 years ago, a people who had been hunters and gatherers adopted corn and squash farming from their neighbors. These people, called Basketmakers, often lived in caves and rock shelters.\textsuperscript{8}

By A. D. 600, the farming Basketmakers had learned how to make true pottery, baked for durability. Pieces of this pottery indicate that Basketmakers occupied the North Rim of the Grand Canyon. Some also lived on the South Rim, but it was primarily the territory of another people, the Cohonina.

Basketmakers often buried their dead in pits which had been used for food storage. They were a short-statured, long-headed people who wore sandals and were fond of personal ornaments, although their clothing was seldom more than a loin cloth. Pithouses in the later period replaced surface shelters. As their name indicates, these Indians made skillfully decorated baskets of twisted and coiled grass and yucca leaves. The baskets were often large and conical, with tumplines attached for carrying. Pinyon pine resin served to waterproof baskets. For a weapon, the Basketmakers possessed the atlatl, or spear-thrower. They used stone dart points and knives, stone metates and manos for corn grinding, and stone pipes. They painted designs in caves and overhangs.

**PUEBLOS**

New cultural developments changed Basketmaker Indian to Pueblo Indian about A. D. 700. The Spanish word “pueblo” refers to the villages or houses of many rooms that these people built of masonry and mud on the surface of the ground. Kivas, or special rooms for religious purposes, were built partly underground in the style of the older pithouses.\textsuperscript{9} Hard cradle boards flattened and broadened Pueblo skulls.

The Pueblo Indians developed several styles of pottery — banded, decorated, and painted in different colored patterns.
Made of split willow twigs, figurines found in Grand Canyon caves are 4000 years old, according to radiocarbon dating.
New stone and bone tools were made. Cotton was grown, spun and woven in beautiful patterns. Men wore kilts or breechclouts and women wore fringed aprons; both wore robes or blankets in cold weather. They domesticated the dog and the turkey.

Pueblo villages were independent, like Greek city-states. Rules and customs became highly developed in these societies. Reflecting their agricultural way of life, the Pueblos' religion sought rain in a dry land, and fertility for life-sustaining crops. Elaborate ceremonies included masked and costumed dancers. With pictographs and murals these artistic people decorated kiva walls, caves, and cliffs.

The Grand Canyon formed a western frontier area for the Kayenta, the westernmost of the Pueblo people. By A.D. 800, the Kayenta were building small houses on the North Rim, and by A.D. 900, on the South Rim also. These people farmed the fertile spots, building terraces and irrigation ditches. Many parts of the Grand Canyon itself, from rim to river, were occupied by the Pueblo Indians intensively for a brief period following A.D. 1050.\(^\text{10}\) This corresponded in time to the beginning of the "high" or "classic" period of Pueblo civilization, characterized by the erection of multistoried communal houses, some of them with hundreds of rooms.\(^\text{11}\) Although more than 500 Pueblo ruins have been found in the immediate area of the Grand Canyon, these never rivaled the size and grandeur of the Kayenta centers at Betatakin, Keet Seel, and Inscription House, or the other Pueblo metropoles at Mesa Verde and Chaco Canyon.

By A.D. 1150, the sites in the Grand Canyon had been abandoned, and by A.D. 1175 the Pueblo people had left the North Rim.\(^\text{12}\) The small ruin called Tusayan on the South Rim, occupied by about 30 people from A.D. 1200 to 1250, may represent a stage in the withdrawal from the Canyon area.\(^\text{13}\) This ruin is excavated and on exhibit to visitors, about 23 miles east of Grand Canyon Village.

Many factors possibly combined to drive the Pueblo Indians from the Grand Canyon. Hostile tribes moving into the region may have seriously threatened or actually attacked them. The people may have exhausted their own farmlands, firewood and wild game. Water probably became scarce as the climate became drier. It is known that a great drought took place A.D.
Ancestors of today’s Hopi dwelt, stored food in rooms.

1276 to 1299, helping to force the Pueblo people to evacuate many important centers and to build villages near permanent springs in the areas where they live today: the Hopi towns, Zuni and the Rio Grande pueblos.14

THE HOPI

The Hopi are among the modern representatives of the Pueblo peoples. Their villages and farms are about a hundred miles east of the Grand Canyon, located near permanent springs that seep from under the mesas. Old Oraibi, founded about A.D. 1150, is the oldest continuously inhabited town in the United States.15 The Hopi, through historical times, have maintained their old ways of life and traditional religion. The Grand
Canyon figures in Hopi religion as the symbolic place of man's emergence from the underworld, and the place through which the dead return thence.\textsuperscript{16} The Sipapu, or entrance to the underworld, is traditionally located in the canyon of the Little Colorado River about 4½ miles above the junction with the Colorado, and is marked by a bright yellow, circular spring about 10 feet in diameter atop a travertine dome about 90 feet in diameter.\textsuperscript{17} It has long been an object of pilgrimages for the Hopi. The Hopi also have made trips to a ceremonial salt deposit near the Colorado River, below the mouth of the Little Colorado.\textsuperscript{18} A trade route to the Havasupai brought the Hopi into another part of the Grand Canyon, as did hunting trips and expeditions to gather the sacred Douglas-fir.\textsuperscript{19} Ruins and sherds of Hopi pottery testify to the frequent visits of the Hopi to the Grand Canyon, as do their clan symbols carved upon the rocks.

THE COHONINA

From perhaps A. D. 600, the Coconino Plateau was occupied by an agricultural and hunting people called the Cohonina, a Hopi word probably meaning "people of the West."\textsuperscript{20} They were separated from their neighbors, the late Basketmakers and early Pueblo Indians, by the Grand Canyon. Although similar to their neighbors, the Cohonina seem to have lived a simpler life. They apparently did not ornament themselves, and their stone objects are of comparatively poor quality.\textsuperscript{21} Their buildings were of varying styles, mostly surface structures of wood or stone without indoor fires, and were occupied only for part of the year.\textsuperscript{22} They appear to have had neither ceremonial structures nor a special method for burial of the dead.\textsuperscript{23} They were fine potters who usually colored their gray ware with red hematite.\textsuperscript{24} They decorated rocks with petroglyphs.\textsuperscript{25}

By A. D. 900, the Cohonina had been forced west of Hermit's Rest by the pressure of Pueblo occupation on the South Rim.\textsuperscript{26} At present, archeology has not quite made clear what caused the eventual disappearance of the Cohonina.\textsuperscript{27} One theory holds that they were driven down into Havasu Canyon by the arrival of hostile peoples, and thus became the ancestors of the Havasupai.\textsuperscript{28} Another possibility is that they were driven
out or exterminated, and that invaders from the west were the ancestors of both the Hualapai and Havasupai.\textsuperscript{29}

**THE HAVASUPAI**

The Havasupai, the only Indian tribe living in Grand Canyon, are close relatives of the Hualapai, who live further west. Their name, which means “people of the blue-green water” in their own tongue, refers to the beautiful pools of Havasu (Cataract) Creek, the source of water for their canyon.\textsuperscript{30}

These people developed a double life. Warm weather was spent in the canyon, planting, irrigating the crops, harvesting corn, beans, squash and other vegetables and fruit, and gathering the wild mescal to be roasted.\textsuperscript{31} In winter, they wandered on the plateau, hunting and gathering wild fruits and nuts.\textsuperscript{32} They carried on trade with their neighbors, offering their own tanned leather, baskets, agricultural products, and red ochre cosmetics for Navajo and Hopi manufactures and Hualapai deerskins.\textsuperscript{33} Each August they invited their neighbors to the harvest dance, the great annual festival of the Havasupai.\textsuperscript{34}

Throughout recent centuries, the tribe has numbered about 200 individuals, almost all of whom have lived in Havasu Canyon, although it has been recorded that in past years some of the Havasupai lived in Indian Gardens in the Grand Canyon, where they built irrigation ditches and raised crops.\textsuperscript{35}

The homes of the Havasupai were surface shelters made of willow brush, mud and thatch, or logs.\textsuperscript{36} Like some other tribes, they built and used sweat lodges.

Havasupai religion was very simple, with little ceremony, and was centered about natural features and the cycle of crops. Apparently certain locations such as “sweet corn” on the canyon wall and the tall standing rocks called Wigleeva have special significance.

Today the Havasupai are adopting the white man’s culture and the old way of life is disappearing.\textsuperscript{37}

**THE PAIUTE**

The Kaibab band of Paiutes occupied the territory north of the Grand Canyon and south of Utah’s high plateaus.\textsuperscript{38}
They sustained themselves by hunting and gathering, and went where they could find food, traveling from place to place in an annual cycle. In the fall, they came up onto the Kaibab plateau to hunt deer and collect pine nuts. The name Kaibab means "mountain lying down" in the Paiute language, and the high plateau was regarded by them as common land, not the property of any one band or family group. The annual deer hunt caused early pioneers to name the plateau Buckskin Mountain.

The Paiutes lived in scattered family groups. They clothed themselves in loincloths or skirts made of cliff rose bark, and sometimes also in deerskin. Their houses were caves or rude brush shelters, occupied for short periods. They made baskets, but not much pottery. The fire drill, bow and arrow, and the throwing stick for rabbits were known to the Paiutes, as well as the mano and milling stone for grinding wild seeds. Their language was a Shoshonean dialect, distantly related to the Hopi tongue. Like the Hopi, they sometimes ventured into the Grand Canyon in search of rock salt and mescal, and sometimes crossed it to contact the Havasupai to the south. From their neighbors they learned some agriculture.

There were probably no more than 500 Kaibab Paiutes ranging the vast country to the north of the Grand Canyon. Their lands were taken by white settlers during the 19th Century, their men shot and children stolen, and like all the American Indians they suffered decimation by diseases brought in by the pioneers. Today there are about 130 living on a small reservation near Fredonia, Arizona.

THE NAVAJO

The Navajo Reservation today includes part of the Grand Canyon, but the Navajo people are relatively late arrivals in the area. The oldest known Navajo hogan, or house, in the Southwest is one in New Mexico which yielded a tree-ring date of A.D. 1541.

The ancestral home of the Navajo is in western Canada, with the other speakers of the Athabascan language. Like many other Athabascan tribes, the Navajo call themselves Dineh, which means "the People." Their legends speak of northern origins, they recognize many northern Athabascan words as
their own, and their hogans and some of their other artifacts are similar to those of the Indians of western Canada.\textsuperscript{41}

Apparently at some early date, perhaps about A.D. 1000-1400, the Apaches and Navajo, who were then the same people, migrated southward across mountains and plains.\textsuperscript{42} They came as nomads, hunting and raiding in large or small groups. Finally they settled in the Southwest near the established Pueblo Indians, whom they at times raided, taking food, slaves and wives. They adopted many Pueblo customs such as raising corn, weaving, and some religious ceremonies and myths.\textsuperscript{43} Their Pueblo neighbors called them \textit{Apaches de Nabahu}, or "enemies with cultivated fields," because the Navajo settled and raised crops, while their Apache relatives remained exclusively hunters and raiders.\textsuperscript{44} Navajo mobility and striking power were increased when contact with the Spanish settlers gave them horses and sheep.\textsuperscript{45}

Some Navajo trips for hunting, trading, and raiding in those early days may well have brought them to the Grand Canyon, but the first sure record of a Navajo visit to the Canyon is as late as A.D. 1863, when a group of them fled into the abyss to hide from Kit Carson.\textsuperscript{46}

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Discovery of the Grand Canyon
by
Garcia Lopez de Cardenas
September 1540

PROBABLE ROUTE

HOPI SALT TRAIL
Spanish Explorers, 1540-1821

THE CORONADO EXPEDITION

In September, 1540, white men for the first time saw the Grand Canyon. This event was an incident in the story of the search for the Seven Cities of Cibola by Francisco Vasquez de Coronado. It happened only 20 years after the conquest of the gold-laden empire of Mexico by Hernando Cortez. Since the riches of Mexico had surpassed Spanish imaginations, they might well have expected to find other rich cities in the North.

Nuno de Guzman, a rival of Cortez, had heard in 1529 from an Indian that seven rich cities lay in the northern interior of New Spain. This reminded him of the old medieval tale of the Seven Cities of Antilia, reportedly founded by seven Christian bishops who had fled westward across the ocean sea to escape the conquering Moslems. Guzman tried to find these cities, but he searched in vain.

Seven years later, four ragged survivors of an ill-fated expedition which Panfilo de Narvaez had made to Florida showed up in Mexico City and gave new life to the legend of the Seven Cities. These four were Alvar Nunez Cabeza de Vaca, two others named Dorantes and Castillo, and Dorantes' Negro slave, Esteban. They had come overland most of the way from Florida. They reported that in the lands beyond those through which they had passed there was a great nation, with riches of pearls and other gems, copper, gold and silver, and that there were large cities there.

The Viceroy of Mexico, Antonio de Mendoza, decided to
investigate these reports, and buying the slave Esteban, sent him as a guide for the Franciscan friar, Marcos de Niza, on a reconnaissance toward the north. After traveling for a month, Fray Marcos sent Esteban ahead as a scout, with instructions to send back a cross whose size would indicate the grandeur of what he found. Soon Esteban sent Indians carrying a cross as big as a man, with news of seven cities in the north, called Cibola, where the houses were two and three stories high, and so rich that their doors were inlaid with turquoise. Actually, this report is a fairly good description of the Pueblos of Zuni. Esteban proceeded to Cibola (Zuni), where his arrogant behavior provoked the Pueblo Indians to kill him. It is believed that the Pueblo Indians still impersonate Esteban as an ogre kachina (Chakwaina) in some of their dances. Fray Marcos received the report of Esteban’s death, and in his diary wrote that he went forward to a hill from which he could see Cibola, a city which seemed to him larger than Mexico City itself. It is at least possible that, not wishing to risk his life, he turned back and did not actually see Cibola, but reported what the Indians had told him as if he had seen it himself.

Encouraged by the friar’s report, Mendoza in the early part of 1540 sent northward a great expedition by land and sea. A small army of about 300 young Spaniards in armor, both cavalry and foot soldiers, and hundreds of Indian allies, was led by Coronado and included Marcos de Niza, Pedro de Sotomayor, the official historian of the expedition, and Pedro de Castaneda, who wrote 20 years after the expedition the only full account which survives. Large numbers of pack animals, cattle and sheep were taken with the army. Meanwhile, Hernando de Alarcon was appointed to take three ships and to proceed along the coast, maintaining contact with the army and assisting it.

After four months of difficult travel, Coronado reached Cibola and conquered it, but the Spaniards were disappointed bitterly at the lack of riches in the Pueblos of stone and mud. While at Cibola, Coronado was told of a larger group of seven cities off to the west, called Tusayan (Tucano or Totonteac, actually the Hopi Pueblos). In the middle of July, he dispatched Pedro de Tovar with a few soldiers to investigate. Returning after a month, Tovar reported that Tusayan was very much like
Cibola, but that the natives there had told him of a great river not far to the west, and of a land inhabited by people with very large bodies (probably they were referring to the Havasupai, who are generally much taller and heavier than the Hopi).\textsuperscript{10}

At the end of August, Coronado sent a force to find the river, under the command of Garcia Lopez de Cardenas. Cardenas, who is recognized as the discoverer of the Grand Canyon, was a tough, able soldier. He was the young second son of a Spanish nobleman, had married a distant cousin of Mendoza in Spain, and had come to America in 1535. After a series of responsible assignments under the Viceroy, he had been appointed to accompany the expedition to Cibola.\textsuperscript{11} Now he led his men to Tusayan, where some Hopis offered to guide him to the river. They traveled for 20 days from Tusayan through relatively dry country, arriving at the rim of the Grand Canyon late in September.\textsuperscript{12}

Castaneda reports the surprise of the men at finding the opposite bank of the river “three to four leagues” (8 to 10 miles) in air line distance away from them.\textsuperscript{13} The river itself appeared to be only six feet wide, although the Indians assured the Spaniards that it was much wider than that. Indeed, the depth and vastness of the Grand Canyon were not immediately apparent to Cardenas and his men. They spent three days searching for a way down to the river and finally, giving up the attempt, sent three light, agile young men to clamber down over the rocks. These men, the first white men to descend into the Grand Canyon, were Pablos de Melgosa, Juan Galeras and a third man whose name is forgotten. The three discovered unexpected obstacles. “What appeared to be easy from above was not so, but instead very hard and difficult.”\textsuperscript{14} They managed to get down only one-third of the way, perhaps to the top of the Redwall, from which point the river seemed as wide as the Indians had said. When they returned in the afternoon, they said that rocks which appeared from above to be about as high as a man proved when they reached them to be taller than the great tower of Seville. That tower, called the Giralda, is over 300 feet high.

The exact place where Cardenas and his men first saw the Grand Canyon is not known. Castaneda speaks of the
country there as "elevated and full of low twisted pines, very cold, and lying open to the north."¹⁵ The point on the South Rim which best fits this description seems to be in the area between Moran Point and Desert View, which is one of the higher sections of the South Rim, is covered with a low pinyon-juniper forest, and has a wide view across the Painted Desert to the north and northeast. No other area on the South Rim could be called "open to the north," as the North Rim rises more than a thousand feet higher in that direction. Grandview Point, which has been suggested as the place of discovery,¹⁶ is covered by a forest of tall, straight Ponderosa Pines. The region around Desert View is closer to the Hopi Pueblos (Tusayan) than any other part of the South Rim, although old Hopi trails touched the Canyon at points from Topocoba Hilltop to the canyon of the Little Colorado.¹⁷ The Hopis would naturally have led Cardenas along one of their own trails. The most likely of these seems to be the one which ran from Oraibi past Coal Canyon to Moenkopi, down Moenkopi Wash and across the Little Colorado near the present site of Cameron, along the base of Gray Mountain, thence parallel to the Grandview Monocline, where there is a line of natural water tanks. This route would have brought them to the Grand Canyon somewhere in the area indicated above.

The accounts of the exploration are vague and general as to distance and direction, so that there is really no way to tell exactly what parts of the Canyon rim Cardenas' men explored. Lack of water handicapped the Spaniards. Castaneda says it is for this reason that they went no further upstream, and that after four days exploring the Canyon's rim, they were warned by the Indians that a dry region lay ahead which would take several days to cross.¹⁸

So they returned, still guided by the Hopis. They saw on the way a spring where they gathered salt crystals, which seems to indicate that they traveled near the Little Colorado, where there are several salt deposits known to the Hopi besides the ceremonial deposit near the confluence of the Little Colorado and the Colorado.¹⁹ The ceremonial deposit cannot have been visited by the Spaniards, since it is next to the river, and the Hopis would not likely have taken the strangers to such a holy place. Indeed, the Hopis could have guided the Spaniards down
to the river, had they wished to do so. That they did not probably shows the attitude of the Peaceful People toward
the warlike invaders.

The Spaniards recognized that the river was the Tison (Firebrand) River, the name they then used for the Colorado.
Up this river Alarcon had recently tried to sail. The land and
sea sections of the expedition to Cibola never did make contact
with one another. Cardenas was, of course, much too far up­
stream to contact Alarcon. Another party of Coronado’s men,
under Melchior Diaz, reached the Tison only 75 miles above
its mouth in October, but they were too late. All they found
was a letter from Alarcon indicating that he had passed that
way.20 Alarcon had made two trips upstream in August and
September, with some help from the Yuman Indians. He
estimated that he traveled about 225 miles up the river. The
Indians told him that the white men had reached Cibola, but
he could not get any of his own men to attempt the overland
trip to contact Coronado.21

Coronado traveled on across the buffalo plains with his
army, in search of a new legend called Quivira. With the
failure of his expedition to find any lands worth conquest, the
Grand Canyon and its neighboring plateaus were left to the
Indians for another two centuries and more.

EXPLORATION AND COLONIZATION, 1540-1776

The Grand Canyon was not rediscovered by Europeans
for more than two and a quarter centuries after Coronado’s
expedition in 1540. New Spain had little interest in her
northern borderlands for 40 years after his failure to find the
seven golden cities, but missionaries and soldiers made a few
forays in the years immediately after 1580, and in 1598 New
Mexico was colonized by soldiers, settlers and Franciscan
priests, under Juan de Onate. The city of Santa Fe was founded
in 1609 by Pedro de Peralta. In 1629, five missions were
established in the Hopi towns of Awatovi, Oraibi, Shongopovi,
Mishongnovi and Walpi, and three Franciscan priests, Francisco
Porras, Andres Gutierrez and Cristobal de la Concepcion were
sent to supervise them, accompanied initially by 10 soldiers.22

The Pueblo Indians came to resent Spanish rule. They were
required to render unquestioning obedience and to pay a heavy tribute of handicrafts and other products, but most galling to them was the continuous effort of the Spaniards to stamp out their traditional religion and to compel them to become Christians. "Sorcery," as the Spaniards termed the observance of ancestral Pueblo ceremonials, was punishable by flogging, imprisonment, slavery or even death. In 1680, at the instigation of Pope, a native religious leader whose teachings combined some Christian doctrines with the Pueblo religion, all the Pueblos including the Hopi rose up together in revolt, slaughtering some of the Spaniards and driving away the rest. The reconquest of New Mexico was completed in 1695 by Diego de Vargas, but the Hopi never again submitted to Spain, and when one of their pueblos, Awatovi, admitted Spanish soldiers and a Franciscan priest, Father Garaycoechea, in 1700, the rest of the Hopi destroyed it.

Father Eusebio Francisco Kino, a Jesuit priest from the Tyrol, founded a chain of missions in the country of the Pima and Papago Indians. These missions included Tumacacori, founded in 1691, and San Xavier de Bac (near present Tucson), in 1692. During his 24 years in the missions of the region called Pimeria Alta, he traveled several times across the Colorado River to California, proving that California was not an island. Although the Jesuits were expelled from all the Spanish dominions by King Carlos III in 1767, Father Kino's work was continued by the Franciscan fathers in the missions he had founded.

FATHER GARCES: THE REDISCOVERY OF THE GRAND CANYON

While the first wave of Spanish explorers was composed primarily of military men and adventurers, the second wave to enter the Grand Canyon region was led by missionary priests. The Grand Canyon figures in their narratives as an impassable barrier on the routes they sought to follow, huge and inhospitable in aspect. Since conversion of the natives was a major purpose of their exploration, they encountered many of the tribes.

Francisco Tomas Garces was a Spanish missionary priest,
Wearing Franciscan robe, Father Garces stands as martyr in mural of a Mexican church. First to visit Havasupai Indians inside Grand Canyon, Garces was later slain by members of another tribe.
always eagerly searching for new Indian tribes so that he could give them the message of Christianity and gain their allegiance for his Church and his Spanish king. His base of operations was the mission of San Xavier del Bac, where he had been the resident Franciscan priest since 1768. He was also a great explorer who made several journeys into the vast country between New Mexico and California. In the course of one of these journeys he rediscovered the Grand Canyon.

Garces' fifth missionary journey began in October, 1775, when he set out with Juan Bautista de Anza on an expedition to found a mission and colony in Alta California. The settlement which became the city of San Francisco was founded by Anza in the eventful year of 1776, but Garces had left the expedition long before, to explore the Colorado River from its mouth to the upper canyons. He traveled alone, with Indian guides.

On June 20, 1776, he came into the deep canyon of the "Rio Jabesua" (Havasu or Cataract Creek) by traveling down a very precipitous trail. At one point he had to climb down a ladder of wood. He recognized the creek as a tributary of the Colorado. Its canyon, he noted, was so deep that the sun did not rise until 10:00 A.M., and its red soil, watered by the creek, grew trees, grass and rich crops. He marveled at the Havasupais' irrigation system of dams and ditches, and noticed that they had horses and cattle which they had traded from the Hopi, and which he thought had no doubt originally been stolen from the Spaniards. Always a people of peace, the Havasupai prevailed upon him to stay for five days of generous feasting.

**FATHER GARCES:**

**THE FIRST NAMING OF THE GRAND CANYON**

As a giver of names, Garces has particular importance in the history of the region, as the first writer to refer consistently to the "Rio Colorado," and the first European to name the Grand Canyon, although the name he selected did not pass into common usage.

He set out for the Hopi pueblos on June 25, 1776, going up another perilous trail (Topocoba Trail) onto a plateau covered with grassland, pinyons and juniper. On the following day
he reached the rim of the Grand Canyon, which he saw as an endless series of canyons, within which flowed the “Rio Colorado” (“Red River”) almost as if the mountains had been cut artificially for the river. He gave the Canyon the name “Puerto de Bucareli” (Bucareli Pass), after Antonio Maria Bucareli y Ursua, then Viceroy of New Spain, although Garces could see that it was a “pass” for the river alone, being far too difficult for human passage. The point at which Garces reached that spectacular view of the Grand Canyon can only be guessed; possibly it was near Grandview Point, and the “Puerto” itself would be the abyss between Cape Royal and Desert View. “I am astonished,” he exclaimed, “at the roughness of this country, and at the barrier which nature has fixed therein.” Like all the other early visitors, Garces was impressed primarily by the Canyon as a barrier, rather than the Canyon as scenery.

Crossing the Little Colorado, Garces went on through Moenkopi to the Hopi pueblo of Oraibi, where he was not made welcome, as he had been living among the Indian enemies of the Hopi, and possibly also because bitter memories of the Revolt of 1680 and the terrible retribution visited upon Awatovi for sheltering Spaniards were still alive. The Hopi would neither lodge nor feed him, or even take his gifts. He returned by the same route, arriving again in Havasu Canyon on July 9, where he was hailed with joy and given a six day feast. On his second visit, he referred to the Grand Canyon as “that calaboose (calabozo, prison) of cliffs and canyons.”

Garces returned to San Xavier del Bac by way of the Colorado and Gila Rivers. Five years later, during another mission journey to the lower Colorado River, he was beaten to death by Yuma Indians.

THE TWILIGHT OF SPAIN

The last great Spanish exploration in the Colorado basin took place in 1776, when two Franciscan fathers, Silvestre Velez de Escalante and Francisco Atanasio Dominguez, with Captain Bernardo Miera y Pacheco, tried to find a practical route between Santa Fe, New Mexico and Monterey, California. They traveled far to the northwest, reaching Timpanogotzis (Utah
Valley), and then, their purpose unachieved, returned to the south. They intended to cross the Colorado in that direction and visit the Havasupai, but the Paiute Indians told them that the country ahead held little water, and that they would not "be able to cross the river in this region because it ran through a tremendous gorge and was very deep, and had on both sides extremely high cliffs and rocks." Thus they were warned of the barrier which is the Grand Canyon. They turned to the east, searching for a crossing of the Colorado River which they found, after much difficult searching, on November 7 at a place since called "El Vado de los Padres" ("The Crossing of the Fathers") in Glen Canyon. Here they cut steps into the rock on their way down to the river, and forded the water at a shallow place. These steps and a memorial plaque were still visible until 1963, when the rising waters of the Lake Powell reservoir covered them. After the crossing, the Spaniards returned to Santa Fe by way of the Hopi pueblos. The Escalante-Dominguez expedition represents the high tide of Spain in this region. There is no evidence that any of its members actually saw the Grand Canyon.

In 1803 the Louisiana Purchase gave New Spain a new northern neighbor, the young United States of America. Zebulon M. Pike was sent with a small force to explore the new American borders in 1806, and he founded a fort on the upper Rio Grande, claiming he thought it was the Red River. He was captured and detained at Chihuahua for a time before being allowed to return to the United States. An expedition from Santa Fe under Facundo Melgares probed the American frontier in the same year.

On September 16, 1810, Miguel Hidalgo issued the first crucial call to Mexicans for independence from Spain. Between that date and the final winning of independence in 1821, Spain's energies were engaged in combatting a series of revolutions in Mexico, and no further explorations were undertaken in the north.

HOW THE COLORADO RIVER WAS NAMED

The Colorado River has borne many other names. The Havasupai Indians called it Hakatai, and the Navajos, Pocketto.
The Yuma name, Hahweal, means "red," and the term Buqui Aquimuti used by the Pimas means "Red River." The Paiutes north of the Grand Canyon called it Pahawep, that is "water deep down in the earth."

The first white man to visit the Colorado delta was Francisco de Ulloa in 1539. Hernando de Alarcon in 1540 called it the Rio de Buena Guia (Good Guide River) using the Mendoza family motto. Melchior Diaz gave it the name Rio Tison (Firebrand River) because he saw Indians near its mouth carrying torches, and this name was used by the Coronado expedition and others.

Juan de Onate, who was explorer as well as colonizer, reached the mouth of the Colorado River in 1604. Strangely enough, although he called it the Rio Grande de Buena Esperanza (Grand River of Good Hope), he can be given credit for first applying the name Rio Colorado (Red River) to a tributary of the main stream which is now called the Little Colorado River (Rio Colorado Chiquito). Apparently Onate's name for the smaller branch gradually came into use for the river itself during the following century, for by 1701 Eusebio Kino's map labeled the river Rio Colorado del Norte (Red River of the North), although Kino himself also gave it the name Rio de los Martires (River of Martyrs). "Colorado" was adopted widely by 18th-Century mapmakers. Francisco Garces was the first writer to refer to the river consistently as the Rio Colorado, and this became the accepted Spanish name, although Dominguez and Escalante called it the Rio Grande de los Cosninas when they crossed it in 1776, naming it after the Havasupai Indians, who were called Cosnina (Cohonina) by the Spaniards.

American pioneers in the Southwest often translated Rio Colorado into English; James Ohio Pattie called it the Red River, and others distinguished it as the Red River of the West, or of California. In his official report, John Wesley Powell referred to The Colorado River of the West, and the name "Colorado River" has been used generally and officially since the United States acquired the river and its basin in 1848.

Formerly there were considered to be two great branches of the Colorado River. The longer of the two, the Green River, rises in Wyoming. The other was called the Grand River, with
its source in the state of Colorado, but an act of Congress in 1921 changed the name of this branch to Colorado River.

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6Marcos de Niza, op. cit., p. 55.
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8Winship, op. cit., p. 378, gives a list of the variant numbers of horsemen and footmen in the expedition given by early sources. Counts vary from 250 to 350 Spaniards.
9Coronado, op. cit., p. 558.
10Castaneda, op. cit., p. 429.
12Castaneda, loc. cit.
14Castaneda, loc cit.
15Ibid.
16Bolton, op. cit., p. 139. Bolton’s description indicates that he may have meant to say “Desert View” instead of “Grand View,” which appears in his text.
12, no. 3, pp. 42-44, map pp. 40-41. This article contains an excellent description of the possible discovery routes.


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22 Forrest, Earle R., *Missions and Pueblos of the Old Southwest: Their Myths, Legends, Fiestas, and Ceremonies, with some Accounts of the Indian Tribes and their Dances; and of the Penitentes*, p. 213.


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American Trappers on Mexican Land, 1821-1848

THE MEXICAN PERIOD

The Republic of Mexico held her vast northern territories for little more than a quarter of a century. The problems of a struggling new nation kept her interest and energies concentrated on Mexico City and the south. In New Mexico and Texas, she encouraged immigration and trade and the results were disastrous for her, though perhaps inevitable. Men of the strong, expanding republic to the north began to move into the area while it was still part of Mexico, and political control was gradually relinquished to the United States.

Several American trappers and traders had tried to enter New Mexico in earlier days, but had met the determined opposition of the Spanish authorities. As soon as Mexico gained her independence, this opposition stopped, and in 1821 Captain William Becknell instituted the Santa Fe Trail, which became an important two-way artery of trade. Meanwhile, trappers pushed into the wilder lands in search of many pelts, but in particular, beaver. Beaver pelts were much in demand for gentlemen’s hats.

JAMES OHIO PATTIE

The name James Ohio Pattie has an honored place on the roll of pathfinders of the great American West, for he was one of the few who wrote down their experiences. A young man,
he left Iowa with his father, Sylvester Pattie, in 1824 and came out to New Mexico, where he trapped beaver on the Gila River and engaged in copper mining for a while. But the wanderlust held him, and by January, 1826 he had left his father and was traveling with a group of trappers including Ewing Young, Michel Robidoux, William Sherley “Old Bill” Williams, and Ceran St. Vrain.¹

The trappers fanned out over the wilderness; Pattie with a group which went from the Gila and Salt to the Red River (the Colorado), where they traveled upstream in search of beaver. At the end of March, they came to a place on the river “where the mountains shut in so close upon its shores” that they “were compelled to climb a mountain, and travel along the acclivity, the river still in sight, and at an immense depth below . . . .”² This, of course, was the Grand Canyon, which Pattie estimated to be not more than a mile wide and about 300 miles long. They traveled along the rim of the canyon for the entire distance through snow 12 to 18 inches deep. It was a depressing journey for Pattie. He had to eat the bark of shrubs, and the scenery did not impress him.

“We arrived,” Pattie recorded, “where the river emerges from these horrid mountains, which so cage it up, as to deprive all human beings of the ability to descend to its banks, and make use of its waters. No mortal has the power of describing the pleasure I felt, when I could once more reach the banks of the river.”³ Then, his provisions renewed with beaver and elk, Pattie went on from the Grand Canyon to other adventures in Colorado, California, and even in Mexico City.

MOUNTAIN MEN

Pattie’s route is fairly hard to trace; from his description one cannot even be sure whether he traversed the North Rim or the South Rim, though the latter is more probable. Even harder to trace are the paths of those who did not leave personal narratives.

Christopher “Kit” Carson is an example. In 1826, a boy of 16, he ran away from the saddler to whom he had been apprenticed and came to New Mexico, where he traveled widely. He joined one of Ewing Young’s trapping expeditions to Cali-
fornia in 1829, and saw the Grand Canyon on that trip, although he did not record his impressions.\textsuperscript{4}

Jedediah Smith once traveled down the Virgin River along the lower reaches of the Grand Canyon.

Another resourceful trapper who may well have seen the Grand Canyon was “Old Bill” Williams, an erratic trailblazer of the early 1800’s.\textsuperscript{5} He ranged much of the Old West, usually alone. He was apparently among the Hopi in 1827, and a town, a peak and a river in the Grand Canyon country still bear his name.\textsuperscript{6} He was typical of the tough, self-reliant breed of frontiersmen which survived and sometimes prospered in the wilderness.

WILLIAM HENRY ASHLEY, TRAPPER AND NAVIGATOR

A Virginian who came to St. Louis, William Henry Ashley was a frontier businessman who made a fortune through his Rocky Mountain Fur Company, and a Missouri politician. His employees included some of the famous names of western exploration: Jedediah S. Smith, David E. Jackson, William L. Sublette, James Bridger and others. On one of his expeditions to find new trapping grounds, in 1825, he tried to take a boat down the Green River, the longer fork of the Colorado. This was a dangerous attempt, as the river is narrow between perpendicular walls, and full of rapids. He was forced to abandon his voyage when his boat was wrecked in a cascade near the mouth of a stream now called the Ashley River. Thus ended the first known attempt by white men to pass through the upper Colorado canyons in a boat.\textsuperscript{7}

THE UNITED STATES GAINS THE SOUTHWEST

American pressure in the north of Mexico increased gradually until the whole region, about half of the land area of the Republic of Mexico, was added to the United States. Arizona and the Grand Canyon were considered to be part of New Mexico at that time; thus the United States gained a great natural wonder which was in a relatively unknown and unsettled wilderness.

Americans began to settle in Texas in 1821, and by 1836
they had rebelled and set up an independent republic, which was annexed by the United States in 1845. Americans were settling also in the Rio Grande Valley and in California.

War between the United States and Mexico began in May, 1846. The Army of the West under Stephen Watts Kearney captured Santa Fe in August, although a rebellion had to be put down in the following year. Meanwhile, California had fallen and Mexico itself had been invaded. On May 30, 1848, the treaty of Guadalupe Hidalgo was ratified, giving all of Alta California and New Mexico to the United States. The Territory of New Mexico, including Arizona and the Grand Canyon, was created in 1850.

The Mormons under Brigham Young had settled in Utah Valley in 1847, and commenced the exploration and colonization of that region, which Congress soon organized as the Territory of Utah. And in 1848, gold was discovered in California, providing the impetus for a tidal wave of migration to the West.

REFERENCES: American Trappers on Mexican Land

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4 Chittenden, op. cit., p. 976.
6 Peattie, *The Inverted Mountains*, p. 133.
7 Ibid., pp. 271-272.
Explorers, Soldiers and Saints,
1848-1872

FILLING IN THE BLANKS

When the United States acquired the Southwest, much of the new territory was unknown. Honest maps showed large blank areas, while other maps were filled with wild speculations. The course of the Colorado River had never been surveyed, and the Grand Canyon did not even have an established name.

The American government immediately felt a need to map the area, find routes across it, and establish strong points within it. Unruly Indian tribes and rebellious white men had to be put down, and safe passage to the gold fields of California and the new settlements had to be found. In order to do all these things, expeditions of military men were commissioned and provided with appropriations by the Congress.

Fort Yuma on the lower Colorado River was established in 1850. In the next year, Captain Lorenzo Sitgreaves explored a route from Zuni to Fort Yuma. Fort Defiance was founded in the Navajo Country in 1852.¹ In 1853-1856, Lieutenant Amiel Weeks Whipple surveyed a possible railroad route near the thirty-fifth parallel across present Arizona. In 1857-1858, Edward Fitzgerald Beale followed Whipple by surveying a wagon road from Fort Defiance to California along the general route of the present Santa Fe Railroad. His exploration is famous as the only one in the history of the American desert which was outfitted with camels.²
The Story of Man at Grand Canyon

IVES’ COLORADO EXPLORING EXPEDITION, 1857-1858

In the summer of 1857, the War Department authorized Lieutenant Joseph Christmas Ives to explore the Colorado River “to ascertain how far the river was navigable for steamboats.” Although George Alonzo Johnson and others had been operating steamboats on the lower Colorado since 1852, Ives decided to have a 50-foot stern-wheeler, “The Explorer,” manufactured in Philadelphia, tested upon the Delaware River, and shipped in sections to the mudflats at the mouth of the Colorado, where mechanics assembled her, correcting certain faults in her design. She was ready to churn upstream in December, 1857.

The trip was not an easy one. “The Explorer” was no match for the swift currents, rapids and shallows of the Colorado River. Many times she ran aground on sand bars, and the men had to tow her upstream with lines from the banks. After two months of hard labor, “The Explorer” steamed into Black Canyon, 350 miles above the Colorado’s mouth, near the present site of Hoover Dam. There, going full speed ahead, while the men were “eagerly gazing into the mysterious depths beyond . . ., the Explorer, with a stunning crash, brought up abruptly and instantaneously against a sunken rock. For a second the impression was that the canon had fallen in.” Some of the men were thrown overboard, and the boat was wrecked. Ives concluded that Black Canyon was the head of navigation.

Meanwhile, Johnson, incensed at the fact that he and his steamboat had not been hired by Ives or the Government, had already steamed up the river in the “General Jesup” (sic) with Lieutenant James L. White aboard, and found the head of navigation two months before Ives. White’s report, however, was never published. Incidentally, on his return trip, Johnson met Beale and his camels and helped to ferry them across the river.

Ives and his men abandoned the steamer at Black Canyon and explored on to the east, parallel to the Colorado River. Soon they came to the edge of what Ives called the “Big Canon,” and descended to the bottom along Diamond Creek. The expedition’s artists, F. W. von Egloffstein and H. B. Mollhausen, were the first to sketch the Grand Canyon, although their pictures greatly overemphasize the narrowness and depth of the Canyon.
In 1857, the steamboat "Explorer" was used by Lieut. Joseph Ives to navigate the lower 350 miles of the Colorado River.

and fail to convey an impression of its beauty. Egloffstein in particular seems to have sketched the landscape of nightmares. Ives himself was the first man to record his admiration for Grand Canyon’s scenery, writing, “We paused in wondering delight, surveying this stupendous formation through which the Colorado and its tributaries break their way.” He compared the Canyon, however, to the gate of hell, and noted in particular “the difficulty of getting out.”

Mr. Egloffstein discovered this difficulty when he attempted to descend an old ladder into Havasu Canyon. The fragile rounds of the ladder broke, and he was precipitated into the canyon. According to Ives’ report, Egloffstein visited the Havasupai village while the rest of the white men waited above, and
he was rescued from the gorge when the men tied together their gun slings and pulled him out.\(^9\) He was probably the first white man to visit the Havasupai in more than 80 years. Whether his ladder was the same as that descended by Padre Garces is not known.

Dr. John Strong Newberry, a geologist, accompanied the expedition and has the honor of being the first scientist to study Grand Canyon, “the most splendid exposure of stratified rocks that there is in the world.”\(^{10}\)

Ives’ descriptions of the Canyon seem to combine Newberry’s geological explanations with something of Egloffstein’s exaggerated vision. “The extent and magnitude of the system of canyons,” he wrote, “is astounding. The plateau is cut into shreds by these gigantic chasms, and resembles a vast ruin. Belts of country miles in width have been swept away, leaving only isolated mountains standing in the gap. Fissures so profound that the eye cannot penetrate their depths are separated by walls whose thickness one can almost span, and slender spires that seem to be tottering upon their bases shoot up thousands of feet from the vaults below.”\(^{11}\)

But Ives, like Pattie, did not envision any possible human use for the Grand Canyon. “The region,” he wrote, “is, of course, altogether valueless. It can be approached only from the south, and after entering it there is nothing to do but leave. Ours has been the first, and will doubtless be the last, party of whites to visit this profitless locality. It seems intended by nature that the Colorado river, along the greater portion of its lonely and majestic way, shall be forever unvisited and undisturbed.”\(^{12}\) He failed to see that the very majesty which impressed him would draw millions of others to the rim of his “Big Canon.”

Lieutenant Ives continued on across the Little Colorado River, through the country of the Hopis and Navajos, to Fort Defiance. He produced a monumental report accompanied by Egloffstein’s startling illustrations and a rather sketchy map which marked the general location of the “Big Canon of the Colorado River” in large letters. This report was published by the War Department in 1861.
The major battles of the Civil War were fought in the East, but Arizona was greatly affected by that violent spasm of the American body politic. All federal soldiers were withdrawn from the area in 1861 to serve in the impending battles, and the forts were abandoned. The immediate results were two: the hostile Navajos and Apaches descended on the white settlers, killing many and driving out others; and the citizens of the Tucson area, secessionist in sympathy, proclaimed Arizona a territory of the Confederacy.\textsuperscript{13}

Union troops from California entered Arizona in May, 1862, and after a brief skirmish, drove out some Confederate Texan soldiers and raised the stars and stripes again over Tucson. Congress divided Arizona from New Mexico and made it a separate territory in a bill signed by President Abraham Lincoln on February 24, 1863. In the following year, the first governor, John N. Goodwin, arrived and founded the capital city, which was named Prescott after the famous American historian, William H. Prescott (1796-1859), author of The History of the Conquest of Mexico.\textsuperscript{14} Prescott is about a hundred miles south of the Grand Canyon, and is county seat of Yavapai County, which originally included the Grand Canyon.

Meanwhile, the United States was discovering that the hostile Indian tribes would have to be pacified if Arizona and New Mexico were to remain open to white settlement. In June, 1863, after a successful campaign against the Mescalero Apaches, Christopher “Kit” Carson was sent to round up the Navajos and bring them to a reservation at Bosque Redondo (Fort Sumner), New Mexico. He rebuilt the abandoned Fort Defiance, and with the aid of other Indian tribes, began to destroy the Navajo crops and herds. Faced with starvation, the Navajos fled to isolated hiding places. Some of the western Navajos hid within the Grand Canyon, led there by the warrior Manuelito; others were sheltered by the peaceful Havasupai.\textsuperscript{15} Carson rounded up a large group in Canyon de Chelly, and gradually most of the Navajos came in to surrender at Fort Defiance and were led away into captivity. Others remained at large in the Grand Canyon region, often raiding and provoking incidents with settlers in southern Utah.\textsuperscript{16} After
five years at Bosque Redondo, the Navajo signed a peace treaty with the United States, and were allowed to return to their traditional lands. The reservation then established was expanded to include sections of the eastern end of the Grand Canyon in 1900, 1918 and 1930.\textsuperscript{17}

**JAMES WHITE’S ORDEAL**

On September 7, 1867, a raft was pulled out of the Colorado River at Callville, Nevada, with a watersoaked, sunburned, starving, half-dead man on it. When he was revived enough to speak, he gave his name as James White and began to tell the story of a long trip down the river through the rapids, lashed to a makeshift raft.

The question which has remained unanswered about White’s journey concerns the point at which he entered the river. Was it above or below the Grand Canyon? White himself did not know. Wild claims were made on his behalf, stating that he began above the junction of the Grand and the Green, and these claims caused men like Powell and Stanton to deny that he passed through the Grand Canyon at all.

White’s journey may be reconstructed in its general outlines from the evidence which he gave, although we may never be able to pinpoint his route. White had left Colorado City, Colorado in the spring with George Strole and Captain Charles Baker to prospect for precious metals along the San Juan River, a tributary of the Colorado. He said that he traveled down the San Juan River from the Mancos, where he had seen the Mesa Verde cliff dwellings. White and the others traveled along the San Juan River for a while, then left it and reached another canyon tributary to the Colorado. This tributary canyon could not be crossed. This geographical description would put White in the Glen Canyon country. At this point, Indians attacked them, killing Baker. White and Strole fled down the tributary canyon to the Colorado, where they constructed a raft of cottonwood logs and floated downstream for four days on very quiet water. No place on the upper Colorado except Glen Canyon had this much smooth water, free of rapids. He described the rocks here as “light yellowish sandstone.”\textsuperscript{18} In Glen Canyon, the rocks are sandstone of yellow to reddish color. After four
days, the first rapid was struck, which upset the raft. From this point on, there was a series of rapids which were constantly upsetting and breaking the new and larger raft which they had built, and Strole was washed overboard and drowned.\textsuperscript{19} White tied himself to the raft and continued down the river, beaten by terrible rapids in which almost all his food was lost, and he was reduced to eating his knife scabbard.\textsuperscript{20} This seems to be a good description of the river in Grand Canyon, where one rapid succeeds another almost continually. There was one very big rapid which stood out in White's memory, possibly Lava Falls. His description of Grand Canyon is of walls which rise several hundred feet and then "flare out," an accurate description of the Inner Gorge. The rocks here, he said, were "darker, a kind of greyish rock with white streaks running through it."\textsuperscript{21} Anyone who has seen the Vishnu Schist with its granitic intrusions will agree with his description of this rock. After passing through the Grand Canyon, he was both robbed and fed some mesquite bread and the hind quarters of a dog by Indians. The time he took in his journey, traveling all day almost every day and stopping at night, was according to his own account about 14 days, which happens to be about the same time taken by modern river trips over a comparable distance, although they do not travel during all the daylight hours.

Many, particularly Powell, Stanton, Stone and other early river runners, have objected to White's story on the grounds that it was simply impossible for a man to go through the Canyon on a raft, when they had found it so difficult in boats. Today, however, river runners have found that the flexibility and shallow draft of a rubber life raft will allow it to ride the crest of waves and avoid rocks which might smash a boat. Of course, a cottonwood raft would have more trouble than a rubber one, and White does say that his rafts were constantly overturned and at least twice smashed by the rapids.\textsuperscript{22} The year 1867 was a record flood year.\textsuperscript{23}

Taking into account White's descriptions of rapids, cliffs, other landmarks, and time and distance, as well as the condition of the man when he was pulled out of the river, it seems most likely that he entered the river somewhere in Glen Canyon, and was at its mercy through all of the rapids in the Grand Canyon. Thus to James White most probably belongs the title of "first
through the Grand Canyon," but it was a voyage which he did not plan or intend. He did not know where he started, where he went, or the significance of his journey. His feat by no means rivals the careful scientific expeditions by boat of Major John Wesley Powell beginning two years later, nor does it deprive the voyage of 1869 of any of its daring or renown.

JOHN WESLEY POWELL

The greatest name in the history of the Grand Canyon and the Colorado River is that of John Wesley Powell. His were the first scientific expeditions to go down the Colorado River by boat through the Grand Canyon, observing and recording, filling in the blank spaces on the map.

In 1869, the Colorado River in the Grand Canyon was still almost unknown. Its course was uncertain, its character guessed at. Stories were told of giant waterfalls and places where the river traveled underground. One of the nation’s greatest rivers was yet to be traveled and charted. Powell did both — twice.

Joseph Powell was a Welsh-English tailor and a Methodist lay preacher who came to America with his wife and became a frontier circuit rider. He named his second son, born in 1834, after John Wesley because he hoped that he would be called to the ministry. But Wes grew up to have interests in geology and exploration instead. He was tutored and taken on excursions by George Crookham and William Mather, Illinois naturalists and geologists.

During the 1850’s, Powell taught school, attended several colleges without graduating, made scientific collections and became a curator of the Illinois State Natural History Society. He also learned how to handle a boat in trips down the Mississippi, Ohio, Illinois and other rivers.

In May, 1861, John Wesley Powell answered President Abraham Lincoln’s call for volunteers in the United States Army. By June, he was a Lieutenant. He planned and directed the fortification of Cape Girardeau, Missouri. In November, 1861, he married Emma Dean in Detroit while on leave. He received a commission as a captain of artillery. Powell’s battery fought at the Battle of Shiloh, where on April 6, 1862, he received a severe wound in his right arm which required
Major John Wesley Powell, one-armed Union veteran of the Civil War, near Flagstaff, Arizona, in 1891. Powell gave Grand Canyon its name during his first boat trip down the Colorado in 1869.

amputation. He was back in action at Vicksburg after little more than a year, and later accompanied Sherman on raids into Georgia. He was mustered out of the service with the rank of Major in January, 1865.

After the war, Powell became professor of geology at Illinois Wesleyan University and Illinois Normal University, and curator of the Illinois State Natural History Society's museum. Under sponsorship of these institutions, and with
The Story of Man at Grand Canyon

some federal support, he carried on explorations in the Rocky Mountains and the headwaters of the Grand and Green rivers in Colorado and Wyoming. He began his study of Indian languages, customs and religion. There, too, he conceived the dream of exploring the canyons of the Colorado River, because "the Grand Canyon of the Colorado will give the best geological section on the continent."[26]

Powell gathered all the available information on the river from Ives’ report with Newberry’s geological observations, and from men who had seen the river and boated on it. He even interviewed James White, but that man’s confused remembrances were of no help to him. He tried running the swift White River himself. He gained support from educational institutions, railroads issued free passes for his men and equipment, the Smithsonian Institute lent scientific instruments, and Congress authorized army posts to issue rations and supplies.[27]

Powell was convinced that his proposed expedition would succeed, and decided to begin in 1869 from the Union Pacific Railroad’s bridge over the Green River in Wyoming. He designed boats and had them built in Chicago. Three heavy 21-foot boats of white oak and a lighter, 16-foot pilot boat of white pine were constructed with watertight compartments fore and aft, and equipped with a pair of oars each. They were packed with supplies sufficient for 10 months, with tools for repairs, and many weapons for hunting and for defense against hostile Indians, and some trade articles. Powell named the light boat the “Emma Dean” after his wife. Two of the heavy boats were called, respectively, the “Maid-of-the-Canyon” and “Kitty Clyde’s Sister,” and the last was left with “No-Name.”

The men who set out with Powell in the four boats were his younger brother Walter, a captain in the Union army who had suffered extremely in Confederate prisons; a Colorado editor, Oramel Howland and his brother Seneca, a Union veteran of Gettysburg; Jack Sumner, Union veteran, Indian trader and guide; Bill Dunn, a real Western mountaineer and trapper of the old school; Billy Hawkins, another mountaineer and Union veteran who became cook of the expedition; Andy Hall, a bright and brave Scottish lad of 18; Sergeant George Bradley, a Union veteran of Fredericksburg for whom Powell had obtained a discharge so that he could participate; and Frank
Goodman, a talkative English adventurer who showed up unexpectedly at Green River. A certain Captain Samuel Adams showed up too, with dubious credentials, and was sent packing. The members of the expedition were to share in taking measurements of longitude, latitude, river distance and direction, elevations and canyon altitudes. Powell, of course, took the major responsibility for these, and served as pilot in the lead boat, the "Emma Dean."\(^{28}\)

Powell's expedition left Green River on May 24, 1869. They went swiftly downstream through the rapids, naming canyons and making observations along the way. On June 8, in a place later called Disaster Falls, the "No-Name" was smashed in a rapid and lost with 2,000 pounds of provisions. Her crew, the Howland brothers and Goodman, were saved narrowly from drowning. The barometers and a jug of whiskey were salvaged from the wreck.\(^{29}\)

In late June, Powell stopped and went overland to the Uinta Indian Agency to obtain a few inadequate provisions. Goodman, discouraged after his near-drowning, left the expedition there. Rumors that Powell and his party had all been drowned had spread, and at least two imposters had claimed to be the only survivor. A letter from Powell to his wife temporarily quieted these rumors.

The nine remaining men continued on through the confluence of the Grand and the Green, which they passed on July 16. Food and water were problems for them by this time. The bacon and flour were bad and most of the other provisions were short, though the men eked them out by shooting mountain sheep and deer, and catching fish. The muddy Colorado, "too thin to plow and too thick to drink," did not make the best thirst-quencher, so the men tested the tributary streams for potability. On July 28 they reached a creek "as filthy as the washing from the sewers of some large, dirty city, but stinks more than Cologne ever did."\(^{30}\) Disappointed, Powell named it the Dirty Devil, a name which stuck in spite of his later attempt to rename it the Fremont River.

Failing to see the Escalante River, the expedition located the mouth of the San Juan River on July 31, and that of the Paria on August 4. More rapids followed in Marble Canyon, requiring exhausting work in the white water and in portages.
On August 10, the men were at the mouth of the Little Colorado River in the Grand Canyon. Reflecting upon his entry into the Grand Canyon, Powell wrote,

"We are three-quarters of a mile in the depths of the earth, and the great river shrinks into insignificance, as it dashes its angry waves against the walls and cliffs, that rise to the world above; they are but puny ripples, and we but pigmies, running up and down the sands, or lost among the boulders. We have an unknown distance yet to run; an unknown river 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."\textsuperscript{31}

Soon the great walls of the Granite Gorge, the Inner Gorge of the Grand Canyon, closed in around them. Their provisions were reduced to flour, coffee and dried apples, and they could no longer hunt for mountain sheep or deer. "The walls, now, are more than a mile in height," wrote Powell, "A thousand feet of this is up through granite crags, then steep slopes and perpendicular cliffs rise, one above another, to the summit. The gorge is black and narrow below, red and gray and flaring above, with crags and angular projections on the walls, which, cut in many places by side canons, seem to be a vast wilderness of rocks. Down in these grand, gloomy depths we glide, ever listening, for the mad waters keep up their roar; ever watching, ever peering ahead, for the narrow canon is winding, and the river is closed in so that we can see but a few hundred yards, and what there may be ahead we know not; but we listen for falls, and watch for rocks, or stop now and then, in the bay of a recess, to admire the gigantic scenery."\textsuperscript{32} The "Grand Canon," as Major Powell called it, had the worst rapids he had seen. Oars were splintered and boats badly damaged. Some of the notes and maps were lost.

The expedition stopped on August 15 at the mouth of a clear, cold stream which entered the gorge from the north. This the Major was to call the Bright Angel in compensation for the Dirty Devil, and thus give a most distinctive name to one of the Grand Canyon's features, a name which came originally from Milton's \textit{Paradise Lost}. Here the men repaired the boats,
made an oar, and caught fish. Powell made observations: "While
the men are at work making portages, I climb up the granite to
its summit, and go away back over rust colored sandstones and
greenish yellow shales, to the foot of the marble wall. I climb so
high that the men and boats are lost in the black depths below,
and the dashing river is a rippling brook; and still there is more
canon above than below. All about me are interesting geological
records. The book is open, and I can read as I run." 

He also found Indian ruins.

The trip from this point was almost continuous rapids.
"The boat glides rapidly, where the water is smooth, or, strik­ing a wave, she leaps and bounds like a thing of life, and we
have a wild, exhilarating ride . . . The excitement is so great
that we forget the danger until we hear the roar of a great
fall below . . ."  " . . . the rushing waters break into great
waves on the rocks, and lash themselves into mad, white
foam."  " . . . we have to make another portage." Cold rain
drenched them and produced cataracts of muddy water; then
the sun came out and the extreme August heat of the Inner
Gorge baked them. They found an Indian garden, which they
raided, adding a little green squash to their diet.

Powell referred to the Canyon as "our granite prison." On August 27, the men were discouraged by the sight of a
particularly bad rapid ahead. At this point, Oramel Howland
asked Powell that the expedition abandon the river and hike
out north to the Mormon settlements. Powell refused after a
difficult night of decision, and most of the men backed him,
but the Howland brothers and Bill Dunn were determined to
leave, as to go further downstream seemed suicide to them. The
last of the flour was baked into biscuits and divided equally,
and the deserters were given weapons, ammunition and copies
of Powell's diary and notes.

The three men who left the rest at what is now called
Separation Rapid proceeded northward to the plateau, where
they met a group of Paiute Indians. Apparently these Indians
mistook them for some prospectors who had mistreated and
killed one of their squaws. At any rate, 1869 was a year of
Indian trouble along the Mormon frontier. The three men
were killed. Powell found out the manner of their deaths when
he visited the Shivwits Paiutes with Jacob Hamblin in the following year.

Meanwhile, Powell and his five faithful companions abandoned the damaged "Emma Dean" and in the remaining two boats made their way through the difficult rapids and out into quiet water in one day's time. They had gone all the way through the Grand Canyon. Soon they reached a Mormon settlement at the mouth of the Virgin River, where three men were seining the Colorado for wreckage of the "lost" Powell expedition.

The Major and his brother left the river there, returning east through Salt Lake City. The other four went on down the already well-known lower river to Fort Yuma, where Sumner and Bradley left. Andy Hall and Billy Hawkins went all the way to the Gulf of California, and thus deserve the title of "first down the Colorado River from Wyoming to Mexico." For the scientist, the purpose of the expedition had been fulfilled when he reached known country again, but for Andy and Billy, it was the adventure of once in a lifetime.

Powell returned to "civilization" with much new geological and geographical knowledge, but he had lost many of his notes, and additional exploration was needed. He planned a second river voyage, this one to be broken into sections, with supply points located along the river. This trip, to be taken in 1871-1872, was to be a full survey of the river and its surroundings, and it received government support.

During 1870, Powell explored the plateaus north of the Grand Canyon to locate routes of supply for his second river expedition. He hired Jacob Hamblin, the Mormon missionary to the Indians, as guide and interpreter. Hamblin induced the Kaibab Paiute Indian chief, Chuar, to locate springs and trails for Powell, including one down to the Colorado River in the Grand Canyon near Toroweap, and also guided the Major to the Hopi towns.38

The second Colorado River expedition left Green River, Wyoming, on May 22, 1871. The members were Powell's brother-in-law, Almon H. Thompson, the geographer; Clem Powell, the Major's young cousin; Frank Richardson, who left the party on June 8; Fred Dellenbaugh, a young artist and writer; S. V. Jones, mathematician and surveyor; John F.
Steward, amateur geologist; Francis M. Bishop, surveyor and teacher; Andy Hattan, the cook; and E. O. Beaman, the official photographer of the expedition, who was later replaced by Jack Hillers. The boats, named the “Emma Dean,” “Nellie Powell” and “Canonita,” were of improved design, and better supplies were packed. The Major sat in a sturdy armchair atop the “Emma Dean,” from which he could signal the following boats. On October 23, after many rapids and some delays, they reached Lees Ferry and went into winter camp at Kanab.

After explorations in the area north of the Grand Canyon, the expedition started down the river again, leaving Lees Ferry on August 17, 1872, in the “Emma Dean” and the “Canonita,” abandoning the “Nellie.” In a week they were in the Grand Canyon, where the wild rapids of a high river constantly threw the men into the water. Since maps and notes survived from 1869 for the lower Grand Canyon, and because of the dangers ahead, the second expedition left the river at Kanab Creek on
September 8. Thus the second exploration along the Colorado River in the Grand Canyon was finished. Jack Hillers, its photographer, has the distinction of being the first man to take photographs of the Grand Canyon.

During the summer of 1872, Powell explored the Kaibab Plateau and the North Rim of the Grand Canyon with Professor Harvey C. DeMotte, after whom DeMotte Park was named. The plateau was then being used for grazing and logged by the Mormons, Levi Stewart and others, and was generally known as the Buckskin Mountain. Kaibab, meaning "a mountain lying down," was the Paiute name, and was officially adopted by Powell.

After 1872, Powell continued his studies of American Indian customs, languages and myths, particularly those of the Paiutes north of the Grand Canyon. He was founder and first director of the Bureau of American Ethnology, which preserved and published Indian lore. He also continued his geological and geographical survey work in the Colorado River basin. This work was placed under the new United States Geological Survey, which Powell had worked hard to bring into being. He was the second director of the Geological Survey, serving from 1881 to 1894. His unusually acute ideas on the importance of water, irrigation and a federal policy for land use in the West were a half century ahead of their time, and did not find immediate acceptance. Indeed, they produced his removal from the directorship of the Geological Survey. He died in 1902, after receiving many honors and awards.

HOW THE GRAND CANYON WAS NAMED

The nearby Indian tribes had names for the Grand Canyon. The Havasupai refer to it as the Rough Rim, and the Hopi know it as the place of emergence from and descent into the Underworld. The Paiutes knew of water "deep down in the earth."

Cardenas’ expedition apparently did not name the Canyon which they discovered; Castaneda refers to it only as a "barranca" or large canyon. Garces in 1776 was the first white man to name it, calling it Puerto de Bucareli, or Bucareli Pass, that is, he regarded it as a pass for the river, not for human
13 Bucareli was the Spanish viceroy in Mexico.

Pattie in 1826 made reference only to "these horrid mountains."14

In the early period of American exploration, it was variously called the Big Canyon, the Great Canyon, or the Grand Canyon. Ives usually referred to it as Big Canon, canon being merely the Spanish spelling of Canyon, a word which has been adopted into English from Spanish. It appears as Big Canon on Ives' map.15

The first map containing Grand Canyon as a specific place name for this feature is the one accompanying General William J. Palmer's railroad survey report in 1868.16 By Palmer's time, this name was widely used.

The honor of the first consistent and authoritative use of the name "Grand Canyon" belongs to Major John Wesley Powell, whose definitive and widely read reports caused the name to be adopted permanently after 1869.

JACOB HAMBLIN

An explorer of the Grand Canyon region and a peacemaker among the Indian tribes, Jacob Hamblin was a quiet-spoken missionary of the Mormons.17 Brigham Young, the Mormon leader, sent Hamblin to scout the area around the Colorado River, work among the Indians, and report on movements of expeditions sent out by the government in Washington.

The settlements in Utah were prospering, but in 1857 there was a brief clash between the United States government and the Mormons. After some guerilla resistance by the Mormons, federal troops were stationed in Utah and Brigham Young, the first governor of the Territory of Utah, was replaced.18

In March, 1858, Hamblin saw the Ives expedition in the Mojave country along the Colorado, and believed that it had been sent to spy out a way into Utah from the south.19 Later the same year, he crossed the Colorado River at the Crossing of the Fathers on his way to visit the Hopi.

Hamblin made several trips in an attempt to establish a mission among the Hopi; in the course of these trips he crossed the Colorado River several times, locating the later sites of Pierces Ferry and Lees Ferry. In 1862, he made the first recorded
circle trip around the Grand Canyon, and in the following year repeated that journey, with a visit among the Havasupai, deep inside the Canyon.\textsuperscript{50}

In the period 1865-1870, there were clashes between the Mormons and the Indians in southern Utah, particularly the Navajos but also the Paiutes. Hamblin, a man whose honesty and courage the Indians always respected, helped make peace with them. September, 1870, was an eventful month for him, for in it he assisted at the official founding of the city of Kanab, 70 miles north of the Grand Canyon, the establishment of Lees Ferry and the visit of Major John Wesley Powell. Powell engaged Hamblin as guide through much of the region north and east of the Grand Canyon, where he wished to survey supply routes for his second river voyage, investigate the deaths of the three men who had deserted his first trip, and study and photograph the Indians. Hamblin’s knowledge of the country and tribes was valuable to Powell.

Doubtless Hamblin knew the North Kaibab Plateau and possibly also the North Rim country. The place on the Kaibab known as Jacob Lake is named after him.\textsuperscript{51}

Hamblin’s many attempts to found a mission among the Hopi were unsuccessful, but he located a site near Moenkopi which later was occupied by Mormon settlers and called Tuba City after a chief of Oraibi whom Hamblin had befriended.\textsuperscript{52}

LEES FERRY

There are only a few places in the Grand Canyon region where the Colorado River can be approached and crossed with relative ease. The most famous of these is the crossing near the mouth of the Paria River which was located by Jacob Hamblin, probably in 1864, and used by Powell’s second expedition as a stopping place and supply point.

John Doyle Lee, a Mormon polygamist, moved there in 1871, and established a ferry. Although his name for the place, suggested by one of his wives, was Lonely Dell, it has been called Lees Ferry ever since. Lee chose Lonely Dell as a place of residence because he was fleeing from the authorities who were investigating his part in leading the massacre of a group of pioneers by Mormons and Indians in Mountain Meadows.
several years before. He was arrested on this charge in 1874, convicted and executed in 1877, although no one else involved in the massacre was ever brought to trial.

The first boat used by Lee as a ferry was most probably a rough scow called the "Canon Maid," which had been constructed by Powell in 1870 to cross the river on his way from Kanab to the Hopi towns, and was repaired by Lee to carry a band of Navajos across the river on January 18, 1872. Powell had also cached two boats at the mouth of the Paria at the end of the first leg of his second river expedition in 1871. On his return to begin the second half of that journey in August, 1872, Powell found the "Emma Dean" out of her cache and the "Nellie Powell" in a damaged condition, although she was in the shelter where he had left her. These boats had been used by travelers who had not been too careful with them, particularly the journalist John Hanson Beadle, and perhaps also by Lee himself. When he resumed his second expedition, Powell abandoned the "Nell" at the Paria, where Lee continued to operate her as an auxiliary boat at the ferry. In 1873, Lee constructed his own boat called the "Colorado," and instituted regular ferry business with a charge of $3 per wagon and 75c per animal. Of course, the narrow boats built for river running were not suited for a ferry.

Lee sometimes had to flee from the ferry when lawmen approached; in 1873 he was staying at Moenkopi, and in a letter written from there he reported that he had gone for a brief visit to the Havasupai. Contrary to legend, however, he did not hide there for any considerable length of time, nor did he introduce peaches to the Havasupai, who had obtained them long before from the Hopi.

After Lee's arrest, Emma, one of his wives, continued to run the ferry. It was purchased from her by the Mormon Church for 100 cows and continued in operation by the Johnson family, a cattle company, and Coconino County in succession until the Navajo Bridge in Marble Canyon was built nearby in 1929 and the ferry was abandoned.

Lees Ferry is the point from which distances were measured by the government surveys along the river in the Grand Canyon, a system adopted by the United States Geological Survey in 1923. Mile 61, for example, refers to a point 61 miles below
Lees Ferry. Boat trips through the Grand Canyon most often started at Lees Ferry during the days of the wild river running. It, or the bridge nearby, is still the first crossing and practical approach to the river above Grand Canyon today. Lees Ferry itself is an historic site within Glen Canyon National Recreation Area.

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The Frontier Reaches the Grand Canyon, 1872-1901

During the last three decades of the Nineteenth Century, the Grand Canyon became much more widely known, and as the frontier moved into the region, settlement and development began.

In 1872, most people who had heard of the Grand Canyon through the published reports of explorers had a hazy and fantastic idea of its actual appearance. But as artists depicted the Canyon, scientists studied, mapped and described it in more detail, and professional travelers wrote guide books, it became more widely and better known and more people wished to see it. The early visitors had to be hardy travelers, willing to spend days on horseback or in lurching wagons and stagecoaches, but by 1901 they could come by railroad, and as the difficulties of the journey decreased, more people were encouraged to come. Some began to suggest that the Grand Canyon, like the Yellowstone, should be made a great National Park. Although a park was not yet established, Grand Canyon became part of a Forest Reserve and a reservation was established for the Havasupai Indians.

Settlements were established in the area, particularly after the early 1880's when the railroads pushed through the region. Most of those who came looked upon the Grand Canyon as a potential means of personal enrichment. Cattle and sheep were grazed on the North and South rims. Prospectors roamed everywhere, seeking out the mineral wealth they thought was there. Some located ore and began to mine it, built trails and stayed
on to serve as guides for the increasing numbers of tourists. Tourist camps and hotels were built, roads and stage lines established to bring in the people. The idea of a rail line to, or even through, the Grand Canyon occurred to many men. Several railroad surveys were made, rights of way secured, and finally the rails were laid to the Canyon’s rim. A few men challenged the Colorado’s rushing waters and succeeded in following Powell’s route. Men began to make marks in the Canyon, and the Canyon marked them in return, for no man can truly see the Grand Canyon and be afterwards entirely the same.

ARTISTS AND SCIENTISTS

Through the work of Powell and those who went with him and followed him, the nation became aware that the Grand Canyon possessed not only size, but also beauty and scientific interest. Soon artists’ canvases and a scientist’s glowing prose told Americans that the Grand Canyon would be worth seeing, for those hardy enough to make the trip to that country still beyond the frontier.

With Powell in the North Rim country in the early 1870’s were his close friend, Professor Almon Harris Thompson, who was making a topographic survey, and a young artist named Thomas Moran.\(^1\) Moran, Thompson thought, kept getting in the way of serious work. But the sketches of the Grand Canyon which the artist was making, and the paintings which were to follow, did more to make the Grand Canyon’s beauty known to America than perhaps any other means. Powell called on Moran to prepare the engraved illustrations for his great report, “The Exploration of the Colorado River of the West,” published in 1875.\(^2\) Congress paid $10,000 for Moran’s splendid painting, “The Grand Chasm of the Colorado,” which was hung in the National Capitol building in Washington, and Moran became an artist of national renown.\(^3\) His oil paintings, watercolors and engravings were reproduced again and again in books and pamphlets. One of his paintings now hangs in the Visitor Center at Grand Canyon National Park.

In 1880, Thomas Moran was again invited to accompany a scientist on a trip to the Grand Canyon. This was a protege
of Powell,4 Clarence Edward Dutton of the new United States Geological Survey. He had been trained for the Christian ministry and, like Powell, was a Union veteran of the Civil War. He had accompanied the Powell Survey in 1875, and now was returning to the Canyon country as the leader of a full-fledged geological expedition. His survey of 1880-1881 gave him the information for his excellent report, "The Tertiary History of the Grand Canon District, with Atlas."5 This is the
first important geological book on the Grand Canyon. Dutton was a fine geologist, but also a fine writer. He saw the Grand Canyon not only as a geological exhibit, but also as a place of mystery and beauty, and his descriptions of the scenery, never excelled by any other writer, are classic. He recognized the ever-changing aspect of the Canyon:

It is never the same, even from day to day, or even from hour to hour. In the early morning its mood and subjective influences are usually calmer and more full of repose than at other times, but as the sun rises higher the whole scene is so changed that we cannot recall our first impressions. Every passing cloud, every change in the position of the sun, recasts the whole. At sunset the pageant closes amid splendors that seem more than earthly. The direction of the full sunlight, the massing of the shadows, the manner in which the side lights are thrown from the clouds determine these modulations, and the sensitiveness of the picture to the slightest variations in these conditions is very wonderful.

Dutton often chose architectural terms in describing Canyon forms, and his interest in oriental religions led him to see a resemblance between great buttes in the Canyon and the temples of India and China. He began naming the Canyon’s features after the eastern gods; Brahma Temple, Vishnu Temple, Shiva Temple, The Tower of Babel, the Hindu Amphitheater, and many more on the same pattern. Others who followed, especially Francois Matthes, added the names of the gods and heroes of many races and religions.

Dutton’s book has a few illustrations by Thomas Moran, but many more by William Henry Holmes, another artist who traveled with the 1880 survey. While Moran painted landscapes as an artist, Holmes sketched the earth’s structure with scientific precision so that a geologist could recognize every rock layer. Moran’s cliffs are lost in the clouds, but Holmes’ have the clarity of the desert atmosphere, in an art without falsification. Holmes produced some of the finest geological and topographical illustrations ever made.

Another geologist, Charles Doolittle Walcott, traveled with Powell into the Grand Canyon in 1882-1883. In order to take in its horses and equipment, this expedition constructed the Nankoweap Trail, leading down into the eastern end of the Canyon. It was winter, and they had to face blinding snow
and wind. Walcott studied the Grand Canyon Series of rock layers, and decided that they were much older than had been thought. He published his findings in a series of scientific papers. In 1894, he became Powell's successor as director of the United States Geological Survey. In 1891, Powell and G. K. Gilbert brought a large group of the International Congress of Geologists to the Grand Canyon, for by that time it had achieved recognition as one of the world's most outstanding geological exhibits.

One of the most important biological surveys on record was made by C. Hart Merriam in 1889. Although most of his work was done in the San Francisco Peaks, he did study the animals and plants of the Grand Canyon as well. The result of this study was the concept of "life zones," that is, that different communities of animals and plants are found at certain elevations throughout the region, forming bands that are more or less horizontal. He also recognized local variations in life zone boundaries due to exposure and temperature. These life zones he called the Desert (Sonoran), Pinon (Upper Sonoran), Pine (Neutral), Fir (Canadian), Spruce (Boreal or Hudsonian), Timber Line (Sub-Alpine), and Alpine. Thus he was the first to give a scientific statement of the fact that in traveling upward in elevation from the bottom of the Grand Canyon to the top of the San Francisco Peaks, a gain of 10,000 feet, one encounters similar changes in climate, animals and plants to those one would encounter in traveling northward at low elevation from the Mexican desert to the Canadian arctic.

SETTLERS: THE FRONTIER IN THE GRAND CANYON REGION

White men came into the Grand Canyon country in increasing numbers in the early 1880's. Arizona Territory quadrupled its population of white settlers between 1871 and 1881, from under 10,000 to over 40,000. The Grand Canyon was visited at first by hunters who found wildlife very plentiful, especially on the Buckskin Mountains (Kaibab Plateau) and Greenland (Walhalla Plateau). Cattlemen and sheepmen moved
into the area, particularly the North Rim. Timber was cut. Levi Stewart operated a portable steam sawmill in the Kaibab forest near Big Springs, beginning in 1871.12

Behind the hunters, herdsmen and loggers came the colonists, ranchers and settlers. The Latter-day Saints, under the general guidance of their powerful Church, moved down from the north, and at the same time other Americans founded towns to the south.

The Mormon colonization was remarkable in organization and extent. Cedar City had been founded in 1851. Kanab, an outpost since 1864, was founded as a city in 1870, and soon afterward a fort was constructed at Pipe Spring.13 The Mormons made several attempts to colonize the basin of the Little Colorado River, beginning in 1873, and met with eventual success.14 James S. Brown and others settled in 1875 at a place named Tuba City after a friendly Hopi chieftain of Oraibi.15 The nearby wash had long been cultivated by Hopi Indians who often ran the 40 miles from Oraibi, and in order to protect their rights, the Hopi founded another pueblo called Moenkopi not far from the Mormon settlement in 1877.16

In the years after the Civil War, a railroad-building enthusiasm swept the country. Many routes were surveyed, and construction began on several east-west lines. One of these was the Atlantic and Pacific Railroad, which followed a route surveyed by General William J. Palmer in 1867-1868, passing near the San Francisco Peaks and Bill Williams Mountain.17 Two railroad camps, Flagstaff and Williams, were established on the route in areas where there were sheep and cattle ranches. Both places possessed post offices and sawmills by the time the railroad tracks were actually laid, in 1882.18 Flagstaff took its name from an event which probably occurred on July 4, 1876, when a group of settlers from Boston stopped near the later site of the town and, stripping a large pine of its branches, raised the Stars and Stripes to celebrate a century of independence.19 The coming of the railroad to northern Arizona made the Grand Canyon much more accessible to ranchers, tourists, prospectors and miners.
THE IDEA OF A NATIONAL PARK

The idea of setting aside a large area of scenic wilderness land for the benefit and enjoyment of all the people originated in the United States, in 1870. A party of explorers entered the relatively unknown Yellowstone country in that year to survey its wonders. Led by Henry D. Washburn, Nathaniel P. Langford and Cornelius Hedges, the expedition had a military escort commanded by Lieutenant Gustavus C. Doane, to guard against Indian attacks. On the return trip, they gathered one night around a campfire at the confluence of the Firehole and Gibbon Rivers, and discussed schemes to exploit the area. It was then that Hedges declared that he thought the whole area ought to be kept in public ownership forever as a great national park, and urged the others to help accomplish this.

Professor F. V. Hayden, who surveyed the Yellowstone with a scientific expedition in the following year and published a detailed report, supported Langford and Hedges. Senator Pomeroy of Kansas and Delegate Clagett of Montana sponsored a bill in Congress to create Yellowstone National Park, and with concentrated effort, the bill passed both houses and was signed by President Ulysses S. Grant on March 1, 1872. In supporting the bill, Senator Trumbull of Illinois noted the precedent set in 1864, when Congress had granted Yosemite Valley and the Big Trees to the State of California as a park. That bill had been signed by President Abraham Lincoln.

After the first National Park had been established, it was natural that many men should ask that America’s greatest scenic wonder, the Grand Canyon, be set aside as the second National Park. Senator Benjamin Harrison of Indiana introduced the first bill in Congress to this effect in 1882. The bill was reported from committee, but was never voted upon. Harrison made two more unsuccessful tries in 1883 and 1886. As President in 1893, Harrison did as much as he could to protect the Grand Canyon from further exploitation by proclaiming it, with a large surrounding area, the Grand Canyon Forest Reserve. This exempted it from the homestead laws and all other public land laws except those involving mineral claims. Further protection, and National Park status for the Grand Canyon, would require congressional action. By this
The Story of Man at Grand Canyon

time, Yosemite, Sequoia and General Grant had joined Yellowstone as National Parks, but Grand Canyon had to wait until these and eleven others had been created. As a forest reserve, Grand Canyon was placed under the General Land Office of the Department of the Interior in 1897.26

Local feeling was divided on the question of Grand Canyon National Park. While the people of northern Arizona favored the publicity and the increased tourist business which might be expected from such recognition, the miners, stockmen and settlers in the area were quick to voice their opposition to anything which might threaten their interests. The Flagstaff paper gave its support to the park idea in two editorials in 1898, while stating that of course local mineral and grazing rights should be specifically protected in the act establishing such a park.27 Grand Canyon National Park remained an idea, for the time being.

PROSPECTORS

The prospectors of the late 1800’s were incurable optimists. Pay dirt, it seemed to them, was always over the next rise. Rich mines were found in the West by a lucky few, and this encouraged the unlucky majority to search on and on. Lonely men with burros, or on foot, prospected the Grand Canyon region in the ’70’s, ’80’s and ’90’s. Doubtless they saw every alcove and side canyon of the great gorge itself. It just seemed as if the Grand Canyon ought to contain vast mineral wealth, and rumors of John D. Lee’s lost gold mine lent luster to that idea.

Of course, it would be impossible to record the movements of all these men. The hills were full of them, and they wandered everywhere. Nor can anyone say who were the first. Even the Spaniards were prospectors in a sense. The first American prospectors on record in the Grand Canyon seem to be William Ridenour and S. Crozier, who claimed that they had been driven out by Indians in 1874.28 The early river runners often met prospectors. Stanton in January, 1890 met Felix Lantier of Flagstaff near the confluence of the Little Colorado and Colorado rivers.29 About a month later, Ben Beamer took up residence in a rock house under a cliff near the same place, and tried to
support himself by plowing the delta of the Little Colorado when he wasn’t prospecting. Apparently something of a “copper rush” began in 1890, when William Ashurst, Senator Henry F. Ashurst’s father, found rich ore near the “Number Seven” which is visible from Hopi Point. He had been prospecting the Canyon since 1880, and continued to do so until he lost his life there in a rockslide in 1901. Kanab men prospected the North Rim, too, and in 1902 copper was found near Point Sublime.

Very few prospectors were successful. Some returned to “civilization” with glowing tales of gold, silver, copper, vanadium, galena, asbestos, onyx, soapstone and salt. Some never returned at all. River runners and other travelers in the Canyon in the early Twentieth Century found several human skeletons, most probably the remains of prospectors who died of thirst and other accidents.

In order to provide themselves with a supply of pack animals, prospectors released burros in the Canyon where they thrived on the sparse vegetation and multiplied. With the aid of other burros lost by prospectors in the Canyon, the population reached an estimated two thousand burros in modern times, and much destruction of plant cover and fouling of springs resulted. Burros are not native to America.

Hundreds of claims were located in the Grand Canyon. Even today markers and claim notices are still found now and then. Of course, to patent his claim the prospector had to become a miner and actually work his claim. Those who did so, and stayed on as miners in the Grand Canyon, were faced with prohibitive difficulties. Trails had to be built, and the ore packed out on animals. Water was scarce. The railroads were distant. Finally, all of the Canyon’s ore deposits proved to be of limited extent, and none of them brought great financial return to those who worked them, with the exception of the Orphan Mine, and that one had to wait until the advent of the atomic age before it panned out.

The prospectors and early miners of Grand Canyon had their own names for the rock layers they encountered. For example, when they came to what is now called the Redwall Limestone, they looked at the actual color of the rock itself rather than the red stain which has washed down from the
layer above, and called it the Blue Lime. The Bright Angel Shale was the Serpentine Shale to them, Tapeats Sandstone was Tonto Sandstone, and the unfamiliar rocks of the Inner Gorge (schist and gneiss) they called the Black Granite. The top three layers were the Limestone, Gray Sandstone and Red Sandstone (Kaibab Limestone, Coconino Sandstone and Hermit and Supai Formations). 

Most of the miners who stayed on at the Canyon discovered that their trails and their land had value as tourist facilities which equalled or exceeded their mineral value. These men went into the guide business and then into the tourist camp and hotel business. The story of some of the better known of these versatile pioneers is told in the following pages.

"CAPTAIN" JOHN HANCE

"Captain" John Hance, a memorable storyteller, tourist guide, trailbuilder and miner, arrived at the Grand Canyon about 1883 and soon became the first white resident. He built a log cabin east of Grandview Point at the head of the Old Trail, usually called the Old Hance Trail, which he improved. Across the river from this he located an asbestos mine. But his major activity, until his death at Grand Canyon in 1919, was entertaining tourists. He would give them bed and board at his cabin, guide them down his trail on foot, horse or mule, and tell them stories, of which more than a hundred have been remembered and written down. Apparently he never spun the same tale twice, and his guests loved him for his gift of imaginative humor. Among those still told is the one about the time the Canyon filled up solid with clouds from rim to rim, and he walked across on snowshoes, barely escaping death when a clearing trend occurred and he was marooned on a pinnacle. Or the one in which, riding his faithful horse Darby, he was being pursued by Indians when he came upon the Canyon rim and was forced to jump his horse across toward the North Rim. Failing to make it, he fell down toward the River, only saving himself by dismounting handily just above the ground — or by grabbing the limbs of a pine tree — or by shouting "whoa!" to his obedient horse — or perhaps he was
After successful squirrel hunt, "Captain" John Hance, first Grand Canyon resident, poses on cabin porch. (Photo by H. G. Peabody, 1899).

Captain John Hance's hotel was the first on the rim of Grand Canyon in the 1880's.
killed, depending on which version of the story he happened to be telling.

The first tourists known to have visited the Grand Canyon were Edward E. Ayer, a Flagstaff sawmill owner, and his family and friends, if one may define tourists as those who come with no purpose other than to see, admire, return, and tell. Ayer hired Phillip and William Hull, who had a sheep ranch south of the Canyon, as guides. They made a trip to the bottom of the Canyon, giving Mrs. Ayer the distinction of being the first white woman to make the descent. This party used the Old Hance Trail, and John Hance, who had worked for the Hulls before moving to the Canyon, was their guide for the inner canyon hike. Many others followed the Ayers, and by 1886, John Hance was advertising in the Flagstaff newspaper:

Being thoroughly conversant with all the trails leading to the Grand Canyon of the Colorado, I am prepared to conduct parties thereto at any time. I have a fine spring of water near my house on the rim of the Canyon, and can furnish accommodations for tourists and their animals.

Hance built the Red Canyon Trail, or New Hance Trail, in 1894 when rockslides caused by storms had made the old trail unusable. He continued to work his mines, raised vegetables, constructed a reservoir or “tank” near his cabin, hunted, and sometimes lived in a second cabin down in the Canyon during the winter to avoid the worst of the cold and snow. He kept a guest book in which the tourists could record their impressions:

God made the canon, John Hance the trails.
Without the other, neither would be complete.

— Wm. O. O’Neill

Hance sold his ranch and trail to J. Wilbur Thurber, who operated the stage line from Flagstaff, in 1895. But he stayed on, becoming the first postmaster on the rim of the Grand Canyon when the post office of Tourist, Arizona, was established in 1897 at the Hance Ranch. He sold the asbestos mines, but continued to manage them for an eastern firm until 1904. In 1906, Martin Buggeln, former manager of the Bright Angel Hotel, bought the Hance Ranch and build a white, seventeen-
room frame hotel beside the old log dining room which had been the nucleus of a tourist tent-camp "hotel." Buggeln evidently entertained only a few friends and relatives there.

Hance moved over to the Grand Canyon Village, where the Fred Harvey Company provided him with room and board in Bright Angel Lodge, and encouraged him to talk to the tourists as a "character," to provide local color, and in general to be his own yarn-spinning self. 46

John Hance kept his earlier life a secret by telling so many wild tales about it that even the truth is discredited as another "whopper." He was born in 1838 in eastern Tennessee at Cowan's Ferry, into a family of abolitionist Republicans and Union sympathizers.47 He may have fought on either or both sides in the Civil War, and may have been taken prisoner, but the title "Captain" which he bore in later life seems to have been a strictly honorary one.48 In 1868, he came to Camp Verde, Arizona, with his brother George and others.49 He worked as a driver of "bull teams" on his brother's ranch, hauled fodder, and at one time helped evacuate the local Apaches to the San Carlos Reservation. After a few years, he drifted north to the Grand Canyon, which he came to know and love, and where his body is buried, as he wished.

DIAMOND CREEK HOTEL

The first regular tourist stagecoaches to the Grand Canyon were run up to the rim from the railroad at Peach Springs, a distance of twenty-five miles. In 1884, a frame hotel called the Farley Hotel or Diamond Creek Hotel was built near the Colorado River at the mouth of Diamond Creek.50 This was technically the first regular hotel at the Grand Canyon, and certainly the first one at the bottom of the Canyon, but it was located in an area which is outside the present boundaries of Grand Canyon National Park. This hotel was operated regularly until 1889, but as facilities were developed in the more spectacular scenic area to the east, it declined in popularity. It was reached by a stage road down the canyon of Diamond Creek which is at least partly passable even today.
WILLIAM WALLACE BASS

Bass Camp, Bass Trail and the Bass Limestone are all named for a man who had come to Arizona for his health at the age of 34, and became a Grand Canyon settler, trailbuilder, guide, miner and promoter who lived well into his eighties.\(^5\) William Wallace Bass was born in Indiana in 1849, and was a dispatcher on the railroads in New York before coming West.\(^5\) His father had died in California in the Gold Rush.

In 1883 Bass came to Williams, a frontier town of tents, false-front stores, sawmills and saloons. At first he lived in a cave, and later worked and lived on the Scott Ranch along Cataract (Havasu) Creek.\(^5\) He heard many tales of the Grand Canyon and John D. Lee’s hidden gold, and went up to take a look. He was given a map by one of John D. Lee’s wives who lived in Ashfork, showing where the gold was hidden. He didn’t find the gold. Instead, he was so impressed with the Canyon that he forgot all about the gold and felt everyone should see the Grand Canyon.

He set up a camp on the rim of the Canyon near what is now called Havasupai Point, and built a road to Ashfork about 1890.\(^5\) He located several copper and asbestos claims, made friends with the Havasupai Indians, and soon was guiding parties of tourists from Williams and Ashfork to the Grand Canyon and Havasu Canyon. Later, when the railroad came, many of his parties came by train to Bass Station, four miles from Bright Angel Lodge.

Bass constructed a trail down into the Canyon from his camp on the rim to Mystic Springs, a source of water which was shown to him by one of his Havasupai friends named Captain Burro. He packed water from the springs to Bass Camp. Later the trail was continued down to the Colorado River; he crossed the river by means of a boat which he built on the rocky shore near the mouth of Shinumo Creek.\(^5\) About two miles beyond the river crossing, along the bank of Shinumo Creek, he planted a garden where he raised melons, corn and other vegetables, and had an orchard of peach and apricot trees and grapevines. Another trail which had been pioneered by a prospector named White continued up Shinumo Creek and White Creek to the Powell (Muav) Saddle and the North Rim.

This made a cross-canyon trip possible for tourists on the Bass Trail. Bass improved the White Trail and took hunting parties to the North Rim.

One of the tourists Bass took on a horseback trip to Havasu Canyon in 1892 was Ada Diefendorf, a music teacher from Worcester, New York, and a graduate of the Boston Conservatory of Music. Perhaps a common interest in music attracted them to one another, for Bass played the violin. They were married two years later, and Mrs. Bass moved up to Bass Camp to become the first white woman to raise a family on the rim of Grand Canyon. The trip to town required an overnight stop enroute and Ada Bass often said she prepared a meal or slept
under every tree on the 73 miles of road to Ashfork. Since there was no permanent water at Bass Camp, she sometimes made a three-day trip down to the Colorado River in the Canyon to do laundry. She had lots of laundry to do, with four children: Edith, William, Hazel and Mabel.

Bass operated a regular stage line to his camp, using an old four-horse stagecoach which had belonged to General Miles. An overnight stop was made at “The Cave.” No more than 18 guests could be accommodated at Bass Camp, which in addition to a large main building had several tent cabins, a bunkhouse for guides, barns, corrals and a warehouse. There was also a darkroom in a small cave a few feet below the rim of the Canyon. Bass was a self-taught photographer who used the old 8 x 10 and 5 x 7 glass plate cameras. He used his pictures for advertising and occasionally sold some.56

To provide himself with a supply of pack animals, Bass released burros in the Canyon, where they multiplied.57 He also imported horses, including a thoroughbred stallion. Bass installed a cableway across the river in 1908 with a cage big enough to carry a burro. This gave better access to his asbestos mines, garden and orchard on the north side. The cable was soon enlarged to permit a mule or horse to be sent across the river in a suspended cage. Mules and horses, being cautious animals, were not always eager to make the trip, and some incidents of humor and danger resulted. Asbestos from Bass’ mine was shipped as far as France to be used in fireproof theater curtains. Later he built another cableway three river miles below at the mouth of Asbestos Canyon.

Bass was not one to take the Grand Canyon for granted, but immediately began to study its geological history. Loading a burro with books and provisions, he often went into the Canyon for weeks at a time, studying and prospecting. He had his own theory as to its formation which is quite different from the usual story one reads. He wrote several poems about the Grand Canyon which he would recite to his passengers on the stage trips, and could hold his audiences spellbound for long periods of time while he lectured on the rim. He also made several lecture tours through the East showing lantern slides of his own making. He had a deep and reverent feeling for the
Grand Canyon and the lessons it teaches.

W. W. Bass involved himself in some practical philanthropic projects. He was active in behalf of aid for the Havasupai Indians, helping to get a school started there, obtaining medicine for them during an epidemic of measles, and even going as far as Washington to request congressional action. He carried mail between Havasu and Grand Canyon for a time, and often employed Havasupai Indians at his camp. He also helped to get the first schoolhouse and teacher for Grand Canyon Village in 1911. Eight children were required to hold a school and Bass had four; often there were just enough to keep it going.

After the railroad arrived at Grand Canyon in 1901, Bass provided buggy and coach service from the railroad to his camp. He and his family lived near Grand Canyon Village and continued to operate Bass Camp until 1923, when they moved to Wickenburg. He also operated horsedrawn tours on the rim drives and later had two automobiles. Bass’ properties at Grand Canyon were purchased by the Santa Fe Railroad in 1926 and then transferred to the National Park.

W. W. Bass died in 1933, and according to his wishes, his ashes were scattered over Holy Grail Temple, also known as Bass Tomb, from an airplane. Ada Bass, his wife, survived him until 1951, when her body was buried near that of her oldest daughter Edith in Pioneer Cemetery at Grand Canyon.58

SETH B. TANNER

One of the Mormon settlers at Tuba City was Seth B. Tanner, who prospected and traded over a large region. He directed many of the Saints to a ford of the Little Colorado River near the present town of Cameron. This Tanner’s Crossing had a rock bottom, avoiding the quicksands found elsewhere. Tanner often visited the eastern part of the Grand Canyon, and followed an old Indian trail since called the Tanner Trail to some mining claims near the river, where he had found a little copper and silver.59 He improved this trail, and in 1889 with Fred Bunker and Lewis Bedlias constructed a new upper section from the rim.60

The Tanner Trail has gained a romantic and also a rather unsavory reputation over the years. It leads down into the
country around the junction of the Big and Little Colorado rivers, where one of the West's unsubstantiated legends says that John D. Lee buried several pots of gold. Many attempts have been made to find this, all of them failures and some of them disasters. For example, a man named Brown, guided by W. W. Bass, is reported to have lost five heavily laden burros over the edge near the top.⁶¹

There is also a well-established tradition of skulduggery there by thieves, poachers and renegades. From the Tanner Trail, one can cross the River to the Nankoweap Trail and thus go from rim to rim via what is called the Horsethief Trail. According to many old-timers, this trail was used by a gang who stole mounts in Utah, changed the brands and spirited them across to Arizona, where they sold them and then stole more to bring back and sell to their original victims, whom they again robbed, etc.⁶²

In more recent times the Tanner Trail served as an outlet for illicit booze. Park Naturalist Glen Sturdevant discovered a distillery at an abandoned campsite in 1928, with assorted bottles, kegs and other necessary equipment.⁶³ It has been reported that a bootlegger sold the stuff in Grand Canyon Village during the prohibition era.⁶⁴

THE HERMIT

Louis D. Boucher was called “the Hermit” because he was a quiet man who lived in an out-of-the-way but very beautiful place, Dripping Springs, in an amphitheater of Hermit Basin, the head of Hermit Canyon, a tributary of the Grand Canyon. He had a white beard and rode a white mule which had a bell around its neck, and he carried the tools of a prospector; a geology pick and a pan, and tools for trailmaking.⁶⁵ He hailed from Sherbrooke, Province of Quebec, in French-speaking Canada, and came to the Grand Canyon about 1891. Apparently he was a trail guide at the Hance Ranch for a time.⁶⁶

His home camp at the dependable Dripping Springs consisted of two tents and a corral for horses, mules and burros. He also kept sheep. He even kept goldfish in a trough at Dripping Springs.⁶⁷ His trail, which he called the Silver Bell Trail,
descended from the rim to Dripping Springs and then out around Columbus Point into Long (Boucher) Canyon, where he had planted a splendid orchard and garden where he grew oranges, figs, peaches, pomegranates and other fruits, vegetables of every kind including tomatoes throughout the year, chili, cucumbers, melons and grapes.\(^6\) He had 75 trees. This orchard was at the site of Boucher’s copper mine, where there were several cabins, so that a tourist could make a comfortable stop there. Louie located other mineral claims, including a deposit of graphite, but apparently none of his prospects were pay dirt, because by 1912 he had moved on to Mohrland, Utah, where he worked in a coal mine.\(^6\) He was not a complete hermit, as other men worked with him from time to time, and in 1903 he assisted in the search for P. H. McGonigle and Charles McLean, who had drowned in the River.\(^7\)

**PETER D. BERRY AND GRANDVIEW**

Peter D. Berry’s life is a page out of the Old West. He was born in Ohio in 1856, but his family soon moved to Missouri.\(^7\) As a young man, he went out to the mines in Colorado. Word came to him there that his brother, John Berry, a saloonkeeper in Flagstaff, had been shot by a disreputable pair called the Hawkes brothers. He set out for Flagstaff to see that the right thing was done, but when he arrived the killers had already been lynched. His brother’s widow and her son seemed to need support, so, according to his nephew, Ray Berry, he married her and settled down in Flagstaff.\(^7\) He built a house there in 1888.\(^7\)

Interest in prospecting and mines at the Grand Canyon was high in those days, and Peter had mining experience. He made friends with two smart, energetic men named Ralph and Niles Cameron, who were at the time herding sheep near Flagstaff, and the three of them went up to the Grand Canyon often during the 1890’s as partners, to locate claims and to work some of them, and incidentally to explore the Canyon and build trails down into it.\(^7\) There were other partners involved with Berry and the Camerons from time to time as their fortunes and attitudes changed.\(^7\) Berry did not always work with others. He spent months hiking in the Canyon alone, locating claims and
recording his movements in his meticulously kept, but atrociously spelled, diary.\textsuperscript{76}

The first trail constructed by Berry, the two Camerons, and one or two others was the Bright Angel Trail, an old Havasupai Indian track which they widened in 1890 and 1891 as far as Indian Gardens.\textsuperscript{77} This was recorded as a toll road, and through mining claims located at strategic spots such as Indian Gardens, its use was controlled. The story of the bitter controversy which this engendered must wait for a later chapter. The trail was extended on down to the River about 1902.\textsuperscript{78}

Meanwhile, the Camerons and Berry in particular became interested in another part of the Canyon. In 1890, Pete had located the “Last Chance” claim on a very rich vein of copper ore on Horseshoe Mesa down below Grandview Point.\textsuperscript{79} He claimed a “mill site” on the rim and in 1892 and 1893 built a new trail, the Grandview Trail, from the mill site down to the mine.\textsuperscript{80} The mine was soon a going concern. Ore was packed up the trail on 8 or 10 mules, each carrying 200 pounds. The mules and their packer could make a round trip and a half on the four-mile trail each day. In the mine, work was done with pick and shovel, explosives and a wheelbarrow, with a mule-operated hoist to the surface and a narrow-gauge track out to the dump. There were several cabins and a mess hall located on Horseshoe Mesa, provided with Arizona Air-Tight Stoves for winter heat. The ore was excellent. At the Columbian Exposition in Chicago it was awarded a prize as over 70\% pure copper.\textsuperscript{81}

One day in 1894 the Camerons, Berry and James McClure were traveling along the Tonto Platform between the Grandview Trail and the Bright Angel Trail. Ralph Cameron was ahead of the rest. In a stream bed he found an old Meerschaum pipe lying on the ground. He picked it up, scratched a date about one hundred years previous on it, and put it where the others could not miss it. His companions fell for the joke, speculating on who might have been there so long before. The story was too good not to tell, so the truth came out, and the stream has been called Pipe Creek ever since.\textsuperscript{82}

The miners were constantly receiving visitors, and it was not long before they saw them as a valuable source of income. The rude cabin up on the rim was joined by the Grandview
The Grandview Hotel, owned by Pete Berry, was Grand Canyon's leading tourist spot in 1895.

Hotel, a long, two-story log structure, in 1895, which was for several years the leading tourist mecca at the Grand Canyon, under the management of Peter Berry. The Grandview Trail was extended down to the River for trailriding visitors, and some natural limestone caverns which the miner's cook had discovered became a popular attraction. Soon stalactites and stalagmites decorated the hotel's front porch, their places in the caves being taken by scrawled names and dates.

Mrs. Berry had borne Pete a son, whom he had named Ralph after Ralph Cameron. According to some of the old-timers, Mrs. Berry did not like life at the Canyon, and before long she had gone away to Tucson. Pete married Martha Thompson, the housekeeper at the Grandview Hotel.

The Last Chance Mine seemed to consume more money than it produced. Still, it was a good mine and the ore was rich. In 1901, Berry and his partners sold it to the Canyon Copper
The Story of Man at Grand Canyon

Company, an eastern corporation. In 1907, the bottom dropped out of the copper market. New methods had been developed for processing low-grade ore, and the high-grade ore of the Last Chance Mine was no longer worth hauling out of the canyon.

The hotel, too, fell on evil days. The railroad reached the Canyon eleven miles to the west in 1901, and the stage from Flagstaff to Grandview ceased operation. Pete and Martha Berry tried to keep the hotel in the black, with decreasing success. For a time they served meals to the tourists who took the Fred Harvey stage trips out along the rim to Grandview and beyond.

The Berry and Copper Company holdings were eventually sold to the William Randolph Hearst interests, who in turn sold them to the National Park Service. Pete guided his last string of tourists down into the Canyon in 1916, and soon afterwards moved down to the ranch below Hull Park which his son Ralph had homesteaded in 1915. Ralph died in the influenza epidemic of 1919. Pete and Martha continued to live at the ranch. Martha died in 1931, and Pete in 1932. The ranch was inherited by a nephew, Ray W. Berry, who sold it to William Belknap. The Belknaps used it at times, but abandoned the ranch house when thieves broke in and stole all the movables which had any evident value. Today it lies in ruins. The Grandview Hotel is only a dim outline in the ground; but a deteriorating cabin, a pile of vandalized debris, and the excavations remain at the Last Chance Mine.

Daniel L. Hogan and the Orphan Mine

Daniel L. Hogan, a native of New York and a resident of Flagstaff, arrived at the Grand Canyon about 1890, and began to prospect. The best-looking copper ore he could find was down over the rim of the canyon, a thousand feet below Maricopa Point. He located a claim there, including part of the rim, in 1893. Since he was an orphan, he named it the "Orphan Lode" or "Lost Orphan Mine." He also did some prospecting in Hermit Basin, and in 1896 he and some others built the trail down into that area from Horsethief Tank, which he had
also constructed. Once he ran across an old counterfeiter’s camp in Hermit Basin.  

During the Spanish-American War, Hogan served with "T.R." Roosevelt and Buckey O’Neill in Cuba with the Rough Riders. The certificate of patent for the Orphan Lode Mining Claim, dated March 23, 1906, bears the signature of President Theodore Roosevelt. After his return, Dan was appointed deputy sheriff and was wounded in 1899 during a fight with some desperate Navajos.  

Like all of the other copper mines in the Grand Canyon, the Orphan was not particularly profitable, and was inactive for many years. Hogan built a tourist lodge on his claim in 1936, which he called the "Grand Canyon Trading Post." After he sold the place, it became in succession the Kachina Lodge, "Rogers' Place" in 1949 when it was owned by Will Rogers, Jr., and finally the Grand Canyon Inn.  

With the advent of the atomic age, the Orphan became the only active mine in Grand Canyon National Park. In 1951, the Geological Survey discovered that the lode was very rich in uranium. Three years later, the Golden Crown Mining Company acquired the mine. A cableway was erected down to the entrance to the mine. Later, a 1,500-foot elevator shaft was sunk. Ore was sent out of the park to be processed near Tuba City. A 1962 agreement between the Park Service and the mining company allows uranium to be mined under National Park land until 1987. In return, the surface rights and, eventually, the whole mine will revert to the American people. Under the terms of the agreement, the tramway was removed in 1964.

SANFORD H. ROWE AND ROWE WELL

Sanford H. Rowe operated a livery stable in Williams, and provided transportation up to the Grand Canyon. As has been indicated, water is an extreme problem at the South Rim, particularly in the summer. While being guided by a Havasupai Indian named Big Jim in 1890, Rowe noticed damp ground indicating a seep of water. Later he dug a well at this point, and claimed the land by right of discovery. Since he had already homesteaded a farm near Williams, he had to locate Rowe’s Well as a mining claim and mill site. The "Lucky
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Strike," the "Little Mamie" and the "Highland Mary" claims never produced any mineral to boast of, but enough to patent. Rowe and others built a crude smelter there of rock and adobe, which operated on pinyon pine charcoal for fuel, to do the patent work. With Ed Hamilton as partner, Rowe developed the land into an automobile camping ground. Cabins, a coffee shop, a bar, and a dance hall later ornamented the forest there, using the water from the well, which proved to be insufficient. The claims were acquired by the National Park Service in 1956.

BY STAGECOACH

Tourists who wished to see the Grand Canyon before 1901 had to come by horseback, wagon or stage from some point on the Atlantic and Pacific Railroad. Beginning in 1883, the first stages were run up to the Canyon rim from Peach Springs. Visitors could take stages from other points by making arrangements with W. W. Bass, who operated chiefly out of Ashfork after 1892, or with Sanford Rowe, who drove the route from Williams. But the majority of tourists took the regular stage from Flagstaff. This stage line was initiated by the Atlantic and Pacific Railroad in 1892, and operated at first by E. S. Willcox. Three stages a week traveled from Flagstaff, stopping at stations where travelers refreshed themselves while a change of horses was made. These stations were Little Springs, Cedar Ranch and Moqui Tanks. The trip to Hance's Ranch could be made in one day, and the fare was $20. For this price, one could jounce along in a four- or six-horse stagecoach to which, if there were too many passengers, a second coach or "trailer" was attached, making a train measuring 48 feet from the first horses' noses to the tailboard. According to a traveler of the time, "deep wheel-ruts in the yellow soil cause the coach to act like an over-laden schooner in a heavy sea."

In 1895, J. Wilbur Thurber took over the operation of the stage line, and purchased Hance's trail and hotel as well. The line was extended over to the present site of the Bright Angel Lodge, where Thurber erected a cabin and tourist tent camp. Thurber always referred to himself as the "gentlemanly" driver of the Grand Canyon stage.

As the railroad approached the Canyon in 1899, stages
“Tallyho!” on the rim of Grand Canyon. Stagecoach trip from Flagstaff cost $20 per person. J. W. Thurber was driver for several years. (Photo taken ca. 1903.)

were driven from the railhead at Anita to Thurber’s “Bright Angel Hotel” at the head of the Bright Angel Trail. But with the arrival of the rails at the rim of the Canyon in 1901, the stagecoaches were limited to the trips along the rim, which they continued to take until the 1920’s.

BY BICYCLE

One cannot leave the subject of transportation to the Grand Canyon without mentioning the intrepid members of the Coconino Cycling Club of Flagstaff, who made their First Annual Run to the Grand Canyon in 1894. The trip was not an easy one, and so few attended that only four Annual Runs were held. For example, in 1896, there were 60 reservations for the trip, only 13 starters, and only 6 completed the trip, one
of those with a broken chain. The usual August thunder-showers dampened the cyclists' enthusiasm.

**FAMOUS VISITORS**

A few of the many visitors who came to the Grand Canyon in the late Nineteenth Century are so well-known that they must be mentioned. General John J. Pershing, when only a 29-year-old second lieutenant, visited the Canyon with three companions in 1889. Lost and nearly perishing of thirst, he was guided to Hance's place by a Havasupai Indian. In later years, Pershing was said to have remarked that the Grand Canyon would make a wonderful border between France and Germany.

John Muir, the great conservationist, visited the Canyon in 1898 and urged its establishment as a National Park. He described it as a scene without parallel on earth:

No matter how far you have wandered hitherto, or how many famous gorges and valleys you have seen, this one, the Grand Canyon of the Colorado, will seem as novel to you, as unearthly in the color and grandeur and quantity of its architecture, as if you had found it after death, on some other star; so incomparably lovely and grand and supreme is it above all other canyons in our fire-moulded, earthquake-shaken, rain-washed, river and glacier sculptured world.

In the same year, two professional tourists and writers of travelogues visited the Grand Canyon and helped to give it wide publicity, George Wharton James and Burton Holmes. James' books became the standard guidebooks on the Grand Canyon for many years, until they became hopelessly out of date.

**ROBERT BREWSTER STANTON'S RAILROAD SURVEY**

The idea of building a railroad all the way down the Colorado River, through the Grand Canyon and all the other canyons, first occurred to S. S. Harper, a prospector in northern Arizona. Harper had watched the westward progress of the Atlantic and Pacific Railroad and he thought that a water-level route might have advantages. A look at the Colorado River near Lee's Ferry convinced him that it was possible, and he had soon
Noted conservationists John Muir and John Burroughs (fourth and sixth in line) brave a snowy trail to see the Grand Canyon. (Photo by Kolb Brothers).
sold the idea to Frank Mason Brown, a former California State Senator who had turned to the mining and real estate businesses in Denver.\textsuperscript{108}

To Brown, the idea of a railroad from Denver to San Diego through the Grand Canyon was irresistible. After talking to Powell, he and others formed the ambitious Denver, Colorado Canyon and Pacific Railroad Company on March 25, 1889.\textsuperscript{109} Soon afterwards, they appointed Robert Brewster Stanton as chief engineer of a survey to determine the feasibility of the route.

A better man could hardly have been chosen, for once Stanton began a project, he always saw it through to completion or to a grand failure. He was a graduate of Miami University in Ohio, where his father, a Presbyterian minister, was president. He had studied civil engineering, and had experience in railroad surveys and mining in the West.\textsuperscript{110} Now he undertook to repeat Powell’s feat of taking a survey party by boat down the Colorado River.

The expedition left Green River, Utah, on May 25. Stanton took Powell’s book along as a guide. President Brown, who came too, had provided them with five light boats of thin red cedar and had vetoed life preservers as unnecessary.\textsuperscript{111} In Cataract Canyon two boats were lost along with almost all the food, but miraculously all the men survived and Stanton, living on sheer determination, with a few faithful men including two Negro servants managed to carry the survey through, taking careful measurements with instruments and an almost continuous panorama of photographs.

Provisions were renewed and the men continued downstream from Lees Ferry into Marble Canyon, where on July 9, Brown was tossed overboard by the violence of the River above Soap Creek Rapid and was drowned.\textsuperscript{112} Another disaster took the lives of Peter M. Hansbrough and Henry C. Richards six days later. The surviving men then retreated from what was, to them, “death’s canyon.”\textsuperscript{113}

Stanton was not defeated. He had larger boats constructed of sturdy oak with airtight compartments all around, and provided them with well-made life preservers and waterproof rubber bags for the food. By December 10 he was leading a new survey party down the Colorado. After a fine Christmas dinner
with the Johnsons of Lees Ferry, they plunged into Marble Canyon, where disaster again overtook them. The photographer, F. A. Nims, fell and broke his leg. He had to be taken overland to Lees Ferry, and Stanton himself, with no previous experience, had to take all the photographs from that point on, with the unwieldy equipment of that day. Miraculously, not one of the 2200 negatives was lost.

By January, 1890, the men were in the Grand Canyon, testing their experience against the violence of the rapids. They noted the springlike weather at the bottom of the Canyon in the wintertime, and Stanton and two others climbed up toward the North Rim to admire the incomparable scenery. Although they lost a boat and several men fell overboard, the life preservers did their work and no one was drowned. One man walked out, and three were sent out by the railroad at Peach Springs. But Stanton and six others went all the way to the Gulf of California with the two remaining boats and completed the first run of the Grand Canyon in almost twenty years.

Stanton firmly believed that a railroad could have been built down the Colorado River, from an engineering standpoint, and perhaps he was right. But he always tended to be overly optimistic about the business such a line would carry, located as it would have been in the wilderness far from cities or towns of any size.114

On his trip downstream, Stanton, like Powell, had seen quantities of extremely fine placer gold in the sandbars along the River. In 1897, with Julius F. Stone, Stanton formed the Hoskaninni Company to exploit these deposits. He constructed a huge dredge with 5 gasoline-powered engines, 82 buckets and weighing 180 tons, on the Colorado River in Glen Canyon.115 But the gold was so fine that it washed right through the machinery, and there was not enough to pay. In 1902, the company went bankrupt and a sale of its assets netted only $29.86 against a debt of thousands. A similar story could be told of many others who joined a series of “gold rushes” to the Colorado River around the turn of the century.

Stanton devoted much time in his later years to compiling a monumental history of the Colorado River which was too long to find a publisher. The courageous but tragic life of this hardheaded dreamer ended in 1922.
In the years between Stanton’s survey and the turn of the century, two trappers took boats down the Colorado River through the Grand Canyon. These were Flavell and Galloway.

George F. Flavell, who also called himself “George Clark,” left Green River, Wyoming, on August 27, 1896 in a flat-bottomed boat named the “Panthon” with a companion, Ramon Montos. By October 20, they had reached the mouth of the Little Colorado. Flavell’s log records the journey with many flashes of a trapper’s humor:

If we had lowered over all the bad places, it would have taken a month. By risk it was run in a day. Still I feel confident we will get through. We must expect some accidents and expect to hit some rocks. There is only one stone we must not hit. That we must miss at all hazzard: our Tomb Stone!

At the foot of one of the tourist trails, Flavell met three men including the Reverend Doctor George W. White, president of the University of Southern California. After running all the rapids in the Grand Canyon, without knowing their names, Flavell reached quiet water at the Grand Wash Cliffs on October 31, and then took his time, trapping beaver and visiting friends, downriver to Yuma. He did not enter Mexico because, after a scrape with the Seri Indians of Tiburon Island in 1894, he was persona non grata with the Mexican Government.

Nathan Galloway, a Utah trapper, and William C. Richmond ran the River through the Grand Canyon in the winter of 1896-1897. “Than,” as his friends called Galloway, was a tall, slim, athletic man of 45, bald but possessing a large black moustache. He is well known as the initiator of a new method of running rapids. Instead of taking them head on, as Powell and the others had done, he turned the boat around and ran the rapids stern first so that he could watch where he was going, guide himself instead of depending on signals, and check his speed with the oars. This method was adopted by almost all his successors, so that today if a violent rapid twists a boat around and forces the oarsman to run bow first, he is said to be “Major Powelling.”

Galloway’s boats were relatively flat-bottomed rowboats,
16 feet long, made of one-inch fir, with canvas covers and compartments added. Less enthusiastic about the scenery than Flavell, Galloway said that his trip was of "no profit." He did manage to trap six beaver in the Grand Canyon. And the River had some hold on him, it seems, because he repeated his trip 12 years later.

THE RAILROAD COMES TO GRAND CANYON

Railroads were still pushing forward in the last two decades of the Nineteenth Century, when the iron horse was the major means of long-distance travel. The construction of a railroad to the Grand Canyon was an idea proposed by many forward-looking people. While Stanton's project for a railroad down the length of the Canyon seems a trifle visionary even today, the much simpler suggestion of a spur line from the Atlantic and Pacific Railroad had much to recommend it, including the potential business from increasing numbers of tourists who wanted to see the scenic wonder. However, it was almost 20 years from the time the railroad reached Flagstaff and Williams to the completion of a line to the Grand Canyon. The men with the foresight did not have the capital, and the men with the capital did not have the foresight.

Businessmen in Flagstaff began the agitation for a line in 1886 by organizing the Flagstaff and Grand Canyon Railroad Company and beginning a survey. But financial backing could not be secured.

The territorial legislature of Arizona, following the general custom among American governmental bodies at that time of encouraging railroad building, passed a bill in 1887 exempting from taxation for a period of six years from its completion the first railroad to be built from the Atlantic and Pacific line to the Grand Canyon.

Several further attempts were made by Flagstaff people to interest eastern capitalists in the project, and a town meeting in 1891 promised help in securing the right of way for any company which might build the railroad. In the same year, Flagstaff became the county seat of a new county, Coconino, carved out of Prescott's Yavapai County. This gave Flagstaff new importance and encouraged its citizens in the project of a
rail line to the Grand Canyon, which was now within Flagstaff's own county. At least one more company was formed, and in 1896 actually was granted a right of way across the Grand Canyon Forest Reserve by act of Congress, but after a total of 15 years of sporadic effort, there was still no railroad from Flagstaff to the Grand Canyon.¹²⁸

By that time, Williams had its turn at promoting the railroad. In 1894, the citizens contributed $1,000 to finance a preliminary survey of the road.¹²⁹ The moving spirit behind this action was the young sheriff of Yavapai County, William Owen O’Neill, known to everyone as “Buckey,” a name which stems from a gambling term meaning “to bet all on one throw.”¹³⁰

Buckey O’Neill was born in Missouri, received a legal education in Washington, D.C., came to Arizona in 1879, and in a brief but brilliant career became an author, reporter, editor, judge, and superintendent of schools, and was involved in several business ventures in the vast territory between Tombstone and the Grand Canyon. As sheriff, he was famed for the capture of the men who robbed the A. and P. train at Canyon Diablo in 1889, after chasing them all the way to Wahweap Canyon, Utah. Later he was the candidate of the People’s Party for territorial delegate, and twice defeated. O’Neill had prospected a bit and located what he thought was a rich copper mine near Anita, 14 miles south of the Grand Canyon.¹³¹ Like all other miners in the area, he was faced with the prohibitive cost of shipping out his ore. What was needed was a railroad. He succeeded in interesting the Chicago firm of Lombard, Goode and Company in the mines, the railroad and the Canyon, and sold out to them in 1898 shortly after his election as mayor of Prescott and just before he went to Cuba with Theodore Roosevelt’s Rough Riders, where he lost his life in the charge up San Juan Hill.¹³² He is memorialized in a statue which stands in front of the Yavapai County Courthouse in Prescott, and in a much larger monument, O’Neill Butte, which towers above the Kaibab Trail below Yaki Point in the Grand Canyon.

In July, 1897, the Santa Fe and Grand Canyon Railway Company was organized by Lombard, Goode and Company, to build a railroad and telegraph line from Williams to Grand Canyon by way of the mines at Anita.¹³³ In order to do this,
an act of Congress was required, granting the right of way across the Grand Canyon Forest Reserve. The act was passed in May, 1898 and construction had already begun on the new railway. In June a 50-ton smelter was completed at Williams, but was not used to any considerable extent. By 1900 the railroad line reached Anita, but it was evident that the copper deposits were limited, and production had ceased at the mine.\textsuperscript{134} Since the railroad company borrowed heavily to finance the construction, and since the reason for its existence disappeared,
it went bankrupt.\textsuperscript{135} Agents of the Santa Fe Railroad, which by this time had absorbed the Atlantic and Pacific Railroad, bought the property on July 18, 1901 for $150,000.\textsuperscript{136}

The Grand Canyon Railway Company, a subsidiary of the Santa Fe Railroad, completed the line from Anita to the Grand Canyon, and the first scheduled train to travel from Williams to the Grand Canyon made its historic trip on September 17, 1901.\textsuperscript{137} This date marks the end of one era and the beginning of another at Grand Canyon. A relatively smooth rail journey of less than three hours, costing $3.95, replaced the jouncing all-day stage ride which cost $20. The number of tourists increased sharply, and most of them came to Grand Canyon Village rather than to Grandview, Hance Ranch or Bass Camp.

THE NORTH RIM

Grazing of cattle and sheep in the Kaibab forest continued. The control of most of the range for a decade after 1877 was in the hands of the United Order of Orderville, Utah, a Mormon cooperative movement first organized by Brigham Young in 1874.\textsuperscript{138} In the United Order all lands were held in common, all work was done for the benefit of the group, and everyone's needs were taken care of by the Order. All families ate meals together in one large hotel-like building. The Order, like most such experiments, faced internal dissension and dissolved in 1900.\textsuperscript{139} Their livestock interests on the Kaibab were purchased by Van Slack and Thompson. There is some argument as to whether the famous V. T. brand of the North Rim country represents the initials of these men or those of the Valley Tannery of Orderville.

Meanwhile, John W. Young, a son of Brigham Young and his representative in England, conceived the idea of making the Kaibab a private forest for the benefit of English nobility. "Buffalo Bill" Cody was in England at the time, and Young in 1892 got him to take a group of Englishmen along with him on a trip to the North Rim country, where they could see the possibilities of establishing hunting lodges and keeping horses and hounds on the Kaibab. They got off the train in Flagstaff, where the local people were much impressed.\textsuperscript{140} Some Kanab businessmen including Dan Seegmiller met them with wagons
and took them up to the South Rim, then via Lees Ferry and Houserock Valley to the Kaibab. After such a rugged trip it is no wonder that the honored guests decided that the Grand Canyon country was just too far from England.

To redeem his losses, John W. Young organized the Kaibab Land and Cattle Company, which was sold in 1896. Later B. F. Saunders and then E. J. Marshall’s Grand Canyon Cattle Company succeeded to the grazing lands north of the North Rim.

Tourist activity was much later in developing on the North Rim, due to its isolation. Dan Seegmiller and his partner, E. D. Woolley, took in some parties by buggy from Kanab in the late 1890’s.

THE HAVASUPAI RESERVATION

Prospectors came through Havasu Canyon in the 1870’s, without doubt, but their names are not known. In those days, white men did not always treat Indians kindly, and in 1878 the Havasupai appealed to Governor John C. Fremont, who gave them a letter which stated that they were peaceful people and asked all white visitors to respect their rights.

About 1880 a group of prospectors including James Mooney, a sailor turned miner, came into Havasu Canyon and located a lead and silver claim near the base of Bridal Veil (Havasu) Falls. These men also attempted to descend the cliff near the highest falls downstream. They lowered a rope over the side, and Mooney slid down it, but the rope was too short and he fell to the rocks below and was killed. The falls have since been called Mooney Falls. The other miners later placed a ladder there and buried Mooney’s body.

A proclamation by President Rutherford B. Hayes in 1880 established the Havasupai Indian Reservation, an area 5 miles wide and 12 miles long surrounding the village and the cultivated portion of the canyon. The Army Corps of Engineers sent in a surveying party in the following year including Elliott Coues, the historian. As a result of this survey, President Chester A. Arthur reduced the reservation in 1882 to an area of 518.6 acres, including only the village and cultivated fields. This was probably done in order to leave as much area as possible open to prospecting and mining.
At the same time, knowledge of the Havasupai people and the beauty of their isolated canyon was spreading. In 1882, Frank Hamilton Cushing wrote "The Nation of the Willows," and later George Wharton James and others included information about Havasu in popular guidebooks. W. W. Bass' interest in the Havasupai has already been mentioned.

The Bureau of Indian Affairs began work with the Havasupai in 1890, when they were placed under the jurisdiction of the Fort Mohave Indian School. A government farmer was sent into Havasu Canyon in 1892 to teach the people better farming methods. In 1894 a school was established, and there were soon 70 pupils studying under two teachers in buildings constructed of sandstone near the junction of Havasu and Hualapai Canyons. This day school included only the lower grades, and older children were sent out to boarding school. In 1896, the Havasupai Reservation was placed under the Walapai Indian Agency. Tourists and miners continued to come in increasing numbers.

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The National Monument, the Village, and Fred Harvey, 1901-1919

This period began with the arrival of the railroad at Grand Canyon, and ended with the establishment of Grand Canyon National Park. In the time between, the Grand Canyon was made a National Monument under the supervision of the United States Forest Service, Grand Canyon Village grew around the railroad terminal, and the Fred Harvey company, a subsidiary of the Santa Fe Railroad, opened and operated new hotels and other facilities. A new map of the Canyon was made, and interesting fossils were found by scientists. The days of Colorado River exploration ended and the river trips of sportsmen and photographers began. Development of the North Rim lagged behind due to its isolation, but it was a popular hunting ground. Automobiles arrived at both rims, heralding the eventual eclipse of the railroad as the major means of reaching the Grand Canyon. Finally, conservationists and the Congressional delegation from the new state of Arizona succeeded in having the Grand Canyon set aside as the seventeenth national park.

GRAND CANYON NATIONAL MONUMENT

Theodore Roosevelt, a vigorous outdoorsman, became president in 1901, and succeeded in doing more than any other individual to establish conservation of natural resources as a national policy in the United States. In 1903 he took a trip through the West, and visited the Grand Canyon for the first
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time on May 6. The local people were very excited, and a special train was advertised by the Santa Fe for the occasion. With the governor and members of his old regiment, the president rode on horseback out to Grandview, where he dined on the simple fare of the frontier.

Roosevelt was deeply moved by the beauty of the Grand Canyon, and remarked that it was "to me the most impressive piece of scenery I have ever looked at." During his stay at the Canyon, he came to the conviction that all Americans should be able to see and feel what he had seen and felt on the wild and lonely rim. He expressed this conviction in a speech he delivered there:

In the Grand Canyon, Arizona has a natural wonder which, so far as I know, is in kind absolutely unparallel-ed throughout the rest of the world. I want to ask you to do one thing in connection with it in your own interest and in the interest of the country — to keep this great wonder of nature as it now is. . . . I hope you will not have a building of any kind, not a summer cottage, a hotel or anything else, to mar the wonderful grandeur, the sublimity, the great loveliness and beauty of the Canyon. Leave it as it is. You cannot improve on it. The ages have been at work on it, and man can only mar it. What you can do is to keep it for your children, your children's children, and for all who come after you, as the one great sight which every American . . . should see."

Theodore Roosevelt did much to protect and preserve the Grand Canyon. When Senator Reed Smoot of Utah, another staunch friend of conservation who had visited the North Rim, succeeded in getting through Congress a bill for the protection of wild animals in the Grand Canyon Forest Reserve, Roosevelt signed the bill and then on November 28, 1906, proclaimed the Grand Canyon Game Reserve. This action protected the deer and other "game animals," but was not considered to apply to predators such as mountain lions and coyotes.

In the same year, Congress had passed the Act for the Preservation of American Antiquities, which gave the president the power to set aside areas which contained "objects of historic or scientific interest" as national monuments. Theodore Roosevelt established Grand Canyon National Monument under this law on January 11, 1908. The primary effect of this proclamation was to forbid prospecting and mining on all lands in
Theodore Roosevelt and John Hance (on second and third mules) start down the Bright Angel Trail into Grand Canyon. (Photo by Kolb Brothers, March 17, 1911).
the Grand Canyon which were not already covered by valid claims. The Monument was placed under the Department of Agriculture to be administered by the Forest Service, since it had been created out of a forest reserve. Grand Canyon Forest Reserve was divided into two areas, Kaibab National Forest to the north, and Coconino National Forest to the south.⁷

Many people still urged that Grand Canyon be made a national park, but this required Congressional action, which did not occur for another decade.

FRANCOIS EMILE MATTHES

The topographic map of the Grand Canyon is not only one of the finest topographic maps ever made; it is also a work of art and the masterpiece of its maker, Francois Emile Matthes. Matthes began his map for the United States Geological Survey in 1902, a task which took him into every part of the Canyon.⁸ The only reliable map of the area then in existence was the reconnaissance chart of Powell’s survey, and there was a need for a large-scale accurate map.

Matthes began his survey on the South Rim, establishing bench marks and using triangulation, leveling and plane-table methods to establish the position and elevation of points which could be seen from the rim. Observations were also taken within the Canyon under difficult conditions; during scorching days on the Hance Trail, the rocks became so hot that the men had to shift continually from one foot to the other to avoid burning themselves on the hobnails in their boots, and the air bubbles in the levels grew smaller as the sun grew hotter, finally disappearing around noon each day. Water in kegs and barrels had to be packed in, and every man drank a gallon a day.

The time came when the survey had to cross to the uninhabited North Rim. There was no established route.⁹ Matthes was assured that Bright Angel Canyon was impassable, the incomplete Bass Trail was practical only for burros, not horses, and Lees Ferry was too far away. He decided to use the Bass Trail, and after the survey had worked its way down to the River with great difficulty, they discovered that Bass’ boat was on the north side. Matthes and another man had to swim the River just above the rapids and bring the boat back. Then the
horses and mules had to be tricked into entering the water—they were literally pushed in—and guided across to the other side with the boat, which was leaky and required constant bailing. The entire crossing from one rim to the other required six days.

Once on the North Rim, the men had to get their supplies from Kanab, 75 miles distant by trail, as this was easier than the Bass crossing. As winter approached, Matthes had to consider crossing the Canyon again. By this time the survey had reached the head of Bright Angel Canyon, and Matthes decided to examine it as a possible route. That very day he was startled to see “two haggard men and a weary burro” emerge from the depths at that point.

Matthes’ men immediately began work on a rough trail which would be passable for their animals, down to the mouth of Bright Angel Creek along the general route of the present North Kaibab Trail. “So steep was it,” said Matthes, “that the animals fairly slid down on their haunches.” There were some accidents, but none serious. In traveling down the Canyon to the River, they had to ford Bright Angel Creek 94 times. A prospector lent them his boat to cross the River. From this time on, the survey used Bright Angel Canyon as its regular route of travel across the Grand Canyon, and it remains in use today as the only maintained cross-canyon trail.

Triangulation during the survey required signalling by sun mirror from Cape Royal to Kendrick Peak in the San Francisco Peaks, fifty miles away. Observations were taken with painstaking care. The Vishnu, Bright Angel and Shinumo quadrangles were finished in 1905, and the remaining areas in 1920-1923 by Richard T. Evans. Special care was taken to make the maps accurate, clear and beautiful. To preserve the detail, they were done on a larger scale than usual in Geological Survey maps. The usual method of drawing contours was modified so as to reveal better the sculpturing of cliffs. Today new methods such as aerial photography are available to the mapmaker, but the Matthes Grand Canyon maps have never been surpassed as examples of topographic art.

The features on any map must be labeled with names, and Matthes was faced with the fact that many formations in the Grand Canyon were larger than most mountains east of the
Mississippi, and yet had no names. It was his decision to continue the "heroic nomenclature" begun by Dutton, although Matthes incorrectly thought that this class of names had been given by Powell.\textsuperscript{11} So Dutton's Vishnu Temple was joined by Matthes' Krishna Shrine, Solomon Temple, Wotans Throne and Walhalla Plateau. He has been criticized for doing this, but perhaps it is better for the wonder of the world to bear the names of gods and heroes of every nation rather than the names of local miners, or American Indian names which were not applied by the Indians themselves, or purely descriptive names such as Red Butte and Cedar Mountain, or American presidents whose names have been given to features everywhere in the United States.

Francois Matthes was a naturalized American, who was born in Holland in 1874, had lived in Switzerland and studied at Frankfurt, Germany, and the Massachusetts Institute of Technology. He served in the Department of the Interior for fifty-one years, and after his work at the Grand Canyon he mapped Yosemite Valley, the San Andreas Fault and Mount Rainier, and wrote the monumental \textit{Geologic History of the Yosemite Valley}.\textsuperscript{12} He died in California in 1948.

\textbf{SCIENTIFIC EXPLORATION}

Geologists continued to study the magnificent series of rocks in the Grand Canyon, and made many discoveries of fossils.

After Matthes' topographic map was completed, Levi F. Noble prepared a geologic map of the Shinumo Quadrangle for the United States Geological Survey, showing the different kinds of rocks in that part of the Canyon, and tracing the faults.\textsuperscript{13} This map was published in 1914.

Fossil footprints of four-footed animals were found in the Coconino Sandstone and Hermit Shale by Charles Schuchert of Yale University in September, 1915.\textsuperscript{14} Fossil plant impressions were also found. This aroused great interest in the world of science. More of the tracks were collected by Noble and others, and Schuchert and Richard S. Lull published papers concerning them in 1918.\textsuperscript{15} Since no bones were found, there was some discussion as to whether the creatures which made the foot-
Plane table station for the first topographic mapping of Grand Canyon stands on Cape Royal. Survey was directed by Francois Matthes. (Photo by F. E. Matthes, 1902).

prints were reptiles, amphibians, or some other ancestral animals.

THE FIRST AUTOMOBILES

On January 4, 1902, a remarkable steam-driven automobile, a new Toledo Eight-horse, chugged out of Flagstaff toward the Grand Canyon. The driver was Oliver Lippincott, the guide was Al Doyle, who had done some work on the road previously, and the passengers were Thomas M. Chapman and a Los
Angeles journalist who wrote a story describing the historic journey, the intrepid Mr. Winfield C. Hogaboom.\textsuperscript{17}

The machine managed to get out of sight of the people of Flagstaff before it broke down the first time. Delayed, the men had to seek shelter for the night in a cowboy's cabin, and as it was very cold, the motor froze. Expecting to make the trip in one day, they had not brought food or extra water. They broke a water gauge and a sprocket chain, and finally ran out of gas 18 miles from the Canyon. Winfield Hogaboom had to walk to Grandview for help. Pete Berry rescued the other three men, and hauled gas from the railroad terminal to the machine, which was finally nursed up to the rim five days after it had left Flagstaff. Lippincott and Berry made the return trip in a mere seven hours.\textsuperscript{18}

The first automobiles to make the trip south across the Kaibab Plateau to the North Rim, a Locomobile and a Thomas Flyer, left Kanab in June, 1909, and made the trip in three days.\textsuperscript{19} Gasoline had been cached in advance by team, 10 gallons for every 30 miles, but the passengers had to do a lot of road repair work on the way. The two machines wore out nine tires on the trip, which were exhibited by the U. S. Rubber Company to illustrate their durability. The trip was sponsored by the irrepressible North Rim promoter, E. D. Woolley and his brother, E. G. Woolley, Jr., of Salt Lake City.

By this time, automobiles were already a common means of traveling, and as part of the agitation for better roads which was being felt across the country, the Flagstaff newspaper proposed the construction of a new road to the Grand Canyon.\textsuperscript{20} Apparently nothing was done, since a new road was still being proposed in 1911. In that year, the first car made its way along the Williams road to Grand Canyon Village, driven by Judge Clark of Phoenix.\textsuperscript{21} In 1912 a new Perry car made the trip to Flagstaff in just over three hours.\textsuperscript{22} The Forest Service did some work on the Williams road, but all roads leading to the Grand Canyon were dusty and rough at that time. Sidney Ferrall, the postmaster at Grand Canyon Village, was the first to own a car there, about 1914.\textsuperscript{23}

The Forest Service began work on a new graded road from Jacob's Lake to the North Rim in 1913, and E. D. Woolley
First automobile to reach Grand Canyon, this new Toledo Eight-horse carried four men, pulled trailer, broke down several times. Trip from Flagstaff took five days. (Photo by W. C. Hogaboom, 1902).

began an automobile stage line over this road from Lund, Utah, in 1915.\textsuperscript{24}

In spite of the poor roads, automobile travel steadily increased, and at a much faster rate than the increase in railroad passengers. By 1926 automobiles overtook the railroad as the most popular way to travel to the Grand Canyon, even though no paved road existed at that time.

BRIGHT ANGEL HOTEL

The Bright Angel Hotel was started in 1896 by J. Wilbur Thurber.\textsuperscript{25} There was a cabin which was used as an office, and
several tents which were rented to tourists. When the arrival of the railroad put Thurber’s stage line out of business, his Bright Angel development was acquired by Martin Buggeln, who managed the hotel in association with the Santa Fe Railroad until 1905, when he moved out to the old Hance Ranch, which he had bought. Buggeln, appointed in 1902, was the first postmaster of Grand Canyon Village.

Also in 1902, the first Easter sunrise service at the Grand Canyon rim was held in the Bright Angel Hotel by the Rev. T. C. Moffett of Prescott, a Presbyterian missionary, and an offering was taken for American Indian missions.

When the El Tovar Hotel was built, the Bright Angel Hotel was temporarily closed and then reopened as Bright Angel Camp in 1905, offering simpler and less expensive accommodations. The Fred Harvey company ran both establishments, charging 75 cents a day at Bright Angel Camp, European plan. As the years went by, Bright Angel Camp collected a series of cabins and tents from various sources.

**THE BRIGHT ANGEL TRAIL**

In 1903, Ralph Cameron had control of the Bright Angel Trail, which he managed as a toll trail, charging $1.00 for every tourist who rode down into the Canyon. His right to do this was questioned by the Santa Fe Railroad, whose station grounds were not far from the head of the trail, and who planned to build a new hotel there. Beginning in 1902, Cameron located mining claims of various kinds on the Santa Fe station grounds, on the site where the hotel was to be built, on Indian Gardens halfway down the trail, and on several of the most scenic points on the Canyon rim. Eventually these claims, consisting of some 13,000 acres, virtually surrounded the Railroad’s lands and were in such a position as to control the tourist trade. Since there was no mineral of value located in these claims, they could not be patented, but were the subject of long legal battles initiated by the Railroad and carried on by the Forest Service and the National Park Service. At least one of the cases went all the way to the United States Supreme Court, and Cameron’s claims were finally declared invalid, but in the meantime he held onto them.
An early tourist accommodation in the Grand Canyon Village area was the Bright Angel Hotel, started in 1896 at the head of the Bright Angel Trail.

Cameron built a hotel on one of his claims, next to the railroad terminal and the Bright Angel Hotel. His hotel was a log cabin which had been a stage station at Red Horse. It was dismantled, moved up to the Canyon rim log by log, reassembled, and a second story was added. After 1910 it became the post office, and is now one of the cabins at the Bright Angel Lodge. In order to keep the passengers from seeing Cameron's Hotel first, the Railroad moved its terminal several hundred feet to the east, so that people would have to
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pass the Bright Angel Hotel if they were going to Cameron’s.

Ralph Cameron continued to collect tolls on the Bright Angel Trail for many years. Ownership of the trail reverted to Coconino County in 1906, but Cameron was given a franchise to collect tolls for the county. He maintained his claims at Indian Gardens, the location of the only spring of water on the trail. Cameron’s caretaker would not allow the trail riders to drink from the spring, and sanitary conditions there were very bad. Attempts to remedy the conditions were stymied. This was the situation facing the new administration at Grand Canyon in 1919.

EL TOVAR HOTEL

A first-class hotel was desired as soon as the railroad reached Grand Canyon, and the Santa Fe asked Charles F. Whittlesey to design a 100-room structure, to be called the Bright Angel Tavern, which would combine the architecture of the “Swiss chateaux” with that of the “castles of the Rhine” in native boulders, Oregon pine logs and boards. The building cost $250,000 to construct, and by the time of its opening on January 14, 1905, it had been renamed El Tovar in honor of the Spanish explorer who had first visited the Hopi towns, but not the Grand Canyon, in 1540. The Fred Harvey company, which ran all the hotels and restaurants along the Santa Fe lines, already had a Cardenas Hotel in Trinidad, Colorado. Their new El Tovar boasted the most fashionable of accommodations, including a fine big dining room overlooking the Canyon, small private dining rooms, large fireplaces, a huge lobby decorated with animal heads and Indian pottery, a Music Room, Art Room, Ladies’ Lounging Room, Barbershop, Amusement Room, Club Room, Solarium, Grotto, and roof gardens. The building was completely equipped with electric lights powered by a steam generator. Fresh fruits and vegetables were grown in greenhouses, and fresh eggs and milk came from the hotel’s own chicken house and herds. All water for the hotel, and for all the operations at Grand Canyon Village, was brought in by railroad tank car from Del Rio, 120 miles away.

A short distance east of El Tovar, a replica of an Indian pueblo, called the Hopi House, was constructed. Hopi Indians
were encouraged to live there, carry on their native crafts, wear native costumes, and put on dances for the entertainment of the tourists. Displays of Indian handiwork and a salesroom of authentic items added to the attraction. Navajo hogans in replica were built nearby. The Hopi House was the first full-fledged curio shop at Grand Canyon, although the other hotels had long engaged in the sale of Indian crafts.\textsuperscript{36}

Fred Harvey is still operating both El Tovar Hotel and the Hopi House today in the same buildings and with much of the same atmosphere of 60 years ago.
JOHN G. VERKAMP

One of the tents of the Bright Angel Hotel served as the first curio stand run by John G. Verkamp, for the Babbitt Brothers' Trading Company. After a few weeks, Verkamp sold his stock to Martin Buggeln.

Verkamp returned in 1905 to build a store east of the Hopi House, where he went into the curio business on his own. The insatiable desire of the tourists for mementos of their journeys, particularly those with an Indian theme, has produced a demand which Verkamp's and the other curio shops have met since that time. On display in Verkamp's is Louis Aiken's large oil painting, "Evening — Grand Canyon," which the well-known artist painted in 1911. Aiken also is known as the muralist of the Southwest Indian Room of the American Museum of Natural History.

FOREST SERVICE ADMINISTRATION

Grand Canyon was under the administration of the United States Forest Service from 1905 to 1919, when the national park was created. The first ranger station was established near Rowe Well, where water was available. Later there was a ranger station near El Tovar Hotel.

The policy of the Forest Service was to encourage many different kinds of land use and development in the area, and at the same time to protect the forests. A fire tower was erected at Hopi Point in 1909, and firefighters were sent out whenever the smoke of a forest fire was spotted. There were several fires, including a large one along the road to Grandview, and the Forest Service undertook reforestation in the burned area with qualified success.

Game management within the area of the Game Reserve consisted of protecting the deer and killing the predators, and for this purpose game wardens were hired.

Cattlemen received grazing permits for the forest areas, and because there were no fences, range cattle and horses and Indian ponies were constantly seen around the railroad terminal, hotels and scenic Canyon points. Some of the visiting ladies were frightened when they encountered horned beasts.
so near the rim of the Canyon, and the Forest Service saw the need for drift fences around the area of greatest public use.\textsuperscript{41}

The increased number of people actually living near the railroad terminal, including railroad and hotel people as well as the earlier settlers, posed a problem for the Forest Service. Buildings, shanties and tents dotted the area without plan, and rubbish heaps marred the landscape. In 1910, Forest Supervisor W. R. Mattoon proposed the first systematic townsite plan for Grand Canyon Village, including the construction of roads and fences, relocation of the railroad workers’ camp, construction of a new headquarters and the location of a public campground. Due to lack of funds, this plan was not followed in detail, but some progress was made in the beautification of the area and the establishment of a community to the south of the railroad tracks. The Forest Service was the first agency to view the Grand Canyon community as a whole, and to make plans for its orderly development.

Another plan was prepared in 1918 by Frank A. Waugh for the Forest Service.\textsuperscript{42} By this time, there were 300 people living at Grand Canyon. In this report, the Forest Service recognized that the primary purpose of the Village is to provide accommodations for the tourists who visit the Canyon, and that there is really no other reason for the existence of a village there, so far from a reliable source of water.

\textbf{GRAND CANYON SCHOOL}

Grand Canyon was not only a scenic attraction and a place to visit; it was also home to a growing number of families. These people formed a small village, and had the needs of all such communities.

Not wishing to send their children to school in the closest towns, some 60 miles away, the people of Grand Canyon Village organized a school in 1911. The first session was a summer school taught by Miss Grace Miller of Pittsburgh, Pennsylvania, and was held in a building “with a leaky roof,”\textsuperscript{43} near the post office and Bright Angel Camp. Soon afterwards, a better schoolhouse was built east of the terminal, and provided with a piano by W. W. Bass. A Parent-Teacher Association
was organized in 1914. Today, Grand Canyon possesses both an elementary school and a high school.

**HERMIT CAMP**

One way for the Santa Fe people to avoid tolls and trouble on the Bright Angel Trail was to build a trail of their own. Permission was granted by the Forest Service, and in 1910-1912, the Hermit Rim Road was built out along the rim to the west of Bright Angel Camp. This was strictly a road for the open-top touring stages which were run out from the El Tovar, and no automobiles were allowed on it until 1919, so as not to frighten the horses.

Hermits Rest, a stone-and-log building where weary travelers could find refreshment, was built at the end of the road where the trail begins, in 1914. The architect was Mary Jane Colter, who also designed The Lookout, built on the rim by Bright Angel Camp at about the same time. Hermits Rest included a huge fireplace within which tourists could sit and warm themselves in cold weather. Miss Colter also brought a bell from New Mexico, and saw that it was hung in a stone gateway near the building. Hermits Rest today serves as a curio shop and viewpoint.

From the end of the road, a new trail was constructed down the east side of Hermit Basin and through Hermit Canyon to the River. The Hermit Trail was better made than any other in the Grand Canyon, being actually paved with sandstone in some sections, with rock walls built along the outer side.

A rest house was constructed at Santa Maria Spring, two miles down the trail, in 1913. Hermit Camp itself was located on a flat area of the Tonto Plateau near a source of water. Regular mule trips were operated to the camp, where the tourists could spend one or more nights in the best of outlying camp accommodations. To supply the camp with materials more easily, an aerial tramway was erected, with the upper terminus on the west side of Pima Point. The car could be lowered the distance of more than 3000 feet in half an hour. It is said that a Ford automobile was lowered by this means into the Canyon, and served for several years within the camp on a road less than a mile long. Under National Park Service auspices, a
telephone line was extended to Hermit Camp.

Hermit Camp continued in operation until 1930, when the opening of the Bright Angel Trail to free travel and the construction of the new South Kaibab Trail and Phantom Ranch had made it superfluous. The trail was abandoned and later the buildings and tramway were removed. Most of the trail is still passable on foot.

RIVER RUNNERS

Before the turn of the century, men who braved the Colorado River had various reasons for doing so. They were scientific explorers, railroad surveyors, trappers or prospectors.
Apparently Arthur R. Sanger, John A. King and their boatman, E. B. "Hum" Woolley, were miners. They left Lees Ferry on August 17, 1903, in an eighteen-foot oaken boat, and by the end of October had reached Yuma. Sanger’s meager diary describes the “great underground river” whose walls are “miles high,” and the “terrible rapids,” but makes no mention of minerals. 

Between September, 1907, and February, 1908, Edwin R. Monett and Charles S. Russell ran the river from Green River, Utah, to Needles, California. Albert Loper was with them as far as Cataract Canyon, where his boat was damaged. He made repairs, but when he reached Lees Ferry the others had already gone on, so he left the river there. A second boat was lost in Hance Rapid. They took the third boat as far as the Bright Angel Trail, and spent three days resting at El Tovar Hotel. When they continued downstream, they soon lost the last boat, which was torn out of their hands while they were lining it through Hermit Creek Rapid. Monett and Russell hiked up to Louis Boucher’s cabin, and “the Hermit” helped them find their boat and repair it. These men were miners who expected to find placer locations along the Colorado.

Beginning in 1909, the chief reason given for attempting a Colorado River trip by most parties was simply the journey itself. Running the river was beginning to be a sport, and men did it for the same reasons that men climb mountains. The first full-fledged sportsman’s trip through the Grand Canyon was made by Julius F. Stone, an Ohio manufacturer. Stone’s companions were Seymour S. Deubendorff and the experienced Nathaniel Galloway, who helped him design an excellent light boat, decked over except for a cockpit in which a single oarsman sat. The trip from Green River, Wyoming, to Needles was made in only two months and one week (September 12 to November 19, 1909) without serious incident, and neither Stone nor Galloway had a single upset. Stone took an excellent series of photographs.

THE KOLB BROTHERS

Ellsworth L. Kolb and Emery C. Kolb first came to the Grand Canyon in 1902. Ellsworth took a job as bellhop at
the Bright Angel Hotel, and Emery had intended to work in the old Hance asbestos mines, but they were not operating at the time. Soon the brothers had an opportunity to buy a little photographic studio in Williams, brought it up to the Canyon, and went into business taking pictures of parties starting down the Bright Angel Trail. They slept out in the open, hung a blanket over an old prospect hole for a darkroom, and hauled water from Rain Tank and Indian Gardens. They located themselves at the head of the Bright Angel Trail in a tent replaced by a wooden building in 1904, and by 1906 they had finishing rooms located down at Indian Gardens.

Emery married in 1905, and his daughter, Edith, born in Los Angeles in 1907, grew up on the rim of the Grand Canyon.
The Kolb brothers are nationally known for their boat trip down the Colorado River in 1911-1912, the first such trip to be recorded on motion picture film.\textsuperscript{51} They left Green River, Utah, with two flat-bottomed, 16-foot boats on September 8, 1911. Their companion, James Fagin, left at the foot of the Canyon of Lodore. In November they arrived at the Bright Angel Trail and hiked up to their Canyon home. A month later, they started again with Hubert R. Lauzon and completed the trip at Needles on January 18, 1912. Bert Lauzon later served for 23 years as a Park Ranger at Grand Canyon. Ellsworth made a trip from Needles to the Gulf of California in May 1913.

By this time Emery was already in the East, giving lectures illustrated with his motion pictures and slides to packed houses in many cities.\textsuperscript{52} In 1915 he erected a showroom at the head of the Bright Angel Trail, where he began to give lectures on the river trips and the Grand Canyon which still continue, although in a recorded form since 1948, when an illness weakened his voice. More than 50,000 of these lectures have been given to Canyon visitors in the past 50 years. The Kolb Studio was enlarged to substantially its present form in 1926.

The Kolb brothers are also noted for their many explorations within the Grand Canyon itself, including the discovery of Cheyava Falls in Clear Creek Canyon in 1908.\textsuperscript{53} Some of their other expeditions are mentioned in the following chapter. Ellsworth and Mrs. Blanche M. Kolb, Emery’s wife, died in 1960 and their bodies lie in the Grand Canyon cemetery. Emery still lives in the home on the rim, where he introduces his recorded lectures, paints views of the Canyon, enjoys recounting tales of the early days, and dreams of another trip down the Colorado River.\textsuperscript{53}

THOSE WHO FAILED

Not everyone who embarked on the voyage through the Grand Canyon succeeded in going all the way. In fact, some who started out with the intention never reached even the upper end of Grand Canyon. Others gave up part way through.

The next few parties after the Kolb brothers’ 1911-1912 trip found the going too rough.\textsuperscript{54} J. H. Hummel and David Miller started out at Green River, Wyoming in 1914. Miller quit at
the lower end of Cataract Canyon, and a discouraged Hummel stopped at Bright Angel Creek and gave his boat to Emery Kolb.

Charles S. Russell tried again with A. J. Tadje and a motion picture photographer named Clemens in 1915, but climbed out of the Canyon on the Bass Trail. This was Russell's second failure after his initial success with Monett. In 1914 he and Bert Loper had met disaster in Cataract Canyon.

NORTH RIM: THE ARIZONA STRIP

The Grand Canyon isolates the northwestern corner of Arizona, and before the late 1920's, made it all but inaccessible from the south. The North Rim and the rest of the territory to the north of the Canyon is called the "Arizona Strip," a land which is geographically and culturally much closer to Utah than to Arizona. It was settled by people from Utah who shared the dominant Latter-day Saints religion of Utah, and it seems understandable that Utah should have desired the area, especially after 1896, when Utah was a state and Arizona was still only a territory.

Utah made her first unsuccessful attempt to annex all of Arizona north of the Colorado River soon after she received statehood in 1896, by a resolution of the Utah state legislature and bills introduced in both houses of Congress. Among the reasons given for the move was the fact that the area was a haven for evaders of the law. Arizona, having access to the area only by way of a ford across the Little Colorado River and Lees Ferry, made few attempts to enforce justice in the Strip. It was a place of settlement for Mormon polygamists who refused to surrender their way of life when Utah and the Church of the Latter-day Saints attempted to end the practice.

Another annexation attempt was made in 1902, when another bill was introduced in Congress and Utah legislators were delegated to confer with the Arizona territorial legislature. The Arizonans voted not even to listen to the delegates, but Utah did not give up. Still another bill was introduced in the Senate in 1904, drawing forth protests from Mohave County.

Local sentiment in the Arizona Strip does not seem to have
The Story of Man at Grand Canyon

Modes of crossing the Colorado River: (top) A scow to carry passengers while their horses and mules swam; (right) cage on cable could carry passengers or a mule across the river; (top, right) in 1921 the Kaibab “swinging” suspension bridge was built.
favored the efforts of Salt Lake City, and the whole project was dropped when Arizona became a state in 1912.  

**RUST’S CAMP AND THE CABLE CROSSING**

The North Rim remained isolated territory, covered by deep snows each winter, and its development lagged a decade or more behind that of the South Rim. But E. D. Woolley, one of the most prominent men in Kanab, conceived the idea of building a trail across the Grand Canyon, with a cable crossing at the River, to bring tourists across from the Santa Fe terminal. In 1903, with several men including David D. Rust, his son-in-law, “Uncle Dee” Woolley formed the Grand Canyon Transportation Company to develop the route pioneered by Francois Matthes the year before. The trail was improved and the cable was brought down rolled up from both ends and loaded on two mules at once. In spite of the clumsiness of this arrangement, only one mule was killed in the operation. The cable was installed near the mouth of Bright Angel Creek, the
present site of the Kaibab Bridge, in 1907. A cage big enough for a mule was suspended from it on pulleys, and was pulled back and forth by a lighter cable wound on drums.

A trail continued up the other side to the Tonto Platform, then east along that shelf to Indian Gardens by way of Burro Spring. This was the old "Kaibab Trail" or "Cable Trail," which continued in use until the 1930's, when the River Trail made it obsolete.

A camp was established during the trail construction near the mouth of Bright Angel Creek, which became a popular stopping place for tourist parties guided by Dave Rust, and was called Rust's Camp. He constructed irrigation ditches there and planted trees, cottonwoods for shade and various fruit trees. In 1913, Theodore Roosevelt stopped there briefly, so it became Roosevelt's Camp until 1922, when it was named Phantom Ranch after nearby Phantom Creek.

UNCLE JIM OWENS

"Uncle Jim" Owens lived for many years on the North Rim, and did more than any other man to kill off the mountain lions there. He was a Texan who had lived and worked at the famous Goodnight Ranch in the panhandle country, where there was a large herd of bison, which everybody called "buffalo." He was a good friend and partner of Colonel C. J. "Buffalo" Jones, and about 1905 succeeded him as game warden in the Yellowstone.

Grand Canyon Game Reserve was set aside in 1906, and soon afterwards Uncle Jim was appointed warden by the Forest Service. He had a cabin near the rim and another one in a cave near a spring. In those days the idea of game management was to protect the harmless forms of life and to kill off the predatory animals such as coyotes, bobcats, great horned owls, hawks, eagles, and especially the mountain lions. The Kaibab was being used for grazing, and mountain lions sometimes killed horses and cattle as well as deer. In some 12 years of hunting on the North Rim, Uncle Jim claimed to have shot 532 mountain lions, and has been credited by others with far more than that. He collected a bounty on every one he shot, making as much as $500 in a single day.
Hunting lions with dogs became a great sport on the northern edge of the Grand Canyon, and Uncle Jim served as guide to many parties. In 1908, Zane Grey, later the famous writer of Western novels, came in with the idea of capturing mountain lions alive for sale to zoos and circuses. With Uncle Jim, Buffalo Jones, Jim Emmett and a Navajo Indian, he went out to the Powell Plateau. Their dogs would follow a lion's trail and tree the creature. The men would come up, Buffalo Jones would climb the tree, lasso the lion and pull him out. Uncle Jim and Emmett would tie the lion's feet, muzzle it and clip its claws, and then chain it to a tree. Zane Grey took pictures of the whole process. When they were ready to come out, they packed the lions on the horses, two lions on each horse. The lions had to be fed and watered as they traveled. At least one lion was brought across the Canyon on horseback, taken across the River in the cage on the cable at Bright Angel Creek, and kept on display at El Tovar for some time.

In July, 1913, Theodore Roosevelt came across the Canyon with his sons Archie and Quentin, and their cousin Nicholas. They stayed with Uncle Jim and hunted mountain lions on the North Rim and Greenland (the Walhalla Plateau). None of these men realized that by killing the mountain lions, they were allowing the deer to multiply unchecked, to browse the trees and plants to the point of disappearance and finally to die of starvation by thousands. But it is clear that men like Theodore Roosevelt loved the wilderness, and the Grand Canyon in particular, as a place where the soul of a man can be recreated:

The beauty and charm of the wilderness are his for the asking, for the edges of the wilderness lie close beside the beaten roads of present travel. He can see the red splendor of desert sunsets, and the unearthly glory of the afterglow on the battlements of desolate mountains. . . . He can ride along the brink of the stupendous cliff-walled canyon, where eagles soar below him, and cougars make their lairs on the ledges and harry the big-horned sheep. . . . The joy of living is his who has the heart to demand it.

Uncle Jim knew the buffalo were disappearing fast and needed to be saved from extinction. His experience with the buffalo herds in Texas and the Yellowstone led him to think that he could start a herd successfully on the North Rim. In
partnership with Buffalo Jones and E. D. Woolley, he brought several buffalo to the Grand Canyon country and pastured them near Bright Angel Point. They did not thrive in the forest, and much preferred the flat, open land of House Rock Valley, where the herd still survives today. The buffalo were managed for a time by the Grand Canyon Cattle Company (The Bar Z Brand), but were finally sold to the State of Arizona. They are now protected on a buffalo refuge, where special hunting permits are given for the surplus animals from time to time. There was some talk at the first of crossing the buffalo with cattle, but apparently nothing came of this.

Many stories are told about Uncle Jim. He is said to have raised a mountain lion kitten which became quite tame, played with a pup, and followed its owner around like a dog. A less credible tale said that he fell from a cliff onto the back of a mountain lion, which he rode for several feet. In his later days at Grand Canyon he was described as a lean, bent figure with long white hair and a drooping white moustache. He retired around the time of the creation of the national park, tended the buffalo herd for several years, and died in 1936.

HAVASU CANYON

Mining interest in Havasu Canyon revived in 1902, when the United Gold and Platinum Company began a wagon road from Grand Canyon Village which was planned to descend Topocoba Canyon to Supai. At the same time a bill was introduced in Congress to grant a railroad right-of-way through the tiny Havasupai Reservation. In recommending the bill, the House Committee on Indian Affairs said, "This small reservation should not interfere with the mineral interests of northwestern Arizona and . . . we believe that the rights of the Indians will be fully protected and that the bill should pass." The bill did pass the House, but died in the Senate Committee on Indian Affairs. Neither the railway nor the road was completed, although the road was extended into Topocoba Canyon for a short distance. Meanwhile, the miners had built a camp below Havasu Falls and had constructed a series of tunnels, steps and pegs down through the travertine beside Mooney Falls, making a descent possible. Below Mooney Falls they
"Uncle" Jim Owens herds buffalo in House Rock Valley. As government hunter on North Rim, Owens killed more than 500 mountain lions. (Photo by Ernie Appling).

erected an iron scaffolding to support wooden ladders ascending 250 feet straight up the vertical cliff to a mine tunnel entrance. The mineral found there was vanadium, used in the production of steel. Ore was packed out laboriously until the great flood of 1910 destroyed the buildings and much of the equipment of the company, and ended the operation. The 1910 flood was the most disastrous in the memory of the Havasupai. It swept away most of the homes and farms of the Indians, as well as the school. The appearance of the falls was altered radically, Havasu Falls in particular being greatly reduced in width and height. Fortunately most of the people were absent from the canyon on their annual hunting and gathering trip to the rim, and there were no known deaths.
The government began relief work immediately. The first superintendent from the Office of Indian Affairs had moved into Havasu Canyon in 1904. After the flood, a resident physician who also acted as superintendent was sent into the Canyon. His wife was a registered nurse. The school was reopened in a tent on the north side of the creek, formerly wasteland. By 1912 there was a new wooden school building complete with the bell rescued from the original school and the old school tent, with frame construction added, became the general store. The government also constructed two-room frame houses for the homeless people, who did not appreciate them. The Havasupai instead rebuilt their old brush shelters or "hawas" and used the wooden houses for storage of food and tools. At this time they ceased using the old rock storage bins up on the cliffs. When asked why they would not live in the houses, they replied that they were too hot in the summer and too cold in the winter. In later years some families moved into these houses, however.

The customs of the Havasupai gradually altered. For example, they adopted the white man's method of burial and the "Western" dress of the time. Many of them learned English, but the language most often heard in the home and village was still the Yuman speech of their ancestors.

THE ESTABLISHMENT OF GRAND CANYON NATIONAL PARK

Theodore Roosevelt was not the only president to be impressed by the Grand Canyon. William Howard Taft visited it in October, 1909, and in the next month his Secretary of the Interior, Richard A. Ballinger, proposed that it be made a National Park. Early in 1910, and again in 1911, Senator Flint of California introduced bills to that effect, which died in committee. Representative Hayes of California introduced another bill in 1911 which would have named the area Carnegie National Park, in honor of the industrialist and philanthropist's work on behalf of world peace. Others suggested naming it Powell National Park, after Major John Wesley Powell.

Arizona became a state in 1912, and this fact strengthened the movement to create a National Park. At the time, both the
secretaries of Interior and Agriculture were in favor of it. The Arizona State Legislature adopted a resolution favoring it, and several private organizations such as the Sierra Club and the Chambers of Commerce of Phoenix City and Yavapai County added their voices. Local sentiment still feared the loss of grazing lands, timber and minerals in the large park which had been proposed. The Kanab newspaper editorialized against the project on these grounds.

Representative Carl Hayden and Senator Henry Fountain Ashurst of Arizona then set out to give Arizona a great National Park which would not include vast tracts of grazing land or forests. In early 1917, they introduced bills in the House and Senate which designated a National Park including only the more spectacular eastern part of the Grand Canyon, with very narrow strips along the rims. Provisions were made in Ashurst’s bill to protect the rights of owners of valid land claims already established in the area, and a special clause prohibited the building of any structure between Hearst’s lands and the rim. Concessions were to be let to the “best and most responsible bidder.” Several amendments were added, repealing the National Monument and Game Reserve within the area of the National Park, protecting the rights of the Havasupai Indians, allowing the Secretary of the Interior to grant rights of way for railroads, and limiting mining and power and reclamation projects to those “consistent with the primary purposes of the park.”

As to that primary purpose, it had been defined in the Act of August 25, 1916, creating the National Park Service, “To conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” Ashurst’s bill provided that the “administration, protection and promotion of said Grand Canyon National Park shall be exercised under the direction of the Secretary of the Interior, by the National Park Service,” subject to the act mentioned above. With the amendments, the bill passed both houses of Congress and was signed by President Woodrow Wilson on February 26, 1919. On that date, Grand Canyon National Park came into being.
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The National Park: Period of Establishment, 1919-1938

In the period beginning with the establishment of Grand Canyon National Park, the National Park Service took charge of the area and began to put into effect the policies which would govern its protection, development and interpretation. Patterns of use were established for the rapidly increasing numbers of visitors, and new facilities were provided by the National Park Service and by the major concessioners, Fred Harvey on the South Rim and the Utah Parks Company on the North Rim. Scientific investigations of the area were encouraged and aided, and the results were communicated to the visitors. By the end of Superintendent Tillotson's period of service in 1938, the main outlines of National Park Service administration at Grand Canyon could be seen clearly.

THE NATIONAL PARK SERVICE

The Act of Congress establishing Grand Canyon National Park on February 26, 1919, placed it under the administration of the National Park Service, an agency of the Department of the Interior which had been authorized only three years before. There had been national park rangers in the field for less than one year.¹ The first director of the National Park Service was Stephen Tyng Mather, an energetic businessman who had made a fortune in borax, and a far-sighted conservationist who gave much of his life and his fortune to the cause of the national parks. "He laid the foundation of the National Park Service, defining and establishing the policies under which its areas shall
be developed and conserved unimpaired for future generations," says the memorial to Stephen Mather which stands at Mather Point on the South Rim of the Grand Canyon. Its words conclude with the simple statement, "There will never come an end to the good that he has done."

Before the establishment of the National Park Service, the national parks and monuments had been under various governmental agencies. Some were under the Departments of Agriculture or Interior; others under the War Department, and protection was afforded to many of them by the United States Army. Grand Canyon had been a National Monument under the Forest Service, and because the National Park Service was not ready to take over the administration of the new Grand Canyon National Park, the Forest Service continued to administer its affairs and look after its protection until August 15, 1919, when the first acting superintendent sent by the National Park Service, William Harrison Peters, arrived. The park was formally dedicated on April 30, 1920, in ceremonies at the Powell Memorial.

The young National Park Service was faced in Grand Canyon with all the problems of moving into a new area and establishing the policies of administration, protection and management which would be appropriate to a great national park. There was considerable opposition at the outset from a few local interests, and inadequate finances for the park staff, as congressional appropriations were meager in those first years.

Between 1919 and 1927, a period of eight years, Grand Canyon National Park had six acting superintendents. The first, William Harrison Peters, is remembered by local residents as a young fellow recently returned from service in the army in the First World War. He served at Grand Canyon only 11 months before he exchanged positions with the superintendent of Mount Rainier National Park, DeWitt L. Reaburn, who remained as superintendent at Grand Canyon from October, 1920 to December, 1921. From then until February, 1922, the park was administered by John Roberts White, superintendent of Sequoia and General Grant National Parks. Walter Wilson Crosby was superintendent for the next two years, but went on a trip around the world during the first six months of 1923, during which George C. Bolton acted as superintendent. In
January, 1924, John Ross Eakin became superintendent and served for three years and three months, longer than any of his predecessors. Much was accomplished in spite of the short tenure of the early superintendents, but in this situation it was difficult to establish continuity of policy.

What was needed was an experienced superintendent who knew the area and would provide stability by serving for a considerable period of time. This man was Miner Raymond Tillotson, the park engineer, who had been at Grand Canyon since 1922. Born in Indiana in 1887, Tillotson had graduated from Purdue University in 1908 with a degree in civil engineering, and had worked for the Forest Service and then as construction engineer for the Standard Oil Company in San Francisco. His son, Dean, suffered from a severe respiratory illness and could not stay in the damp climate, so when Tillotson was offered a position with the National Park Service in Yosemite and then at Grand Canyon, he accepted. Dean recovered nicely in the high, dry air and his father served as superintendent from April, 1927 to the last day of 1938, when he was promoted to the post of Regional Director of the National Park Service in Richmond, Virginia and then in Santa Fe, New Mexico.

The superintendent was assisted by a clerical staff and a small ranger force. In 1920, funds permitted the hiring of only four park rangers to handle traffic, fire control and police work, and one checker for the entrance station. Through the next two decades, this number grew to about 10 permanent rangers and more or less the same number hired in addition for the summer season only. In retrospect, the accomplishments of such a small force seem amazing.

Most of the funds in this early period had to be spent for necessary construction of buildings, roads and trails, and there was always plenty of work for the park engineer and the construction and maintenance crews.

BOUNDARY CHANGES

Congress revised the boundaries of Grand Canyon National Park in 1927. The north boundary was extended to include a large representative area of the Kaibab forest. Smaller addi-
tions on the south made possible the construction of a road within the park to Desert View, and certain isolated sections were removed from the park. The effect of the change was to add 51 square miles, giving a total area of 1009 square miles within the national park.

A new Grand Canyon National Monument was proclaimed by President Herbert C. Hoover on December 22, 1932. This is an area of over 300 square miles adjoining the national park on the west, and extending 40 miles along the Colorado River. The Canyon in this section is much narrower, and it is possible at Toroweap, the main viewpoint, to look almost straight down on the River, 3000 feet below. Here there is an extinct volcano, Vulcan’s Throne, and the remains of an ancient lava flow which came down into the Grand Canyon, dammed the River and formed a lake for a time. The national monument is administered by the superintendent of the national park, and is in most respects an extension of the area of the national park.

Through this period, efforts were made to acquire small parcels of private or state-owned land within the national park by gift or exchange, and many acres were added to the park in these ways.

RANGER STATIONS

The need of the National Park Service for buildings of many kinds was seen in 1919, and construction began as soon as funds were available on an administration building, residences, warehouse, mess hall, and a combination stable-garage and blacksmith shop. Most of these buildings were of temporary character and were later replaced.

Another administration building was constructed in 1921 near El Tovar. This served until 1929, when a Park Headquarters was built in the new village area south of the railroad tracks. The older building was enlarged and became the superintendent’s residence. In 1966 an administrative wing was added to the Visitor Center one mile east of the original village development, thus centralizing administrative and visitor services activities.

Ranger cabins were built at outlying points. These were not occupied at all times, but served as shelters for ranger
The National Park: Period of Establishment, 1919-1938

patrols. In 1921, there were cabins at Rowe Well and Grand-
view on the South Rim, and at four points within the Canyon, 
Hermit Basin, Tram Camp at the mouth of Bright Angel Creek, 
Pipe Creek and Salt Creek. Pasture Wash and Desert View 
Ranger Stations were built in 1925. On the North Rim, a ranger 
cabin, barn, warehouse and machinery shed were constructed at 
Bright Angel Point, and snowshoe cabins at Muav Saddle, 
Kanabownitz Spring and Greenland Seep in 1925. Not all of 
these cabins continued in use.

TRAVEL TO GRAND CANYON

In 1919, just 44,000 people visited the Grand Canyon, and 
a majority of these came by rail.12 By 1926, those coming by 
automobile were in the majority, and this has continued to be 
the case. In 1923, more than 100,000 visitors came, and in 1929 
there were almost 200,000. From 1930 to 1933 there was an 
average decrease of 20,000 visitors per year due to the Great 
Depression, but as the economic condition of the nation im­
proved, travel increased. The number of visitors passed 200,000 
in 1935 and two years later there were more than 300,000.

Four rough dirt roads led to Grand Canyon National Park 
when it was created in 1919. Three of these reached the South 
Rim, from Williams, Ashfork and Flagstaff. Of these, the 
second was virtually abandoned and the first was shortest and 
in the best condition. In 1921, Coconino County built a dirt 
road from Maine, Arizona, which was recommended over the 
others for three years or so after it was opened. As part of the 
agreement transferring the Bright Angel Trail from Coconino 
County to the National Park in 1928, the National Park Service 
promised to build a good highway to the Grand Canyon.13 
Construction began immediately on the approach road from 
Williams, which became a fine paved thoroughfare within the 
next few years, replacing the other roads from the south. For 
a brief period, the National Park Service operated an informa­
tion station at the junction of this road with the National Old 
Trails Highway (Route 66 or Interstate 40).

The east approach road from Cameron to Desert View 
was begun in 1932 and completely paved by 1937, giving the 
South rim two approaches and making a loop trip possible.

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The North Rim could be reached in 1919 by the dirt road from Kanab, but was virtually inaccessible from the South Rim by automobile. The Lees Ferry trip was not recommended, and the nearest river crossing downstream was at Searchlight, Nevada. The automobile trip from the South Rim to North Rim by that route crossed three states and was over six hundred miles long. The direct air line distance is only ten miles. In 1929, the Navajo or Marble Canyon Bridge was completed near Lees Ferry, although the road was still quite rough. This route was paved in 1938, reducing the distance from South Rim to North Rim to its present 215 road miles. The approach road from Kanab, Utah was completely paved by 1939.

PARK ROADS

The National Park Service made efforts to complete a system of roads inside Grand Canyon National Park which would be paved and adequate for the increasing numbers of visitors coming by automobile.

The only paved road in 1919 was the Hermit Rim Road. It was opened to automobile traffic that year, and the caution which was felt about the dangerous new machines was reflected in the park speed limits: 20 miles per hour on straight stretches when no vehicle is nearer than 200 yards, otherwise 12 miles per hour, but when passing animals only 8 miles per hour and then the automobile must take the outside of the road. The Hermit Rim Road was repaved by the National Park Service in 1920, later relocated, and by 1936 it had been completely rebuilt as the West Rim Drive.

The South Entrance Road was kept well maintained, and was paved in 1931 as part of the new Williams road. A new road to Grandview and Desert View was constructed in 1926 and 1927, and later paved. This was called the East Rim Drive as a counterpart to the West Rim Drive. Rough dirt roads to Havasupai Point and Topocoba Hilltop on the way to Havasu Canyon have remained unimproved.

On the North Rim, the entrance road to Bright Angel Point was the only road until 1924, when crude forest roads were extended to Point Sublime and Cape Royal. A new drive to Cape Royal and Point Imperial was located in 1926 and com-
The National Park: Period of Establishment, 1919-1938

The National Park Service developed the cross-canyon Kaibab Trail, the River Trail and the Clear Creek Trail and acquired the Bright Angel Trail during this period, thus completing the present system of maintained trails within the Canyon. All other trails except those into Havasu Canyon were gradually abandoned and fell into disrepair.

The old Kaibab Trail led from Indian Gardens across the Tonto Platform to The Tipoff, thence down into the Inner Gorge at the cable, and continued up Bright Angel Canyon to the North Rim. In 1921 this trail was improved, the Inner Gorge section reconstructed, and the old cable superseded by a new “swinging” suspension bridge with a span of 420 feet, supported by two \( \frac{7}{8} \)-inch steel cables, 56 feet above low water. A picture taken during the construction shows the cables being carried down into the Canyon along the trail, each end rolled up and carried by a mule, with the center section supported by fifteen men at intervals. In crossing the completed bridge, it was necessary to dismount and lead the mules across one at a time. In 1923, a windstorm almost destroyed the bridge, but it was restored.

In 1924 the voters of Coconino County turned down a proposal to sell the Bright Angel Trail to the National Park Service. The Service immediately began work on the new Kaibab Trail as an alternate route from rim to rim, free of toll. The South Rim section from Yaki Point down to the Tipoff at the Inner Gorge, was completed in 1925, completely bypassing the Bright Angel Trail. Two years later, the new North Rim section down Roaring Springs Canyon was completed to replace the old head of the trail in upper Bright Angel Canyon. A trail camp and cabin were established at Cottonwood.

With the erection of a new rigid suspension bridge in 1928 to replace the old swinging bridge, the cross-canyon Kaibab Trail was finished to the highest standards of pack animal trail construction. The new bridge was 440 feet long, 78 feet above low water, supported by eight main steel cables, each 550 feet
long, 1½ inches in diameter and weighing 2320 pounds, and two additional wind cables. Since these cables could not be loaded on mules, it was necessary to have 42 Havasupai Indians who had been hired for the job station themselves at intervals of eleven feet, lift the cable to their shoulders and proceed down the trail like some gigantic squirming centipede. The old bridge, sixteen feet below the new one, remained in place during construction, and the old wire cable was used as a "high line." During the heat of summer, most work was done at night by floodlight. The completed bridge has a tunnel at one end, and will carry loaded pack mules nose to tail for its whole length.

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The Bright Angel Trail remained temporarily in the hands of Coconino County, but the so-called "mining claims" at Indian Gardens had been declared invalid. In 1924 the National Park Service, through legal proceedings, took possession of the land there. The grounds were thoroughly cleaned up, a vast amount of cans and debris removed, sanitary facilities provided, the trail relocated out of the stream, and the spring restored to provide safe drinking water.

The county finally agreed to exchange the trail for a $100,000 access road to the Grand Canyon in 1928. The National Park Service relocated and reconstructed the upper section in 1931, built a caretaker's cabin at Indian Gardens, and constructed four trailside shelters. The lower, or Pipe Creek section was reconstructed in 1939.

Civilian Conservation Corps camps were located in Grand Canyon National Park beginning in 1933 as part of governmental efforts to relieve the unemployment and economic hardship of the Great Depression. These boys accomplished much valuable emergency conservation work which might otherwise have been delayed or left undone, including a considerable amount of trail construction. They built a trail from Phantom Ranch up to the Tonto Platform and eastward, north of the River, to Clear Creek, where hikers could see Cheyava Falls and fish in the stream. This was completed in 1935. At Phantom Ranch, they built a campground, planted many trees, and constructed the swimming pool which is enjoyed today by so many weary travelers in the heat of the Inner Gorge.

The most important trail constructed by the C. C. C. was the River Trail, connecting the foot of the Bright Angel Trail
with the Kaibab Trail near the bridge. This trail was blasted into the solid rock of the Inner Gorge for most of the distance of two miles. Finished in 1936, it replaced the much longer Tonto Trail as a route between the two major South Rim trails.\textsuperscript{22}

Two trails on the North Rim, the Powell Saddle Trail out to the Powell Plateau, and the Thunder River Trail down to the falls in the Tapeats Creek drainage, were built in 1926. The latter trail was built by the Forest Service, but was maintained for a time by the National Park Service.\textsuperscript{23}

Finally, certain paths have been maintained on both rims for the use of visitors and guided walks, such as the trails to Hopi Point and Yavapai Point on the South Rim, and from Bright Angel Point into The Transept on the North Rim.
CAMPGROUNDS

Automobile campgrounds developed into one of the most popular accommodations for visitors in Grand Canyon National Park. The first public campground provided for park visitors was near Rowe Well, a private source of water. Other campgrounds were added at Grandview and Desert View, and beginning in 1925, free water was furnished to campers. A larger, better-equipped campground was opened across the tracks from the Bright Angel Camp in 1927, complete with running water.\(^\text{24}\)

On the North Rim, a campground was located near Bright Angel Point, but was moved northward in 1927 to allow more room for the new Grand Canyon Lodge. Later, two more campgrounds were opened at Cape Royal and Point Sublime.

Water was a major problem for these campgrounds, and rainfall catchment systems were tried with minimum success. Eventually, the Grandview, Cape Royal and Point Sublime campgrounds were abandoned, the Grand Canyon Village and Bright Angel Point camps were supplied with water from the nearby pumping systems, and Desert View received its water by tank truck over twenty-five miles of road.

GRAND CANYON VILLAGE

In a community of people within a national park, the National Park Service serves many of the functions of city government. In a sense, the superintendent is the “mayor,” the park engineer’s office is the planning commission, and the rangers are the police and fire departments.

The National Park Service has encouraged the people of Grand Canyon Village to form a community with as many of the aspects of town life as possible in such an isolated location. They laid out a new village area south of the tracks in 1927, and provided a plan for further growth and building to progress away from the rim, so as not to intrude upon the natural scene of the Canyon itself.\(^\text{25}\)

A community building to serve such varied uses as dances, motion pictures, a library, meetings of local groups such as the American Legion and Parent-Teacher Association, and community church services, was built in 1924 with National Park Service money augmented by private donations. It proved too
small, so a new community building replaced it in 1935.

A new school building was erected in 1939, and at various times the village recreational field was enlarged, and facilities for sports provided.

The need for a single cemetery was seen early in the period of park administration. This was surveyed in 1923, and interments which had been made elsewhere were moved to the new grounds. The American Legion donated a gateway for the cemetery in 1928. The bodies of many people intimately connected with Grand Canyon history are buried in this quiet area under the pines not far from the present Visitor Center.

At Grand Canyon, building fires are fought cooperatively by the National Park Service and the concessioners' employees. Cooperative agreements also exist between the Park Service and local law enforcement agencies.

The National Park Service inherited a telephone system about thirty miles in length from the Forest Service. As an aid in administration and fire control, it was extended across the Canyon to Phantom Ranch and the North Rim, eastward to Desert View, and westward to Hermit Camp, Pasture Wash and the Havasupai Village.

**FOREST PROTECTION**

The National Park Service took over the job of forest fire protection from the Forest Service, adopting the older fire lookout towers and building new ones. A cooperative agreement with the Forest Service provided that fires near the boundary will be fought by men of either or both services, regardless of on whose land they happen to have started. The use of radio in firefighting at Grand Canyon began in 1936, and as equipment improved it became an indispensable tool. As an aid in firefighting and forest management, a vegetative type map of the national park was prepared.

While natural conditions are preserved in the national park as much as possible, severe outbreaks of tree-killing insects and disease are controlled. The Civilian Conservation Corps did some work of this type in the 1930's, but fortunately such outbreaks are rare at Grand Canyon. In general, cutting of trees is prohibited in the national parks.
GRAZING

Another commercial activity which does not harmonize with the purpose of the national parks is the grazing of cattle, and particularly of sheep, as these animals destroy vegetation and compete with wildlife. The National Park Service did not try to put an end to grazing at Grand Canyon abruptly, which would probably have caused strong local opposition, but sought to limit it by granting permits and building fences.

One of the serious problems continued to be the presence of cattle in the area of heavy visitor use around Grand Canyon Village. Some stockmen deliberately drove their animals through the drift fence, which had to be reconstructed periodically. In order to regulate grazing effectively, a fence along the national park boundary was necessary. This was constructed by the Civilian Conservation Corps in the 1930's, and the North Rim boundary fence followed in 1938.27

During the period, numbers of cattle allowed by permit were reduced, and the grazing season was shortened, so that eventually all grazing within the national park could be ended.

THE KAIBAB DEER HERD

What is probably the classic example of a mistake in wildlife management came to a crisis in the Kaibab forest in the 1920's.28 The deer were protected, but years of persecution had almost eliminated the mountain lions. As a result, the deer herd increased rapidly from an estimated 4,000 in 1906 to about 100,000 in 1924.29 The vegetation suffered as the deer browsed it to the point of disappearance. In addition, about 10,000 cattle and 5,000 sheep were allowed grazing permits, not to mention an undetermined number of domestic and wild horses. A "high-line" appeared in the trees as the deer ate every green thing they could reach, and the forest took on the appearance of a carefully clipped city park.

The problem came to a head during the severe winter of 1924-1925, when thousands of deer died of starvation. Although the signs of starvation were unmistakable, predators were still being blamed for many of the deaths. Few of the fawns born in the mid-1920's reached maturity.
Some steps were taken to remedy the problem, such as the famous deer drive of 1924, in which a Flagstaff man received permission to drive from 3,000 to 8,000 deer in a herd from the North Rim to the South Rim by way of the Nankoweap and Tanner trails. A line of 125 men was formed on the North Rim to drive the deer to the head of the trail. Armed with noisemakers, they moved forward. A storm broke, some lost their way, and when they reached the chosen point, all the deer were behind them. Another attempt was not made.

Fawns were captured and taken to other areas to be raised in order to start new herds. Some of these were flown across to the South Rim, where they grew up and became quite tame. In fact, they took readily to being fed by hand, increased rapidly and became a nuisance around the village. By 1930, there were 120 "tame" deer in the herd, and two years later the artificial feeding was finally stopped. Other fawn transplants were less successful, a large percentage dying in transit.

In 1924 the hunting of deer in limited numbers was first permitted in the Kaibab National Forest, but not in Grand Canyon National Park, and has continued ever since. Still, the shooting of predatory animals continued, with government hunters paid for the job inside the national park until 1927. Mountain lions, bobcats, coyotes, eagles and owls were killed, and the wolf was extirpated. Rangers continued to shoot any predators they encountered until 1931, when all control measures were stopped in Grand Canyon National Park. Unfortunately, these animals are still being poisoned and shot systematically in the areas outside the park. It is the purpose of the National Park Service to restore the balance of nature within Grand Canyon National Park as far as possible, by protecting all native wildlife. Destructive species which have been introduced, such as the wild burros, are being removed to protect the plant life and the native species such as the desert bighorn sheep.

OTHER WILDLIFE MANAGEMENT

Artificial feeding and the provision of water sources for wildlife continued through the 1920's and early 1930's, but was gradually abandoned. Water "tanks" (ponds) were constructed
along the South Rim, and a large lake was created in Grand Canyon National Monument for wildlife but failed to hold water. The National Park Service began to see, however, that the creatures of the wild thrive most naturally when they are left alone.

Another dismal attempt to outdo Mother Nature was the 1925 introduction of pronghorn antelope fawns onto the Tonto Platform, where the climate, terrain and vegetation were unsuitable. They survived and increased from an original group of nine to a herd of thirty only through artificial feeding. The mistake was apparent within a few years, and after feeding was discontinued in 1936, the pronghorns gradually died out.

Another artificial introduction consisted of planting trout in all the permanent tributary streams of the Colorado River within the Grand Canyon, beginning in 1923. The fish were hampered by the high mineral content of the waters and the periodic flash floods which sweep down the streambeds with great force, carrying the fish down into the River or leaving them high and dry along the banks. Fishermen discovered that most of the streams were almost inaccessible. A degree of success was met in Bright Angel Creek, with a fish hatchery being operated for a time at Roaring Springs.

THE NATURALISTS

From the beginning, the National Park Service had seen as one of its most important activities the education of the visitors about the natural wonders which they had come to see. Campfire lectures and nature walks were first given in Yosemite by two University of California professors, Harold C. Bryant and Loye H. Miller, under the direction of Ansel F. Hall, the first park naturalist. Eventually the naturalists became an important branch of the National Park Service, doing research, establishing museums and libraries, and most important, interpreting the natural features of the national parks, the rocks and fossils, animals, plants and historical sites, to the visitor in such a meaningful way that he may see the relationship of these things to one another and to himself.

It is appropriate that at Grand Canyon, the first money for educational services was given by a group of visitors who
had come for the dedication of the national park, and who felt the need for such services. This was the Brooklyn Daily Eagle tour, and their gift of almost $2,000 was used in 1921 to open an "information room" at park headquarters where a library and collections of flowers, minerals and photographs were begun. A ranger was usually stationed in this room. In 1922, a daily lecture illustrated with slides at El Tovar was begun by I. I. Harrison, a National Park Service ranger. Within two years, he had spoken before 60,000 people.

The first man hired specifically for summer work as a ranger-naturalist was Glen E. Sturdevant, a graduate of the University of Arizona in geology, who began giving campfire
lectures and guiding nature walks in July, 1925. In the next year, Sturdevant was hired on a permanent basis, and became the first park naturalist of Grand Canyon National Park in 1927. He began the issue of a monthly bulletin, *Grand Canyon Nature Notes*, and made many additions to the study collections.

A fine observation station and trailside museum was erected on the rim at Yavapai Point in 1928 through a grant by the Laura Spelman Rockefeller Foundation, augmented by other gifts. This museum, primarily devoted to geology, was provided with fixed binoculars directed toward important locations in the Canyon, and became the place where ranger-naturalists talks are given on how the Grand Canyon was formed.

On February 20, 1929, while returning from a reconnaissance and collecting trip in the western part of Grand Canyon, Glen Sturdevant and two other men tried to cross the Colorado River in a boat above Horn Creek Rapids. The boat was caught in the rapids and Sturdevant and Park Ranger Fred Johnson were drowned. Chief Ranger James P. Brooks was the survivor.

Edwin D. McKee became park naturalist in 1929 and served until 1940. Under his leadership, the interpretive program expanded to include auto caravans as well as campfire, lodge and museum talks and nature walks on both rims. McKee often conducted geology classes on field trips to the bottom of the Canyon with an overnight stay at Phantom Ranch. Educational signs were erected along the roads and trails, and pamphlets were prepared to explain the things seen along the way. Technical bulletins were mimeographed, including preliminary check lists of the mammals, amphibians and reptiles, birds and plants of the Grand Canyon.

Indian ruins had been noticed in the Grand Canyon by the early river explorers, and others had been found along the rims. The park naturalist kept record of all these remains, and soon there were over 300 known. One of these, Tusayan Ruin, not far from the East Rim Drive, was excavated in 1930 by Emil W. Haury, supported by the gift of Mr. and Mrs. H. S. Gladwin of Gila Pueblo, Globe, Arizona. Two years later a small archeological museum was built nearby through the generosity of
Mrs. Winifred MacCurdy of Pasadena. Here visitors can see exhibits concerning the Indians and be guided through the ruins by a ranger-naturalist.

In 1932, the Grand Canyon Natural History Association was founded to further visitor understanding and enjoyment of the scenic, scientific and historical values of Grand Canyon National Park, and to cooperate with the National Park Service. It is primarily sponsored and operated by the naturalists, and is recognized as an essential operating organization. The Association took over the publication of *Nature Notes*, which ceased in 1935. In its place, a series of natural history bulletins on specific subjects having to do with the Grand Canyon was started. The first of these, "Mammals of the Grand Canyon Region," by Vernon Bailey, was printed in 1935. There followed bulletins on history and exploration, trees, birds, geology, plants, prehistoric Indians, amphibians and reptiles.

The Civilian Conservation Corps provided museum assistants, library catalogers and guides to aid in the interpretive program during the 1930's. Among other projects, they helped to prepare the unique fossil fern exhibit on Cedar Ridge along the Kaibab Trail, where visitors may see the fossils in place, as they were discovered.

Edwin McKee is a geologist of considerable stature, and has done extensive research in every part of the Grand Canyon, including two river trips. The first edition of his *Ancient Landscapes of the Grand Canyon Region*, a popular description of the geological history of northern Arizona and southern Utah, appeared in 1931. He has also published technical studies of the various formations in the Grand Canyon and the surrounding country.

**LITTLE HORSES**

Rumors of a band of tiny horses, trapped in a remote section of the Grand Canyon by a landslide and reduced over the years to the size of dogs by inbreeding and starvation, often reached park headquarters. In fact, "little horses from the Grand Canyon" were exhibited in sideshows and given publicity in national magazines and radio programs.

In 1938, Edwin McKee, Assistant Chief Ranger Warren
Hamilton, and Park Ranger Bert Lauzon were sent on an expedition to check on the truth of the rumor. They went down into Havasu Canyon and hired as guides two Havasupai Indians familiar with the area from which the little horses were supposed to have come. The Havasupai assured the rangers that there were little horses in the region, which had belonged to their own ancestors, and showed them three which they had captured. These were simply Indian ponies, stunted from poor desert grazing. The shortest one measured 48 inches tall at the shoulder and weighed about 300 pounds. In a careful search through the region, the rangers found other stunted wild horses, but none smaller than those captured by the Havasupai. They concluded that the size of the horses had been greatly reduced in statements given out concerning the area, that the canyon blocked off by landslides in which pygmy horses were supposed to have evolved was a myth, and that the small horses were the normal results of the environment and were not confined to any one limited area.

Later, Park Service officials stated that they had information that the very tiny horses exhibited in sideshows and fairs as "Grand Canyon" little horses were actually Shetland ponies raised on a ranch in Mexico where they were especially stunted for this purpose.

SCIENTIFIC RESEARCH

Geologists continued to study the strata and fossils. Among these were Charles W. Gilmore of the United States National Museum and David White of the Carnegie Institution, whose studies of the footprints and plant impressions in the Hermit Shale are well-known.39

Archeologists such as Neil M. Judd of the National Museum noticed the presence of large Indian ruins and cliff dwellings in the Grand Canyon, and helped to investigate and explore them.40

The discovery of ground sloth remains in caves in the lower Grand Canyon near Pierces Ferry by Chester Stock of the Los Angeles County Museum might well be mentioned here, although the area is not within the national park.
The National Park: Period of Establishment, 1919-1938


THE LOST WORLD OF SHIVA TEMPLE

The most widely publicized scientific event of the period was the biological survey of Shiva Temple. Harold E. Anthony of the American Museum of Natural History was extremely interested in the existence of two “islands in the sky,” Shiva Temple and Wotans Throne, wooded mesas within the Grand Canyon which are separated from both rims. Scientists had long observed that the hot desert depths of the Grand Canyon are a climatic barrier which prevent the movement of many small animals from one rim to the other, and that some animals have developed different forms on the North Rim and South Rim. The best known example of this is the tassel-eared squirrel, of which the South Rim form (Abert) has a gray tail and white
underparts, while the North Rim form (Kaibab) has a white tail and dark underparts. Anthony realized that the smaller mammals on Shiva Temple and Wotans Throne might have been isolated and undisturbed for millions of years. In 1937, he led an expedition to make a study of the life on these formations, to see if any variant forms existed.

Shiva Temple was climbed first. Since access by air was considered impossible, the scientists descended from the North Rim base camp to the saddle between the North Rim and Shiva Temple, and then climbed up to the top of the temple itself. Superintendent Tillotson and Park Naturalist McKee accompanied the expedition. Supplies were dropped by parachute. Anthony stayed on Shiva for 10 days, collecting specimens of mice, chipmunks, squirrels and rabbits. He discovered deer antlers, indicating that the larger mammals sometimes ascend Shiva, and Pueblo Indian pottery, tools and ruins, hundreds of years old. As to the major purpose of the expedition, differences between the rodents on Shiva and those on the North Rim were decidedly minor, and no more marked than in regions where such separation does not exist.

This was hardly enough to satisfy an eager public encouraged by newspaper accounts which had even suggested that the scientists were looking for live dinosaurs. In the meantime, Wotans Throne had been scaled with great difficulty by five other members of the party including George B. Andrews, son of the well-known Roy Chapman Andrews. Indian ruins were also seen on Wotan, but no careful study of the wildlife was made, due to its inaccessibility.

ARTISTS

Gunnar Mauritz Widforss was often called "the Painter of the National Parks." Born in Sweden in 1879, he studied art at Stockholm. He made trips to the United States in 1905 and 1921. On the second trip, he saw the scenery of the West and did not return to Europe. While painting in Yosemite, he met Stephen T. Mather, who urged him to work in the national parks and became his patron. Of all the national parks, Widforss loved the Grand Canyon best. He spent most of the latter part of his life along the rims and in the Canyon, painting it in
its various moods. He always liked to be on the North Rim in the fall to catch the beautiful shades of the aspen leaves. He became an American citizen in 1929, and after his death in 1934 his body was put to rest in the cemetery at Grand Canyon.

Without doubt the best-known musical portrait of the Grand Canyon is Ferde Grofe's "Grand Canyon Suite." This tone poem with its reflections of sunrise, sunset, the storm, the Painted Desert and the mules "On the Trail" was written and first performed in 1931. Grofe was born in New York in 1892, and his compositions include the "Mississippi Suite," "Symphony in Steel," and other music describing the American scene.

FRED HARVEY

Fred Harvey had been well established at the Grand Canyon for 15 years when the national park was created. Thus it was not surprising that this organization was judged responsible and given a contract in 1920 as the principal concessioner on the South Rim.

Phantom Ranch was built by Fred Harvey in 1922 as an overnight stop for the riders on the muleback trips down the Bright Angel Trail and across the new swinging bridge. On the site of the old Rust and Roosevelt camps, Phantom Ranch was designed by Mary Jane Colter and given its name by her because it is located near the mouth of Phantom Creek, a tributary of Bright Angel Creek. The new "dude ranch" consisted of a large stone dining hall and several fine stone-and-wood cabins. All the materials except the native stone had to be packed down the trail on muleback. When the new Kaibab Trail was constructed, parties made the return trip that way, and a barn and guide's house were placed at the head of the trail.

Another South Rim facility was located at the new public campground in 1926, consisting of a number of housekeeping cabins and a delicatessen which later developed into a cafeteria. This is the motel now called the Auto Lodge and Cabins. In the following year, a laundry plant was built nearby.

The Desert View Watchtower, designed by the inimitable Mary Jane Colter, was erected at the end of the East Rim Drive.
in 1932. This was a re-creation of an ancient Indian round tower with a circular kiva attached, built of native stone around a steel framework. The interior was decorated by Hopi Indian artists with replicas of ancient petroglyphs and kiva paintings, and in the center one of the very few existing models of a Hopi altar complete with sandpainting. The top of the tower affords a wide view of the Grand Canyon and the Indian country to the east.

As remarkable as is the Watchtower, the new Bright Angel Lodge represents Mary Jane Colter’s masterpiece. A structure of stone and logs, it harmonizes as well with its location near the rim of the Canyon as any building could. Its features include one fireplace which is constructed out of all the different types of rocks in the Grand Canyon in their proper sequence. It replaced the unsightly main buildings of the old Bright Angel Camp in 1935.

Despite its enlarged facilities, Fred Harvey received a taste of things to come when in 1938 it became necessary for visitors to make reservations during the summer season for lodgings and places on the muleback trips.

WATER AND POWER FOR THE SOUTH RIM

The almost total lack of permanent surface water at the Grand Canyon is the most pressing practical problem in the development of the area. Beginning in 1901, all water was hauled in railroad tank cars over distances of 60 to 120 miles. This was an expensive process, while little more than two miles away and 3200 feet down in the Canyon, the waters of Garden Creek were spilling unused from Indian Gardens over a waterfall and into the Colorado. In 1931, the Santa Fe Railroad conducted a survey to determine whether this water could be pumped up to the rim. Soon a contract had been awarded and construction began. First a cable tramway was built down to Indian Gardens to transport men and materials, and then 2½ miles of six-inch pipe were laid. A two-unit pumping plant built at Indian Gardens raised the water to the rim in one stage. The pipelines were kept underground and out of sight as much as possible, and the cableway was removed when the job was completed. Regular water trains were stopped in 1932.
Power for the pumping station was produced by a steam generating plant which had been built by the railroad in 1926 to replace the older power plant. This plant generated all the electricity used at the time in Grand Canyon Village.

BABBITT'S GENERAL STORE

A definite need was filled at Grand Canyon Village in 1921 when the Babbitt Brothers Trading Company opened a general store. The Babbitt Brothers had come to Flagstaff in 1886, beginning a chain of stores and trading posts which eventually spread across northeastern Arizona. The first store at Grand Canyon was located east of the Fred Harvey garage, and was replaced by the present building across the street from the site of Park Headquarters (now the District Ranger Station) in 1925.49

GRAND CANYON HOSPITAL

In the early days at Grand Canyon, it was necessary to send to Williams or Flagstaff for a doctor, unless one could be found among the visitors. Fred Harvey maintained a nurse at El Tovar.

The United States Public Health Service, at the superintendent's request, sent Dr. G. C. Rice to serve as resident physician in 1921.50 The Public Health Service continued to fill the position for two years, when instead a physician was assigned by the Santa Fe Railroad to serve in the park. When neither of these arrangements proved satisfactory, the hospital was made a concession which was granted to a private physician. A new hospital and x-ray equipment were provided by the National Park Service in 1931.

THE UNITED STATES POST OFFICE

The old, unsafe Post Office building with its checkered history was replaced by a sturdy stone-and-wood structure in 1934. Grand Canyon was honored by the issue of a stamp in the National Parks commemorative series on July 24, 1935.51 The first day of issue sale was held in the Grand Canyon Post Office.
The Story of Man at Grand Canyon

EASTER SUNRISE SERVICE

The idea of an Easter service at sunrise on the rim of one of nature's most awe-inspiring sights, first conceived in 1902, was revived in 1935 with a national radio broadcast from station KTAR in Phoenix, narrated by J. Howard Pyle, later governor of Arizona. The service has been held in each succeeding year.

NORTH RIM

The first tourist camp development on the North Rim was the Wylie Way Camp, begun in 1917 by W. W. Wylie, who had also operated camps in Yellowstone and Zion. The camp consisted of a main dining tent and 10 sleeping tents, could accommodate about 20 persons, and was of course operated only in the summer season. Wylie's daughter Elizabeth and her husband, Thomas H. McKee, took over the camp in the 1924 season. They added frame cabins in 1926.

Transportation to the North Rim by auto stage from Lund, Bryce, and Zion in Utah, and trips out to Cape Royal were offered by the Parry Brothers, Gronway and Chauncey. Mule-back trips into the Canyon were sold by Altus F. Jensen.

UTAH PARKS COMPANY

The National Park Service awarded a contract to the Utah Parks Company, a subsidiary of the Union Pacific Railroad, as concessioner on the North Rim beginning in 1927. The Utah Parks Company had bought the McKee, Parry and Jensen interests. They offered daily bus service in the summer on a loop trip including Zion, Bryce, Cedar Breaks and the North Rim, operated the muleback trips, and began the development of first-class accommodations on the North Rim.

Grand Canyon Lodge was completed in 1928, a handsome building directly on the rim near Bright Angel Point, its exterior of Kaibab Limestone seeming to rise out of the cliff on which it stood. Due to the material used, it could not be seen easily from the South Rim in the daytime. The lodge was provided with 100 modern standard cabins and 20 deluxe cabins. Another
unit, the North Rim Inn, including a cafeteria and more cabins, was located at the new campground.

Water, almost as much a problem on the North Rim as on the South Rim, had been obtained from small springs on or just below the rim. In 1928 the Union Pacific Railroad installed a powerhouse and pumping plant on Bright Angel Creek near Roaring Springs, an adequate and dependable supply of water. Here electricity generated by Bright Angel Creek was used to pump the water 3870 feet upward to the North Rim.56

The most disastrous building fire ever seen at Grand Canyon completely destroyed the interior of Grand Canyon Lodge in 1932. Fortunately all but two of the cabins escaped and guests could be fed at the cafeteria. Rebuilding began in 1936, and there was an attempt to keep the road plowed all winter so that construction could continue. It proved to be a winter of exceptionally heavy snow, however, and many of the personnel had to be evacuated by snow tractor or over the Kaibab Trail.57

A post office has operated intermittently at Grand Canyon Lodge under various names such as Kaibab, Kaibab Forest and North Rim, Arizona.

THE COLORADO RIVER

A trip down the Colorado River to prepare a topographic map was organized by the United States Geological Survey and headed by Claude H. Birdseye, the chief topographical engineer.58 After surveys of the upper canyons in 1921 and 1922, they ran the Grand Canyon section in 1923 with Emery Kolb as chief boatman. The boats were of the light Galloway-Stone type. This expedition established the custom of measuring river distances from Lees Ferry and naming features such as creeks after these mileages.

A river gauger was stationed by the Geological Survey at the mouth of Bright Angel Creek in 1923 to measure the flow and silt content of the Colorado River and to provide flood warnings for the lower river basin.59 He was provided with a cabin, a river level recorder and a cable car from which to take river samples and measurements.

Clyde Eddy’s 1927 expedition was another kind of trip.
In three Powell-type boats, he went through the Grand Canyon with six college boys, a young man from Louisiana and another from Green River, Utah, a dog and a bear cub. Eddy was a journalist, lecturer and a member of the Explorer's Club, and the purpose of his trip was pure adventure. Eddy partly repeated his trip later the same year with the Pathe-Bray commercial motion picture expedition, which went from Lees Ferry to Hermit Creek.

The next attempt on the River was made in October 1928, when Mr. and Mrs. Glen R. Hyde decided to spend their honeymoon running the Colorado in a scow with sweep oars at each end. They made the trip from Green River, Utah to Bright Angel Creek in 26 days. At that point they ascended to the South Rim, where they talked to Emery Kolb. He found that they were making Brown's mistake in not wearing life preservers. He offered them his own, but they refused. They returned to the river, continued their journey, and were never seen again. When they were long overdue, a United States Army airplane was sent from March Air Base to search for them, and a boat was sighted in the lower Granite Gorge. Emery Kolb then rode in the airplane and identified the boat. This was the first time an airplane had flown within the Inner Gorge. Emery and Ellsworth Kolb and Chief Ranger Brooks repaired an old boat at the mouth of Diamond Creek and floated downstream 14 miles to the Hydes' boat, which they found dry, undamaged and empty, held by its own rope which had caught in the rocks. There was Mrs. Hyde's diary, with the last date recorded, December 1, 1928. Thorough search uncovered no further clues as to the manner of the Hydes' deaths, but Emery Kolb surmises that Mrs. Hyde, holding the boat's rope while her husband scouted a rapid, was swept into the current, her husband then tried to rescue her and both were drowned.

In April, 1931, construction began on Hoover Dam in Black Canyon, the "head of navigation" on the Colorado River reached by Ives almost 75 years before. The dam was completed in 1936, and the impounded water formed Lake Mead, a reservoir 115 miles long, the upper end of which extended into the lower end of the Grand Canyon and drowned some rapids, including the famous Separation Rapids of the Powell expedition, where the three men deserted. Hoover Dam was not the
first dam on the Colorado River, as Laguna Dam near Yuma had been completed in 1909, but it was the first dam in the canyons, and the first to control effectively the flow of the River.

Clyde Eddy’s third river trip was made in 1934 with Russell G. Frazier and others including Bus and Alton Hatch. This party erected a memorial plaque at Separation Rapid to the three men who left the first Powell expedition. It was the first to terminate its trip at the new Boulder (Hoover) Dam.

The only man ever to run the Colorado River through the canyons alone was Haldane (“Buzz”) Holmstrom, a service station attendant from Coquille, Oregon. He made his boat himself, a 15-foot craft of the Galloway-Stone type, starting with a Port Orford Cedar tree which he sawed into boards. He drove to Green River, Wyoming with his boat and the rest of his homemade outfit in October, 1937, and seven weeks later he arrived at Boulder Dam. “I know I have got more out of this trip by being alone than if I was with a party,” he wrote in his diary on his last night in the Grand Canyon, “as I have more time, especially at night, to listen and look and think and wonder about the grandeur that surrounds me . . .” He reflected on his trip down the wild river:

“I find I have already had my reward, in the doing of the thing. The stars, the cliffs and canyons, the roar of the rapids, the moon, the uncertainty and worry, the relief when through each one . . . the campfires at night . . . the real respect and friendship of the rivermen I met . . .

This may be my last camp where the roar of the rapids is echoed from the cliffs around and I can look at the stars and moon only through a narrow slit in the earth.

The river and canyons have been kind to me.”

Buzz Holmstrom returned and repeated his journey in the following year with three others. This trip began in Green River Lake, Wyoming, 250 miles further upstream than any other traverse of the Grand Canyon, and was the first using an inflated rubber boat.

Several geologists including Ian Campbell, John H. Maxson, John Stark, Robert Sharp and, joining at the Bass Trail, Park Naturalist Edwin D. McKee, were piloted through the Grand Canyon by Frank Dodge and others in 1937. The main
purpose of this, the Carnegie Institution expedition, was to study the Archean rocks of the Granite Gorge, and it was a full-fledged scientific study. They were overtaken by Buzz Holmstrom at Diamond Creek.

AIRPLANES

An airplane flight within the Grand Canyon is an exciting way to view the great gorge. Today thousands of people fly over the Canyon at great altitude and perhaps miss the full glory of its depths; other hundreds fly in smaller planes flown by experienced pilots down between the walls and temples.

The first flight over the Grand Canyon was made in a biplane by Lieutenant Alexander Pearson of the United States Army Air Service in June, 1921. In the following summer, Ellsworth Kolb hired R. V. Thomas, a barnstorming World War I flyer, to make a landing in the Canyon on Turtle Head (Plateau Point), a promontory of the near-level Tonto Platform. Rangers cleared a runway 90 feet wide and 400 feet long. Thomas made two successful landings and what is more remarkable, two successful flights out of the Canyon from that point, 3200 feet below the rim. Landings within the Grand Canyon are no longer permitted, except in case of emergency.

The first plane to fly within the Inner Gorge below the Tonto Platform was the army plane searching for the Hyde couple in 1929.

An airport for scenic flights through the Grand Canyon was developed near Red Butte, 16 miles south of the South Rim, and beginning in 1931 was operated by Grand Canyon Airlines. A modern airport facility was completed near Rain Tank ten miles south of Grand Canyon Village in 1965. Air travel increased greatly with the availability of convenient commercial service provided by Bonanza Air Lines. Landings were also made in V. T. (DeMotte) Park on the North Rim and at times an airplane was stationed there. Pilots who fly in the Canyon report that it is not the place of extremely dangerous and tricky air currents which many people imagine. There is a general updraft over the entire Grand Canyon at most times. Violent thunderstorms are common in summer.
THE HAVASUPAI

Leslie Spier of the American Museum of Natural History was in Havasu Canyon for several months during 1918, 1919 and 1920, studying the way of life of the Indians there.69 His anthropological report, the classic work on the Havasupai, was published in 1928.

The Havasupai were used to grazing their stock, particularly horses, in a large western sector of Grand Canyon National Park. The superintendent granted grazing permits so that this could continue. Thus the Indians use a much larger area than would be indicated by the small size of their reservation.

Mining was revived in the Havasupai area by W. I. Johnson’s Arizona Lead and Zinc Company, which worked primarily in Carbonate Canyon below Havasu Falls, but also had tunnels near the Colorado River. Considerable development took place without adequate financial returns, and after an engineer’s report that there were not significant mineral deposits present, the claims were offered for sale and were purchased by the National Park Service in 1957.70

A considerable number of Havasupai Indians found employment in Grand Canyon Village, and lived in a camp nearby. Without medical attention, proper housing or adequate water, the camp became a slum. In 1936, the National Park Service provided new cabins, and the Indian Service made arrangements with the resident physician to give medical care. Later, the older shacks were torn down, and Havasupai children began to attend the Grand Canyon school.71

In 1938 a new graded road was built to Hualapai Hilltop from a point near Peach Springs. At this time the old road and trail from Grand Canyon through Topocoba Hilltop were already falling into disrepair.

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In the period of the Second World War, travel to the Grand Canyon was greatly reduced, and National Park Service and concessioner activities suffered correspondingly. Following the war, a constantly increasing wave of visitors came to Grand Canyon, requiring plans, construction and great efforts to meet the challenge. Visitors needed to be protected, their wants supplied and their questions answered. At the same time the area, one of nature's greatest masterpieces, was preserved with as little impairment as possible for the enjoyment and benefit of all those who would come to see it.

The National Park Service

During the Second World War and for several years afterwards, Harold Child Bryant, who had done so much to establish interpretation and education as activities of the National Park Service, was superintendent of Grand Canyon National Park. He acted in that capacity during all of 1939, and after brief periods of administration by James V. Lloyd and Frank Alvah Kittredge, he was superintendent from August 1941 to March 1954.¹

Bryant was born in Pasadena, California, in 1886. He studied biology at Pomona College and the University of California at Berkeley, where he also taught. He helped to found the Yosemite Field School of Natural History, and for a time beginning in 1930 was Assistant Director of the National Park Service.
Bryant's successor, Preston P. Patraw, was superintendent for one year. John S. McLaughlin served from August 1955 to March 1964, when Howard B. Stricklin became superintendent of Grand Canyon National Park.

THE WAR AND AFTER

The international crisis and the postwar economic boom within America made their effects felt at Grand Canyon. From 440,000 visitors in 1941, travel to Grand Canyon declined markedly during the war years, as gas and rubber rationing kept most Americans from pleasure trips. In 1944, only 65,000 visitors came, and many of these were servicemen on trips arranged for their units.\(^2\)

Bus trips within the park were discontinued. Grand Canyon Lodge, Bright Angel Lodge and most of the rest of the concessioners' facilities except El Tovar were closed. No trains ran from Williams. Many rangers and other employees volunteered for service or were drafted, and work was done by a skeleton crew. Entrance stations were manned only in the summertime, and the only interpretive activity was the talk at Yavapai Museum. Meanwhile, the park geared for war, as the Civil Defense organization drilled local residents, and victory gardens were planted on the village athletic field.\(^3\) The mule trips remained popular, as mules required neither gas nor rubber, and Phantom Ranch actually increased its business.

At the end of the war, travel immediately shot up above prewar levels. In 1946 there were almost 500,000 visitors; in 1947, more than 600,000. In 1956 the number rose above 1,000,000 annually, and facilities in the park were extremely overloaded. Reservations were required throughout the summer, and traffic and parking were congested. This was a national pattern due to the higher wages and increased leisure time of the postwar period, and shows no sign of decrease. In 1963, visitors were in excess of 1,500,000.\(^4\) A great stride forward was needed to provide for the needs of these Americans and the sharply increasing numbers of visitors from other lands. The program adopted to meet these needs was Mission 66, which is described below.

The importance of the tourist industry to northern Arizona
became quite apparent in the postwar period, and new roads and other facilities were developed. The most significant of these affecting Grand Canyon were located in the Indian country to the east. In the early 1960's it became possible to drive between Grand Canyon and Mesa Verde, Monument Valley, the Hopi towns and Gallup, New Mexico, by direct paved roads.

**PARK ROADS**

The flood of new traffic which almost inundated Grand Canyon Village spurred a study of road use. The National Park Service decided to relocate the south entrance road so as to provide visitors with a view of the Canyon from Mather Point before they reached the village with its confusion of roads, and to make it possible for through traffic to avoid the village entirely. This new road was completed in 1954.

Concern over possible development of the south approach road frontage into a string of hamburger stands, billboards and quick-profit subdivisions prompted Senator Carl Hayden to introduce a bill to protect scenic values along the road within the Kaibab National Forest. The bill passed and was signed by President Harry S. Truman in July, 1951.⁵

**PROTECTION**

The ranger force continued its dual function in protecting the visitors and protecting the national park itself. Winter ski patrols and snow-cat patrols were initiated to keep watch on the North Rim during its long closed season. A full-time ranger was stationed in Grand Canyon National Monument.

The rangers made many rescues in the Canyon, so many that only a few examples may be mentioned in a book of this length. Those receiving the most notice involved air accidents. Three men of the Army Air Corps parachuted into the Grand Canyon at night on June 20, 1944, when their B-24 bomber developed engine trouble.⁶ They fell onto the Tonto Platform four miles south of Point Sublime, one of the men sustaining a broken ankle. They found a small spring of water. Three days later they were sighted and supplied by air drop, but it was not
until June 30 that a route to them could be found and they were brought out.

Another airplane accident which made great efforts necessary for the rangers was one of the most disastrous occurrences in the history of commercial aviation. Near noon on a reasonably clear day, June 30, 1956, two airliners on eastward flights from Los Angeles collided over the Grand Canyon and fell into the gorge near the river, killing all 128 persons aboard.7 The planes were a Trans-World Airlines Constellation and a United Airlines DC-7. The point of impact in the Canyon was on Chuar Butte near the confluence of the Colorado and Little Colorado rivers. The scene of the tragedy was closed to unauthorized entry, and the bodies of the victims were removed from the Canyon by helicopter. Many of them were buried in the Grand Canyon cemetery, where a memorial now stands. The National Park Service gave all possible assistance to the Civil Aeronautics Board and other organizations investigating the accident.

Hikers and climbers in the Canyon are a source of concern to rangers. Those going off the maintained trails are asked to register with the rangers before leaving, and most do. Hikers sometimes take the old abandoned trails, and there are a few who make a hobby of hiking into little-known parts of the Canyon, or setting records. One of these is Colin Fletcher, who in 1963 backpacked from one end of the park to the other, from Havasu Canyon to the head of the Nankoweap Trail.8 Others delight in climbing peaks, but although the Grand Canyon is full of peaks, many of which have been climbed, it is not popular with rock climbers because its old sedimentary rocks break and fall easily. Merrel Clubb is a climber with several records of first ascent in the Canyon.

Other hikers are not so well-prepared, and do not notify rangers of their trips. In these cases, rescues may be necessary and difficult, or tragedy may result. Such a case occurred in July, 1959, when a priest and two boys from Georgia became lost near the old Tanner Trail.9 The priest fell to his death, and one of the boys died of thirst and exposure. The other boy, 15-year-old John Manson Owens III, managed to sustain himself on river water, cactus and mesquite pods until he was found by Ranger Daniel E. Davis who was searching in a helicopter.

One or two daring individuals, unwilling to travel the
Canyon on their own feet, have attempted to operate trail motorcycles in the Grand Canyon. They have been arrested and given stiff fines for endangering themselves and others.

The matter of trials of violators of park regulations is now handled by a resident United States Commissioner. Judge F. A. Hickernell was appointed as the first to fill this position in 1960.\textsuperscript{10}

\textbf{FOREST PROTECTION}

Forest fires in Grand Canyon National Park are fought by carefully trained crews assisted by lookouts, modern radio equipment and air patrols. There have been few large fires in recent years. A fire on Swamp Ridge in 1943 burned 300 acres, and a slightly larger one burned on a formation called The Dragon two years later. The largest, the Saddle Mountain blaze of 1960, destroyed about 9000 acres, mostly in the Kaibab National Forest but including 300 acres of park land.\textsuperscript{11} All three of these fires were on the more heavily forested North Rim.

The park forester has directed limited control measures against mistletoe, pine scales and beetles, tent caterpillars and spruce budworm.

\textbf{WILDLIFE MANAGEMENT}

Wildlife management in recent years has involved the release within the park of wild turkeys and prairie dogs and the removal of destructive wild burros. The earlier policy of introducing deer on the South Rim has been reversed completely. In the winter, tame deer from the village area have been removed from the park and sent to other parts of Arizona where it was desired to start herds, particularly on the Navajo Indian Reservation. Others have been sent to zoos.

In 1964, an open season on the Kaibab squirrel was declared by the Arizona Game and Fish Department. The National Park Service and many other organizations and individuals protested this decision, because the Kaibab squirrel is rare and is limited to a small area north of the Grand Canyon. Finally the hunt was cancelled. With the assistance of Clyde Harden, who had been photographing these squirrels, the park naturalist edited

INTERPRETATION

Louis Schellbach, who first came to Grand Canyon as a seasonal ranger-naturalist in 1933, served as chief park naturalist from 1941 to 1957, and told the fascinating story of the Grand Canyon to thousands of visitors. His successor was Paul E. Schulz, and since 1960 Merrill D. Beal has been chief park naturalist.

The old wooden school building became the naturalists’ workshop in 1940, and the priceless study collections were located there until the move to the new Visitor Center in 1957. Manpower shortages during the war cut interpretive activities to the minimum. Guided auto caravans ceased and did not resume later due to traffic problems. As more naturalists could be hired in the postwar period, new activities began: innovations were a man stationed at Mather Point to contact visitors during their first view of the Grand Canyon, a geology talk at Cape Royal, guided nature hikes within the Canyon along the Kaibab and Hermit trails, and a guided walk to observe and photograph the sunset from Grandeur Point. Campfire talks were given at each automobile campground in the park. Trailside and roadside exhibits such as the Colorado River exhibit at the foot of Bright Angel Trail, interpretive signs, and self-guiding nature trails using signs or leaflets proved useful and popular. Every year a larger percentage of visitors has attended one or more of the talks, hikes, museums or exhibits.

The naturalist staff assisted in the preparation of “In the Beginning,” a motion picture describing the geological history of the Grand Canyon. This was produced by the General Petroleum Corporation, which also sponsored the famous Mobil-gas economy run to the Grand Canyon. The film received wide acclaim and awards as an outstanding documentary.

For the increasing number of visitors from other lands, the naturalists have prepared translations of the talk, “The Story of the Grand Canyon,” in French, German and Spanish, in both printed and tape-recorded forms.

The naturalists have also encouraged recent studies by

MISSION 66

By 1956 it was evident that facilities in the National Parks across the country were entirely inadequate for the growing flood of visitors. In that year Congress authorized a ten-year program of construction, known as “Mission 66” because it was designed to provide enough visitor facilities by the target date, 1966.

At Grand Canyon, Mission 66 projects centered around the development of a new village area away from the rim and about a mile east of the older village. The first unit completed was a new Visitor Center, with information desk, museum exhibits, library, study collections, audiovisual room, workshop and offices for the naturalists. This was completed in 1957. A new wing was added in 1966 to house administrative offices and the structure was renamed Park Headquarters.

A new, larger campground was located in the new area in 1961. Near the Visitor Center, an amphitheater provided with a large behind-the-screen projection booth was built for the campfire programs. Other campgrounds in the park were enlarged or remodeled, including trail camps within the Canyon. Roads were relocated, parking areas enlarged, and viewpoints rebuilt.

Another recent project is the cross-canyon water pipeline. The water supply from Indian Gardens was not sufficient for the use of increasing numbers of visitors so that in 1960 the
old method of bringing in water by railroad tank car had to be resumed.\textsuperscript{14} It was decided to bring water from Roaring Springs below the North Rim all the way down Bright Angel Canyon, across the river on a new suspension bridge, and up to the present pumping station at Indian Gardens by gravity flow. The survey was made in 1963 and construction began in 1965, using helicopters to transport some of the workmen and equipment. Early in December, 1966, when the project was near completion, a disastrous flood swept down Bright Angel Canyon. Great damage was done to the pipeline and also to the north Kaibab Trail. Grand Canyon’s water problem remained unsolved.

New rangers are trained for the National Park Service at the Horace M. Albright Training Center, located in Grand Canyon National Park south of the village. This “graduate school for rangers,” designed for men and women who have already passed the Civil Service Examination and are ready for assignment to any National Park Service area, was dedicated in 1963.\textsuperscript{15}

CONCESSIONERS

To help meet increased demand for accommodations in the busy summer season, Fred Harvey opened Yavapai Lodge, a modern motel in the new village area, in 1958. They also provided a camper service building including a snack bar, showers and a laundromat in the new campground. Service stations were opened in the village and at Desert View. In 1963, the Valley National Bank opened a new branch next to the Fred Harvey general offices, and in 1967 a new bank building was constructed near the Camper Service Building.

Utah Parks Company on the North Rim also provided a service station and a grocery store.

Utilities in Grand Canyon Village were modernized when commercial power was provided by the Arizona Public Service Company in 1955. A new power line was installed to Indian Gardens in 1959, using helicopters. The Mountain States Telephone and Telegraph Company installed a new dial system in 1961.
SCHOOL AND CHURCHES

Further provision was made for education in Grand Canyon Village with the completion of a new high school in 1959. Church services of the Catholic, Protestant and Latter-day Saints faiths have long been held at Grand Canyon Village, and in the summer on the North Rim. In earlier times these were held by clergymen who came to Grand Canyon to conduct services, but recently a Catholic priest and a Protestant minister have resided in Grand Canyon Village. Protestant services are augmented in the summer by young college and seminary students sent by A Christian Ministry in the National Parks of the National Council of Churches. The year-round Protestant church is the Grand Canyon Community Church, an interdenominational fellowship whose minister is appointed by the Methodist Bishop of Los Angeles.

THE COLORADO RIVER

The period from 1938 on saw a definite change in river running. Trips became much more numerous. Commercial river runners made their appearance, and it became possible to buy tickets for trips through the Grand Canyon guided by experienced boatmen.

The first commercial river boatman was Norman D. Nevills, who completed his first Grand Canyon traverse in 1938, using an improved, wider version of the Galloway-Stone "cata-ract" boats. With him were the first women to make the trip, botanist Elzada U. Clover and Lois Jotter. Nevills founded Mexican Hat Expeditions, Inc., and made the Grand Canyon trip almost yearly until his death in an airplane crash in 1949. On Nevills' 1941 trip, Alexander "Zee" Grant took a kayak, or clothcovered foldboat, through for the first time.

Successors to Nevills were James P. Rigg, Jr., John B. Rigg and J. Frank Wright, who bought his business. Other river pilots included Don Harris, Bert Loper, who drowned in the River in 1949 while making a run at the age of 79, Pat T. Reilly, Harry Aleson and the famous Mrs. Georgia White, whose widely publicized commercial trips used inflated neoprene rafts.

Ed A. Hudson and Otis "Dock" Marston pioneered the
use of power boats in the Grand Canyon. Their first downriver run occurred in 1949. Upstream attempts were made from Lake Mead with no success until jet-propelled boats invented in New Zealand by William Hamilton were tried. The feat of running the Colorado River upstream was accomplished by Marston in 1960.19

Running the Colorado River without a boat is certainly some sort of record. This was done in 1955 by two young men, William K. Beer and John Daggett, who swam it, rapids and all, from Lees Ferry to Lake Mead.20

The recounting of successful trips should not give the impression that the Colorado River is no longer dangerous. With the increasing numbers of people attempting to run the River, the number of failures and deaths of those with inadequate experience or preparation has increased, too. The National Park Service requires that all those planning the trip through the Canyon must apply for permission in advance and meet stringent qualification requirements.

Glen Canyon Dam on the Colorado River above Grand Canyon was authorized by Congress in 1956. The dam is in Arizona, but most of the huge, 186-mile-long Lake Powell lies in Utah. Construction of the dam included building the new town of Page, Arizona, and a bridge across the Colorado to carry a new branch of U. S. Highway 89 between Page and Kanab. When the gates of Glen Canyon Dam were closed in 1963, the historical period of the Colorado as a wild river within the Grand Canyon was ended. Now the level of the River flow depends upon official decisions. Because silt from upstream settles out in Lake Powell, the Colorado River in Grand Canyon is relatively clearer. Occasionally in the spring when little rain falls in the immediate area, the Colorado, the “Red River” of the Spanish explorers, turns blue-green. The advent of Glen Canyon Dam may be said to have closed the history books on the period of wild river running in Grand Canyon. While boat trips are still made and the rapids are still there, the old days of spring flood and the untamed River are gone.

The Bureau of Reclamation has asked Congress to authorize two more dams for the Grand Canyon region; Marble Canyon Dam just above the national park, and Bridge Canyon Dam, which would back a lake completely through Grand
Stern first through the rapids, Norman Nevills guides the "WEN." First riverman to offer commercial tours, Nevills died in 1949 plane crash. (Photo by P. T. Reilly, 1949).

Canyon National Monument and thirteen miles into the national park, including the lower end of Havasu Canyon. These proposals have generated much controversy.

HAVASU CANYON

The Havasupai Indians have made definite efforts since the war to develop the tourist trade in their canyon. They have provided pack and saddle horses for the trip down the Hualapai Trail, and have built guest cabins in the Havasupai village. Numbers of visitors making this expedition have increased sharply in recent years.

After acquiring the old mining claims below Havasu Falls,
The Story of Man at Grand Canyon

the National Park Service developed a public campground in that incomparably beautiful area, which is being visited by more people each year.

An Episcopalian missionary was sent to the Havasupai Indians in 1948, and provided with a quonset hut chapel which was brought in by helicopter. Since 1956 the mission has been run by a minister sent by the United Indian Missions.

THE SPACE AGE

Grand Canyon entered the Space Age in 1964, when the American astronauts being trained for the first landing on the moon descended to the bottom of the Canyon as part of their training program. They were being taught geological skills which they might need on the moon. As the world’s greatest geological exhibit, the Grand Canyon was perfectly suited for this purpose.

THE FUTURE

Men have come and gone in the Grand Canyon, but the scene today is largely the same as it was when the Indian placed his votive figurine within the limestone cave, when the Spaniard gazed in amazement into its depths, and when the American explorer launched his frail boats into the darkening rapids. This is because man has decided that it is best this way; that he should have the unmarred majesty of the Grand Canyon to see, to marvel at, to study, and to attempt to comprehend. Most of the earth may bear the mark of man’s hand, but the Grand Canyon is a work which he has not made, and is beyond his powers to describe. The generations of men with their plans have come and gone here. They have found the Grand Canyon a barrier, a challenge, a prison, a grave, a scientific textbook and a religious shrine. They have left it much as it was. The Grand Canyon, which represents the earth’s long past, belongs to the future generations.

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