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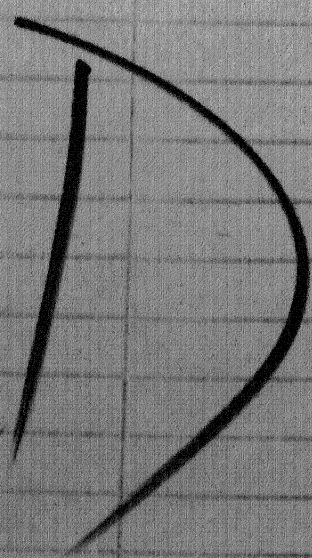
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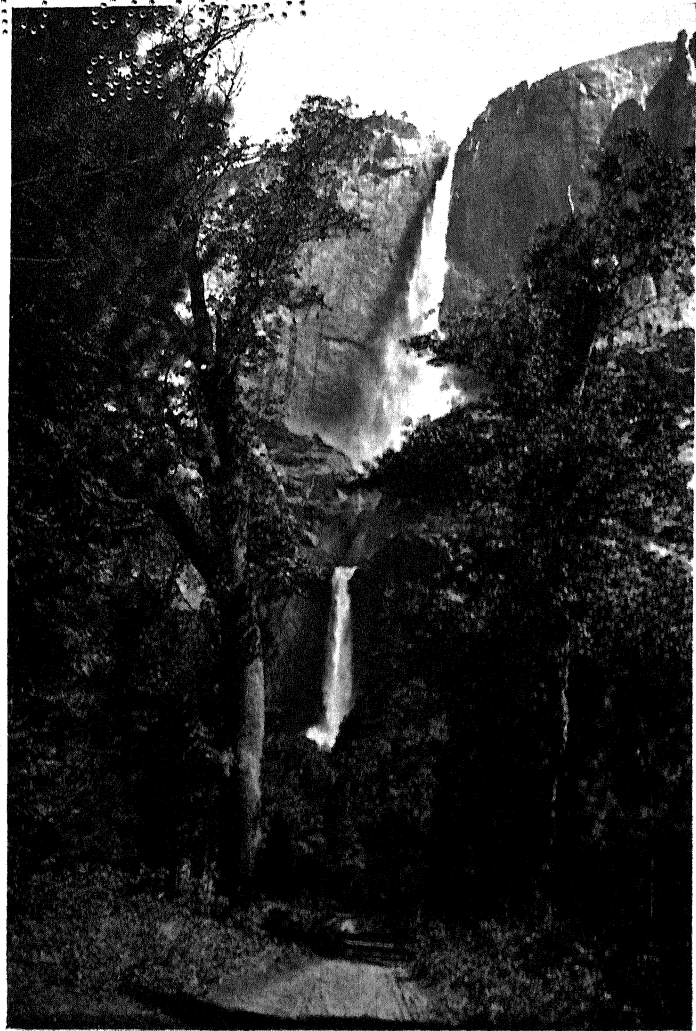
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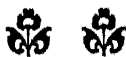
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The Yosemite Falls are the loftiest in the world, with a total descent of 2325 feet. The water makes its long fall in three stages.

Trails Through the Golden West



Robert Frothingham



New York

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TRAILS THROUGH THE GOLDEN WEST
PRINTED IN THE UNITED STATES OF AMERICA

To
ROY STUART FROTHINGHAM
"Gentleman Unafraid"

Contents

CHAPTER	PAGE
1. Old Tucson, Threshold of Arizona	3
2. The Giant Cactus Forests of Mexico	13
3. Tombstone—Then and Now	22
4. Rainbow Bridge—The Discovery	34
5. Rainbow Bridge—The Country	45
6. Rainbow Bridge—The Reality	53
7. The Grand Canyon of the Colorado	61
8. Down the Canyon Trail	68
9. Threading Bright Angel Canyon	79
10. The Petrified Forests of Arizona	89
11. The Apache Trail	105
12. "Montezuma's Castle" and Casa Grande	117
13. Imperial Valley and the Salton Sea	128
14. Death Valley—California's Somber Mystery	135
15. Death Valley—In the Shadow of Mt. Whitney	146
16. Death Valley—Its History	159
17. Santa Catalina and Palm Springs Canyon	168
18. Yosemite Valley and the Big Trees	174
19. Mount Shasta and Crater Lake	191
20. Glacier National Park	206
21. Yellowstone Park, Our Great Wild-Animal Sanctuary	217
22. Zion Park and Bryce Canyon	234
23. The Painted Desert Country	245

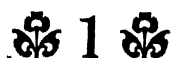
Illustrations

The Yosemite Falls are the loftiest in the world	<i>Frontispiece</i>
	FACING PAGE
The giant cactus, the most remarkable of all desert growths	20
The old mission of San Xavier, not far from Tucson	21
On the road to Rainbow Natural Bridge	36
Rainbow Natural Bridge has the biggest natural arch in the world	37
The mighty rocks in Monument Valley	68
A member of one of the proudest and most pros- perous Indian tribes of the Southwest	69
The series of tremendous caverns which form the channel of the Colorado River	84
The famous Bright Angel Trail	85
The petrified trees that turned to stone millions of years ago	100
The Roosevelt Dam in Arizona	101
Meteor Crater is thought to have been hollowed out by a monster meteorite	116
Montezuma's Castle, one of the finest cliff dwell- ings of the Southwest	117
The sand painters of the Southwest	132

Illustrations

	FACING PAGE
Carriso Gorge, not far from San Diego	133
The sand dunes of Death Valley resemble the waves of the sea	148
The so-called "Devil's Corn Field" in Death Valley	149
The Devil's Golf Course in Death Valley	164
San Jacinto rises above the floor of the desert in a sheer wall of stone	165
The atmosphere of Old Spain still hovers over the ruins of San Juan Capistrano	180
Two thousand feet above the valley floor in Yosemite National Park	181
Overhanging Rock offers one of the most spectacular views in Yosemite National Park	196
The dome of Mt. Shasta is one of the most impressive spectacles of the Northwest	197
Crater Lake occupies the abyss formed by an extinct volcano	212
Glacier National Park has over two hundred mountain lakes	213
The Grand Canyon and the Great Falls of Yellowstone	228
The forest rangers	229
The great gorge of Zion Canyon	244
Galleries in the tunnel on the Zion-Mt. Carmel Highway	245
The famous cliff dwellings in the Canyon De Chelly	262
The Painted Desert, a world of rolling, multi-colored hills	268

Trails Through
the Golden West



Old Tucson, Threshold of Arizona

A LITTLE more than two centuries and a half ago a Jesuit missionary traveled afoot from Puerto Libertad across the Mexican desert into what is now Arizona. Padre Eusebio Kino was a famous Bavarian priest and pioneer—not only a missionary but an architect and engineer, draughtsman, linguist, scholar and all-around technician—but first and foremost a missionary. It was his devotion to the Mother Church which prompted him in 1678 to undertake this hazardous expedition from the upper eastern shore of the Gulf of California. But before following the versatile zealot into the Golden West of yesterday, a word about our Arizona of today.

The meaning of Arizona's original Spanish-Indian name, Arizonac, is not known. "Few Springs" is as good a guess as the next; at least it confines itself to the truth, though a negative side of it. To tell the whole truth about the Apache State is impossible except to an Apache, a true native of its myriad trails, lacking in water perhaps, but abounding in colorful marvels. No little of Arizona's vast area of mountains

Trails Through the Golden West

and deserts is still virgin territory and much that meets the eye is dazzling to the point of bewilderment and superb to a degree that baffles a prose vocabulary. Nothing quite like it in the grandeur of its shadow-flinging canyons and buttes is revealed elsewhere on this globe unless to those whose telescopes bring them within close range of the pitted surface of the moon. There is the same unearthly majesty in Arizona's configuration. The very atmosphere is ethereal.

In order that the mind may adjust itself by degrees to acceptance of the unexpected it is as well to begin with the less astounding section of the state, visiting towns which have invited the innovations of our machine age and are regulated by the clock. These first before venturing into the timeless wilderness. Thus gradually, without too great violence to our stock of hyperbole, we may journey from an up-to-date hotel into the twilight hush of some Mexican church of the 17th century and thence back into the desert—a region primitive as the bedrock of our continent. A visit to Arizona, the real Arizona, is without exaggeration a return to Nature.

Going back to Padre Kino, his missionary journey led him northeastward, two hundred and fifty miles across the desert toward the site of Tucson, where he was to found the mission of San Xavier del Bac. And today the road that follows Padre Kino's trail, though it has never been macadamized, asphalted, or concreted, is nevertheless a far more inviting highway than many another motor road in our country on which great sums of money have been spent, for it runs through the

Old Tucson, Threshold of Arizona

very heart of the Giant Cactus Forests of Mexico and passes some of the oldest and loveliest Spanish missions in the Southwest. The traveler who is willing to forsake the beaten track and retrace Padre Kino's trail will find in these missions remarkable examples of engineering and architectural skill, all of them built by the priest and the Papago Indians to whom he ministered. They are still doing duty today, after two hundred and fifty years of service, and they bid fair to last as many years more.

Of all of them, perhaps the most beautiful is San Xavier del Bac, nine miles south of Tucson, and if we would see it at its best we shall choose the late afternoon to motor down, for it is then that the arid desert is transformed into Apocalyptic glory by the lavender and golden rays of the Arizona sunset, which illumine the snowy towers of the mission against the Santa Rita range in the background. It has not always been so lovely; built by Padre Kino and his Papagos in 1687 it was later almost wholly destroyed by raiding Apaches, hereditary enemies of the Papagos, and for nearly a century it lay abandoned in ruins, until in 1797 it was rebuilt by the Franciscans. They gave it just enough of the Moorish feeling to suggest the Alhambra, though many a traveler has seen in its virginal whiteness and exquisite grace a reminder rather of the Taj Mahal.

From the blinding sunlight without, we enter the soft, still darkness of the interior and pause for a few moments to accustom our eyes to the change. Gradually we understand the reason for the golden glow over our

Trails Through the Golden West

heads. Up on the walls the Franciscan builders—clever artists—laid quantities of barbaric goldleaf, but so high that the light filtering through the clerestory windows is reflected warm and soft, to mingle with the light of the altar candles in just such a mysterious luminosity as would most effectively impress their converts. Just as impressive to the native worshipers—if certainly not to us—are the crude and gaudy pictures of Biblical scenes, the brilliantly colored and lace-clothed Holy Families, the haloed saints in their niches. Only one feature among these furnishings is worth our attention—the pair of huge Castilian lions of carved wood that guard the altar treasures; the priest tells us that they were brought from Spain.

As we leave the church we notice the four-foot thick walls of adobe, excluding all sound as well as the desert heat. Ranged along the sides of the courtyard at the rear are the tiny schoolrooms that in former times were the monks' cells. Here the Papago children are being taught by a nun. A narrow stairway in the walls leads up to an organ-loft—no organ, however—and to the bell-towers on the roof. Only one of these towers was ever finished, but the same bells on the same iron-wood beam from which they were hung in 1797 still summon the faithful. From this belfry we get a memorable view of the Santa Ritas, casting their long shadows across the golden-brown desert. And while we stand there, an Indian boy may present himself for his duty of ringing the bells for evensong. The service will be short; there will be few in attendance—perhaps none at all. For it must be admitted that the Papago of

Old Tucson, Threshold of Arizona

today, while still devoted to the mission and proud of it, is alive also to the financial opportunities it offers. We are not surprised, therefore, to find—especially if the resident padre is not watching—a barefooted native in blue overalls at our side, eager to guide us around the place for a consideration. But he cannot spoil it for us; its ancient dignity is proof against any such intrusions, and we leave with the hope that the Franciscan brotherhood may continue for many years more in charge of that dignity.

Mountain and desert surround the city of Tucson. Indeed, the town seems set down in a bowl of desert ringed on all sides by jagged mountain ranges brilliant in color. The traveler who is unused to the Arizona desert will find here a charm that consists partly of amusement, for it will seem to him that the all-absorbing concern of the Tucsonian is the effort to make grass grow. Every householder wants his struggling bit of grass-plot, but he must reconcile himself to keeping it alive for only half the year. He may, it appears, choose whether he will have his grass green during the spring and summer months or during the autumn and winter—he cannot keep it alive the year round. Six months of life is the limit for Tucson grass. So as we walk along a prosperous residential street we shall see here a flourishing lawn, on which the garden hose plays all day long—and next door a patch of forlorn brown grass whose life has been burnt out by the scorching desert sun. Six months later the relative situation will be reversed. Only one “resident” of Tucson, apparently, succeeds in maintaining the verdant fresh-

Trails Through the Golden West

ness of its lawn throughout the year—the Southern Pacific Railroad, whose station is surrounded by year-round grass, green and lush, that must make the Tucsonians sick with envy. And to the desert-weary traveler who comes in on the Southern Pacific this grass-plot seems perhaps the most familiar thing he has seen thus far in the Southwest. For his journey has carried him all day long through a vast expanse of desert broken only by extinct volcanic craters, around whose bases rise the columns of the giant cactus—the Saguaro; interesting, impressive, and not to be forgotten. But the moment his train pulls into the Tucson station he is perfectly willing to exchange it temporarily for the welcome sight of green grass once more. And so skillfully do the railroad authorities handle the problem of rotating crops of grass that it is impossible to see where the outgoing crop leaves off and the new one begins.

But what gives Tucson its undeniable charm is neither the curiously varied grass-plots nor the ubiquitous umbrella-tree; it is the pervasive sense of the close-creeping desert roundabout. From the outskirts of the town, where its streets lose themselves in an illimitable growth of cactus, clear into the heart of the commercial district, the desert dominates. Even the casual visitor quickly catches this feeling, so that it is hard for him to realize that a few miles away and a few hundred feet above him, on the mountain slopes, there is greenery in profusion—green undergrowth thick around the foot of the towering forest pines, sixty to seventy-five feet high, running upward toward the timber-line like a tremen-

Old Tucson, Threshold of Arizona

dous army. No—what fascinates him here is the desert, and he will find that once it has laid its spell on him he will want to return to it again and again, even though he may not be able to put into words the impression it has made on him. He will not smile when he hears a rough-riding cowboy talk of Arizona as “God’s Country”—he will cordially agree.

But the desert that for years has made the character of Tucson now has a rival force to contend with. Like all the small cities west of the Rockies Tucson is falling victim to that brand of Progress which is embodied in enterprising Chambers of Commerce. At the dictates of the spirit that regards the skyscraper as the perfect fruit of human endeavor, the primitive charm of Tucson is fast disappearing. The town is one of the few remaining survivals from an era notable for romantic adventure, and it is hardly less than tragic to see it changing. When we think of lovely old Tucson, the walled city with its charter granted by the King of Spain in 1552—Tucson, the “Old Pueblo,” with its ancient Spanish atmosphere—Tucson with its history as a frontier town, its peculiar personality not to be duplicated in all the Southwest—Tucson, the home of the rodeo and the intrepid and daredevil cowpuncher—when our minds go back to these aspects of the city in the past we can only mourn its present transformation into a “thriving municipality.” Tucson hustles now; its population is 32,000, it has vacant building lots galore and miles of suburban land awaiting “development,” its hotel and its office building have skyscraper aspirations. You realize at once that the citizenry’s idea of attracting

Trails Through the Golden West

visitors is to provide them with what they are used to at home. . . .

But for all that, there is much in Tucson that no Chamber of Commerce can either mar or destroy. She can never be robbed of her desert, her heavenly sunsets, her fine climate; no skyscrapers can prevent the traveler from feasting his eyes on the flowering cactus or the somber dignity of the giant Saguaros. The city and its environs remain a delight, especially to the enthusiastic motorist, since what were once mere desert trails through Arizona are now for the most part excellent motor roads. There is little rainfall, and what there is can be avoided easily, because it is confined to the months from July to September, when few persons would wish in any case to take to desert travel. And Tucson has solved the problem of motor service: the traveler who does not have his own car may either hire one by the day or week, with or without a driver, or buy one from a local dealer with the understanding that it will be bought back again at a stipulated price within a specified time. There is also excellent taxi service.

Except on the regular and familiar highways it is unwise to undertake desert motoring without an experienced driver—experienced, that is, both in desert driving and in actual knowledge of the roads. The stranger who tries to drive himself will encounter long stretches of unfamiliar road, with frequent crossroads that lead eventually only to some cattle ranch where nothing but Spanish is spoken—and he will wish heartily for some native Arizona assistant. For public highways in Ari-

Old Tucson, Threshold of Arizona

zona are different, as the Easterner soon learns. There is a fine road, for instance, running southwest from Tucson for seventy-five miles to the little customs town of Sasabe on the Mexican border and skirting the base of the picturesque Babo Quiviri mountains; it passes through a privately owned cattle ranch covering 300,000 acres. One might motor the entire seventy-five miles without seeing a soul—and lose one's way in the bargain. The desert is no place to get lost in, especially if water runs short or the motor breaks down; though it is also true that, once its lessons are learned, it is a wonderful place for motoring.

The first time I landed in Tucson, some years ago, I ran into my old friend John Wetherill on the street. He had motored down from Kayenta over the Apache Trail, had finished his business, and was about to start for home. Learning that I was contemplating a desert trip, he planned for me the one that follows. I doubt whether there is in all Arizona or northern Mexico a desert trail or a motor road that this old pioneer does not know. Both of us took with us our camping outfits, for Wetherill would rather stretch his lean, muscular frame on the sand than "bed down" in the finest hotel ever built. We started out in his car, bound for Puerto Libertad on the Californian Gulf, to retrace in the opposite direction the trail that Padre Kino had taken two centuries and a half ago, a straightaway of two hundred and fifty miles through the Giant Cactus Forests of Mexico; and we returned by way of the historic town of Tombstone, the Wonderland of Rocks in the Chiricahua Mountains, and the transcontinental motor highway,

Trails Through the Golden West

passing through those husky little Southern Pacific mining towns in the Dragoon Mountains—Willcox, Cochise, Dragoon, and Benson; and thus back to Tucson. During the leisurely two weeks that we took to cover nearly a thousand miles we slept in hotel beds just two nights. We might, of course, have gone to hotels much oftener than that, but this was not what we wanted; we missed no opportunity to throw our sleeping-bags down on the warm, clean sand of the desert and count the stars in Orion before going to sleep. And it should be mentioned that in the crystal-clear atmosphere of the desert twice as many stars are visible as can be seen from any point east of the Rockies. We had a full moon, too—a typical desert moon, of so deep and rich an orange color as hardly to be identified with the moon whose gentle silvery radiance lights the evenings of the Easterner.

Trails Through the Golden West

tudes that overtook all the Spanish missions of that early day: the abolition of the Jesuits by the Spanish Crown and the advent of the Franciscans, the attack by bloodthirsty Apaches and the dispersal of the priests with their humble Papago charges. It lay in dire ruin until it was discovered by Americans in 1850. From that time onward some care was bestowed on it, and finally—in 1908—it was made a National Monument. Fortunately there has never been any attempt at complete restoration, and it stands there today, in somber dignity, with just enough renewal of its crumbling architecture to preserve the beauty of the original design. At stated times during the year a Franciscan priest comes to celebrate mass for the benefit of the Papagos in the vicinity, and thus the ancient shrine still functions, though its glory has departed.

Reaching Nogales in mid-afternoon, we spent the rest of the day in arranging for our passports with the customs officials, and finished with an excellent dinner in a restaurant over the border. This restaurant was once the calaboose of Mexican Nogales and consisted of two or three dungeons hewed out of the rocky mountain-side. Today, with its attractive Mexican decorations, electric lights, good dancing-floor, and native musicians, it constitutes a popular oasis for the Tucson folk and for the occasional visitor. It provides a choice selection of aguardiente, mescal, and tequila, as well as American drinks; nor will the visitor neglect the excellent beer from the great Mexican brewery at Hermosillo—the *cerveza* of which all Mexico is so proud. But do not try, when you start back across the border, to play smug-

The Giant Cactus Forests of Mexico

gler—either internally or externally. On your ride down from Tucson you may have noticed the many picturesque turns taken by the road; sometimes, when you go back, these turns seem to have doubled in number, and there have been altogether too many bad accidents on that road on Saturday nights for you—a visitor—to take any chances.

As I have already intimated, water is an essential in desert travel. John Wetherill's 25-gallon keg will always be found, full, in the tonneau or securely lashed on the running-board. Its contents serve for drinking, cooking, bathing, and cooling the overheated motor. Indeed, you will never dream how many uses water has until you find yourself caught short some warm morning. And it is to be remembered that not all the wells on the Mexican desert ranches are so pure as might be desired. So in order to be safe we put in a couple of cases of the Hermosillo *cerveza*, kept delightfully cool (as any liquid will be in the desert) by being snugly wrapped in a blanket. To my sorrow, it occurred to me, after we had started, that John is pretty nearly a total abstainer—at any rate, I have never known him to take anything but water while he is driving a car in the desert; and so I had to drink all the *cerveza*.

Shortly after leaving Nogales we passed through a series of small desert towns with such musical names as Torcuato, Planchas de Plata, Rancho Arizona, Aquimuri, Saric, La Reforma, Tubutama (where may be seen another of Padre Kino's picturesque missions, San Ignacion, built in 1692 and still in use), Atil, and Quitoa; and eventually reached Altar in mid-afternoon,

Trails Through the Golden West

after a leisurely run of ninety miles. Here we found a flourishing general store and a good gasoline station. We had decided to wait to buy our grub until we reached this point, so as to avoid paying duty at Nogales. We also laid in plenty of gasoline and oil, and refilled our keg with fresh water from the never-failing well which is the town's greatest asset. But instead of putting up at Altar's one little hotel, we drove out of town and settled down on the sand for our first night of camping on the desert. We were protected from the wind by a patch of creosote or "greasebush" growing beside the bed of a dry stream, so-called because it is very inflammable and is thus useful in starting a campfire. As usual in the desert the temperature dropped rapidly between midnight and morning. When I got up to slip on an extra sweater John was nowhere to be seen—he had pulled his blankets over his head and buried himself. The desert wind has a note all its own, a moan which on that night suggested that a storm might be rising; but it was a false alarm—we had perfect weather then and throughout the trip.

All the way from Tucson the giant cactus or Saguaro is in evidence. Not, however, until one reaches the vast expanses of desert south of Altar is it seen at its maximum size and growing in forests. The plant reaches forty or fifty feet in height, two to four feet in diameter, and six to eight tons in weight. It is the most curious vegetable growth in the Southwest and Mexico. During the first eight or ten years of its life it attains a height of less than three feet; by the time it is thirty years old its height has increased to four feet, and after that it

The Giant Cactus Forests of Mexico

averages an annual growth of four inches, its lifetime being from 150 to 200 years. Most remarkable of all its characteristics is its water-content—97½ percent, in spite of the fact that there is no water for hundreds of miles around it and that it has no tap-root at all. Its tremendous bulk is anchored lightly in the sandy soil, its roots lying only a few inches under the surface and spreading laterally from six to ten feet. The trunk, rising straight and graceful as a Doric column, is marked by vertical lines of sharp spines extending up and down its entire length, and these spines run also along the branches. The latter number from two to fifty and look like huge tridents, or monster candelabra; there are curious malformations to be seen frequently, as when the branches turn downward and curve around the trunk, sometimes reaching to the ground, where they take root and start a brand-new growth upward, a few feet from the parent stem. And all of this is green, trunk and branches alike, except for the flowers. In the spring the Saguaro bears a waxy white flower with a pale yellow center; it grows on the extreme end of the branch, very close to the skin and without any stem. The odor of this exquisite bloom is almost cloyingly sweet. Small wonder that Arizona has adopted it as the State flower. The tree bears also a pear-like fruit which, when ripe, is a favorite food of the Papago Indians. They are very skillful at stripping off the spines, so as to make the fruit eatable.

When we reached the lush orange groves of Pitiquito we loaded up with a quantity of oranges to go with our native luncheon, and then started on the remaining

Trails Through the Golden West.

147 miles of our journey to the sea. From here on, the desert is an almost impenetrable mass of cactus, in every known variety. There is the Nopal or flat cactus, green and pink, deepening to a rich purple at maturity; this bears the well-known prickly pear, as well as gorgeous flowers, bright red, with their edges tinted yellow. The masses of these flowers suggest gay flower-beds, from a few feet square to a quarter-acre in size. It is on this cactus that the minute and brilliant red insect, the cochineal, flourishes; the gathering of these insects, for dyeing purposes, is one of the oldest industries in the world.

The Visnaga or barrel cactus is known also as the candy cactus. It contains a sweetish water which the traveler can extract in sufficient quantities to drink; candy also is made from this juice. The flower is deep red at the base, fading to pinkish white at the edges; the mass of yellow blossoms in the center develops into a yellow, banana-like fruit with brown tufts at the end—this also is a favorite among the Indians.

Sinita is the crested cereus or "gun swab," springing from the ground in an upward-curving and outspreading fashion. From twenty-five to fifty heavily ribbed branches are found in a clump, and the height is three to twenty-five feet. The exquisite flowers open at six o'clock at night, are full-blown at nine, and are closed by morning. Pitalla, a near relative of Sinita, has rounder branches and more ribs. It resembles the pipes of an organ and is commonly known as the organ cactus.

Idria, found in the vicinity of Libertad, is one of the oddest of them all: a tall, tapering, spindly growth,

The Giant Cactus Forests of Mexico

buff in color and seamed like a carrot, covered with short, bushy limbs and dense leaf formation. The center is filled with pith, and the trunk divides at the top into two vertical branches, like a fantastic tuning-fork. A veritable "what-is-it?"

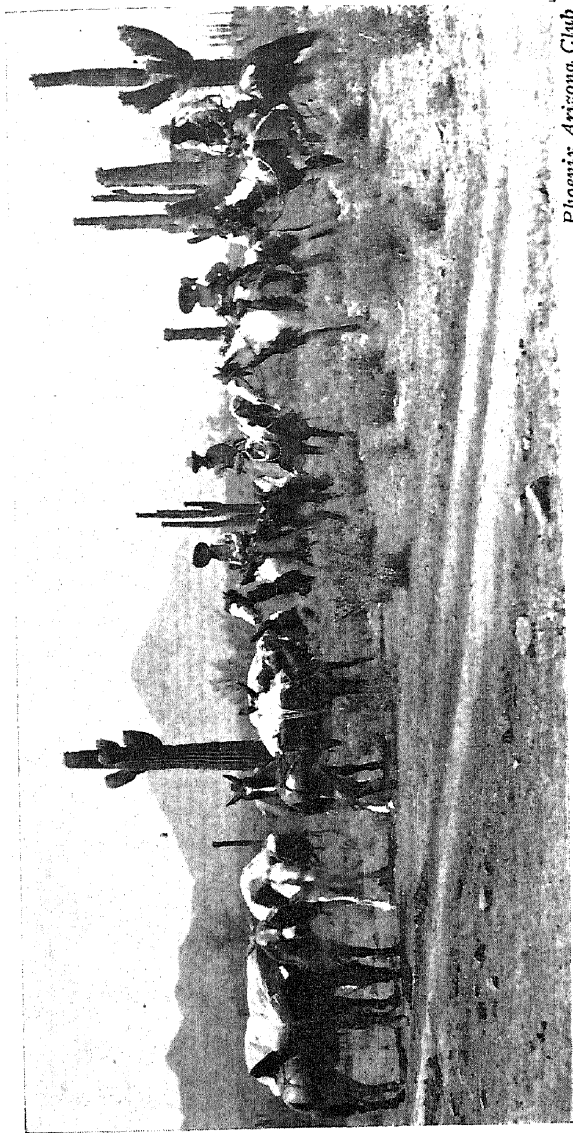
Sowesa is the grandfather of the cactus family, a night-blooming cereus—though one would hardly believe it to look at this huge pachyderm, taller and larger in every way than the Saguaro though not so symmetrical. This monster—its height is fifty to sixty feet—has a pinkish brown, woody trunk from four to six feet in diameter; and its bright green, vertical branches (ten to fifty) are popular with the fish-hawks of the Gulf, which nest in them year after year.

Both the Saguaro and the Sowesa are much used by the barred woodpecker for nesting. Though this bird constructs the same kind of nest as his eastern cousin, the flicker or golden-winged woodpecker, he faces a more complicated domestic problem. When the barred woodpecker drills his hole in a cactus branch and excavates it for several inches below, he releases a flow of the sap that practically inundates his prospective home, and then he has to wait until this sap coagulates and hardens. But the result is that he owns a permanently weather-proofed house, and that he returns to it every year with his mate—the same mate—while the young birds each season drill holes elsewhere for their nests. This explains why practically every Saguaro and Sowesa has from three to a dozen holes drilled in its branches, exactly like the holes made in dead trees^s by the eastern woodpecker. Here, too, lives the cactus wren^s,

Trails Through the Golden West

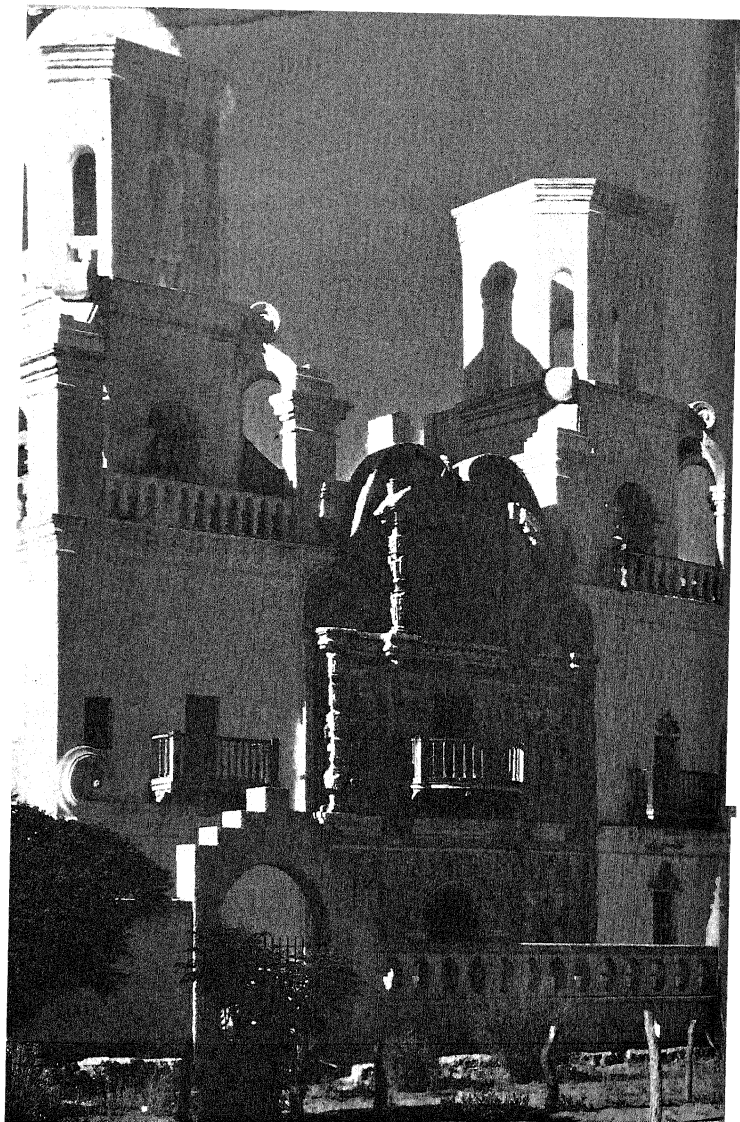
whose nest is like the oriole's, with a tunneled entrance six to ten inches long, made of grass—his defense against attack from owls, hawks, and other predatory enemies. To find thus, in the same cactus, several internal drilled holes and as many tunneled ones on the outside, all inhabited by birds, is one of the interesting experiences that reward the visitor in this desert-land. If he makes his trip in the spring he will be doubly rewarded by hearing the haunting music of the cactus wren's song.

Besides the huge tree cacti there is a wide variety of smaller growths—smaller and more sinister—fairly smothering the desert. The Ocotillo has long, sprawling, bush-like branches that spring from its root and are covered with tough spines. The gorgeous flower is bright red and drooping, like a suspended spear-head. A deadly cactus to encounter unawares is the Cholla—purple, green, or silver—whose fiendish thorns, barbed and needle-pointed, are so tough that they will pierce heavy shoe leather. Its red, yellow, or purple fruit hangs temptingly in luscious, grape-like clusters, but beware of it—leave it for the deer, antelope, and hardy Indian cattle, for which it is prime fodder, spines and all, and drink as well. Add to all these cacti the mesquite and the iron-wood trees, and the delicately beautiful and wide-spreading Palo Verde (green pole), which attains the age of two to three hundred years and in the spring bursts forth into a golden glow of flowers—and you have the oddest-looking desert imaginable, with little resemblance to the Sahara type that the word "desert" commonly suggests. It is almost a jungle rather than a desert, this



Phoenix Arizona Club

The giant cactus, the most remarkable of all desert growths, reaches to a height of from twenty to thirty feet or even more.



The old mission of San Xavier, not far from Tucson, Arizona, is one of Spain's finest architectural achievements in the Southwest.

The Giant Cactus Forests of Mexico

nearly impenetrable mass of growth that stretches for hundreds of square miles. The way taken by Padre Kino when two hundred and fifty years ago he succeeded in breaking through that formidable barrier is shown in the serpentine trail that he followed, doubtless along the line of least resistance, until the thorny growth began to thin out a little and he could take a straighter course.

It is an eerie experience to camp among the Saguaro and the Sowersa while the moon is full. You drive along the trail until a spot is found that is large enough to accommodate the car and a fire and a couple of sleeping-bags. It is well to keep a sharp lookout for Cholla and Ocotillo thorns, for they are expert at puncturing; if you do any walking, watch your step. If, after you have rolled into your bag and gone to sleep, you happen to awake a few hours later, you will find it a memorable experience to watch and hear Night in the desert. Huge, ghostly shadows of cacti in a hundred forms surround you in the moonlight. Not a movement of any kind anywhere. Not a sound. Even if the wind is blowing, still these gigantic growths will be motionless—there are no leaves to flutter delicately in the desert. No animal life, either, for the only denizens of the cactus forests are deer and peccary, with (rarely) the cougar, and all of these are more afraid of you than you are of them. They will not come anywhere near a camp, day or night. Nothing but shadows and moonlight, silence and stillness—and you curl up in your sleeping-bag once more with the reflection that such an experience is hardly to be duplicated anywhere else on earth.

Tombstone—Then and Now

IMAGINE a spring of absolutely pure water bubbling up from the sea beach, and accessible only at low tide. This is one of the attractions of Port Libertad—its sole water supply, indeed. One wonders whether Padre Kino discovered it. Anybody who needs fresh water at this edge of the desert has simply to wait for ebb tide, dig a hole in the sand, let it fill, and then ladle the water into his pail. If he wants a bath he simply enlarges the hole. The water is tepid, but becomes ice-cold if left overnight, and it is purer and sweeter than any that ever flowed from a municipal spigot.

Libertad today is a fishing station, furnishing all the fish for Tucson and one or two other towns in the vicinity. If you enjoy salt-water fishing you will nowhere find better than is afforded by the Gulf of California. Take your fishing rod—you can get boats and men at Port Libertad. It may be mentioned in passing that three miles farther south in the Gulf lies Tiburon Island, the home of the Seri Indians, who have the lowest mentality of any human beings in the world.

To me the most wonderful sight here at Libertad

Tombstone—Then and Now

is the setting of the sun. Something in the atmosphere gives a pure lavender coloring to the sunset. I saw it two evenings in succession. The best point from which to get a view is in the small range of foothills a couple of miles down the coast, where mountain peaks intervene between the desert and the Gulf. When I saw it from here, as the sun disappeared behind the range, the eastern horizon and the vast extent of desert in between were filled with reflected light, which turned into a bright, startling lavender, rolled over the landscape toward me like a tidal wave of resistless color, and seemed to stop almost at my feet. The light contained not the slightest suggestion of any other hue in the spectrum—just that radiant projection of pure lavender that rose and fell like a filmy billow of resplendence. For a few minutes it remained unchanged; then darkness crept over the scene. I have looked at sunsets in nearly every part of the world, in the Orient and on the Seven Seas; but never before nor since have I seen such matchless glory enfold the brooding earth as when that tremendous flood of lavender swept over the endless green of the Giant Cactus Forests deploying toward the Gulf.

On the north and south Libertad is fenced in, as it were, by gaunt and lofty mountains, deeply serrated and ending at the sea beach. Between these runs a long, curving shingle, forming, on the north, a peninsula reaching out into deep water. At the extreme end of this peninsula may be seen the grass-grown and sand-drifted foundation of an ancient building, long since gone to ruin, said to be the remains of Padre Kino's headquarters in the seventeenth century. It may well

Trails Through the Golden West

be so. Certainly no one else would have been interested in building on that deserted and lonely spot.

After two days of high living on fresh fish, with several plunges *au naturel* in what was the only salt water nearer Tucson than the Pacific, we were ready to start back. Another night of camping in the heart of the Cactus Forests, beneath a moon now a little past full, watched over once more by the towering sentinel Saguaro, defined like silhouettes against a velvety sky. Nearby an owl hooted—the only sound that broke the deep silence.

On the way back to Nogales we detoured through the ancient town of Caborca on the Altar River. This sleepy old place, which has survived the flight of two and a half centuries, is historically important for two reasons. San Concepcion is here, another one of Padre Kino's architecturally impressive missions, built in 1697 and still in service; and here, in April, 1857, bloody massacre overtook the notorious Crabbe filibustering expedition. Those were the days, before the Civil War, when filibustering was a popular sport. If the program went through without a hitch and perhaps added some useful territory to the United States, then the filibusters were patriots. But if the plan failed, and somebody either faced a firing squad or else got butchered in cold blood, then it was piracy, and the victims—no matter how gallant—were left to their fate. And it was usually the latter that happened to these buccaneers. Here is the story of the Crabbe expedition.

Taking advantage of an impending revolution in the State of Sonora, Mexico, State Senator Henry A.

Tombstone—Then and Now

Crabbe, a popular Southerner who had been drawn to California by the Gold Rush, sailed out of San Francisco Bay in January, 1857, with a hundred rollicking fellow-conspirators, bound for the Gulf of California, whence they were to make their way overland to the little town of Caborca. Here they were to be reinforced by nine hundred other Americans, all intent on carving an empire out of Mexican territory by force of arms. It was a heterogeneous gathering—a former United States Senator, several former members of State legislatures, some ex-officers from the Army, a former State Treasurer and Comptroller, and a number of prominent professional men from California and Arizona, all ready to win fortune and glory. The average age of the members of the expedition was under twenty-five.

But something went wrong with the reinforcements, and when the San Francisco contingent reached Caborca they were met by a company of Mexican soldiers who had fortified Padre Kino's old mission and from it ambushed the Crabbe expedition. Every man was exterminated; no quarter was given. The soldiers then delicately removed the head of the leader, Crabbe, and sent it to Governor Ignacio Pesqueira as a souvenir—a significant gesture in view of the fact that the ostensible purpose of the expedition had been to assist Governor Pesqueira in putting down the revolution, and Crabbe had been counting on him for co-operation in carrying out its real purpose. This episode ended filibustering in Mexico once and for all.

The story is told in eloquent Spanish on a large brass

Trails Through the Golden West

tablet mounted on the outer walls of the mission, close by the entrance, where it may be seen by the devout as long as the mission shall stand. It ascribes endless thanksgiving and honor to Almighty God, in whose name the ambush was made and whose assistance is acknowledged. But unless something is done to the building in the way of repairs, the memorial will not last so long as the devout hope; for the Altar, like most Mexican rivers, has been eating its way insidiously into the bank on which the old pile stands and has undermined one corner, and it is only a question of time when the ancient structure will tumble into the river. San Concepcion will repay the trouble of a visit. So will San Ignacion at Tubutama, built by Padre Kino in 1692. Both of these missions lie on the padre's trail and so can be seen in a short time. In each case it will be found worth while to climb up into the belfry.

Running seventy-two miles due north from the Mexican border-city of Nogales, up hill and down dale, is one of the finest desert roads in all Arizona, the highway to that picturesque old mining town of trouble and tragedy, lying at the foot of the Dragoon Mountains—Tombstone. The road winds through the ancient oaks of the Coronado National Forest and past a number of "dude ranches" (elegantly known as "guest houses"), where Easterners may live at a rate that suggests a city hotel but in vastly different and more delightful surroundings. We mount the crests of rolling hills, around us occasional patches of Saguaro, barrel cactus, and high-reaching maguey plant with its bamboo-like stalk and its cream-white flowers, from which Mexicans have

Tombstone—Then and Now

made their *tequila* from time immemorial. We breathe the purest and driest air that ever brought an invalid back from the shadows, and every moment brings us an invitation to loaf and invite our souls. This is the land where once on a time the only trail lay through the dreadful haunts of the Apache, and any traveler who loafed and invited his soul did it at the risk of losing his scalp. Fortunately that day is now long past, though—just as fortunately—much of its original atmosphere remains for the enjoyment of the few who know anything about it.

In the early eighties Tombstone was the only flourishing town in Arizona—"not a bad town" at all, the residents were continually having to explain; on the contrary, "a nice, quiet, clean town." As they put it to you, it would be strange if, with a population of 6500, most of them engaged in mining, a few lawless characters didn't now and then drift in. . . . An often-quoted editorial in the *Tombstone Nugget* called attention to the improved conditions that a newly elected sheriff had brought about, citing the fact that there had been "but one killing, one stabbing affray, one stage robbery, and one Apache outrage" since the date of the previous issue. To illustrate the conditions that prevailed in the old days, here is the story of the killing of Billy Claibourne by Frank Leslie, known as "Buckskin Frank."

Leslie was a bar-tender in the Oriental Café. Billy came in, a trifle the worse for wear and inclined to be offensive. He was thrown out. He got peevish and proceeded to arm himself with a sawed-off shotgun. Then,

Trails Through the Golden West

concealed behind a fruit-stand adjoining the café, he waited for Leslie to come out. Someone told Leslie—"Buckskin Frank"—about the surprise party that was waiting for him outside the door. He laid on the bar the cigar he was smoking, took out his .45, and, stepping out of the side door, walked softly down the alley toward the street. Spotting his man he quietly called out, "Billy!" Clairbourne turned, and a split second later was drilled neatly through the heart and crumpled up under the fruit-stand. Leslie returned to his bar, picking up the cigar, which was still smoking, and remarked nonchalantly: "He died nice." Self-defense was Leslie's plea before the jury, and it goes without saying that he was acquitted. Little incidents like that were all in the day's work in Tombstone, though it should be added that a woman was just as safe on the streets of the old town as if she were in her home, and it was seldom that a man who attended to his own business got into trouble. The outstanding exception was the death of M. R. Peel, a quiet, inoffensive, and highly esteemed employee in the offices of the Tombstone Mining Company. He was shot by a couple of bad men who were intent on burglary. They were both found guilty and condemned to be hanged. The last words of the man who did the shooting were to the effect he "must have been a bit nervous," because he had had no intention of shooting Peel and was sorry the *accident* had occurred. Curiously enough, Peel, a worthy citizen, was buried in Boot Hill, the outlaws' cemetery on the desert edge, just outside the town, where the remains of those who had died with their boots on were deposited, rather than

Tombstone—Then and Now

in the Episcopal graveyard. Incidentally, Peel's grave is the only one with a monument, in that deserted and tragic spot. Oblivion has overtaken the names and the deeds of the men buried here—even the dates; and the flying years have nearly reduced those pathetic, unmarked mounds to the level of the desert which will eventually hide them from sight. Every wild western town had its Boot Hill in those days of "high, wide and handsome" riding when the .45 spoke first and explanations, if any, came only afterward. But if the truth were known, Tombstone's necrology would divulge a royal list of bad-men that would defy all competitors.

It was Tombstone's Boot Hill that inspired the following verses by Sharlot M. Hall, Arizona's well-known and beloved poet:

BOOT HILL

*Go softly, you whose careless feet
Would crush the sage-brush, pungent, sweet,
And brush the rabbit-weed aside
From burrows where the ground-squirrels hide,
And prairie dog his watch-tower keeps
Among the ragged gravel heaps.
Year long the wind blows up and down
Each lessening mound, and drifts the brown,
Dried wander-weed there at their feet—
Who no more wander, slow or fleet.
Sun-bleached, rain-warped, the head-boards hold
One story, all too quickly told:
That here some wild heart takes its rest
From spent desire and fruitless quest.*

*Here in the grease-wood's scanty shade
How many a daring soul was laid!*

Trails Through the Golden West

*Boots on, full-garbed as when he died;
The pistol belted at his side;
The worn sombrero on his breast—
To prove another man the best.
Arrow or knife or quick-drawn gun—
The glad, mad, fearless game was done;
A life for stakes—play slow or fast—
Win—lose—yet Death was trumps at last.*

*Some went where bar-room tinsel flared,
Or painted, dance-hall wantons stared;
Some, where the lone, brown ranges bared
Their parched length to a parching sky—
And God alone might hear the cry
From thirst-dried lips that stiff and cold
Seemed still to babble: "Gold! Gold! Gold!"
Woman or wine or greed or chance—
A comrade's shot, an Indian lance;
By camp or canyon, trail or street—
Here all games end; here all trails meet.*

*The ground-squirrels chatter in the sun;
The dry, gray sage-leaves, one by one,
Drift down, close-curved in odorous heaps;
Above, wide-winged, a wild hawk sweeps;
And on the worn board at the head
Of one whose name was fear and dread,
A little, solemn ground-owl sits.
Ah, here the man and life are quits!
Go softly, nor with careless feet—
Here all games end; here all trails meet.*

At the entrance to the town, on the main highway, will be seen a rough stone monument to Ed Schieffelin, the U. S. Army scout who gave up his job to go prospecting, and who located the celebrated silver mine which he dubbed "Tombstone" and from which the town took

Tombstone—Then and Now

its name. About a year after he left the Army, his old chief, Al Sieber, came upon him sitting beside a pile of rock with his rifle across his knees, and the following conversation took place:

“Whatcha doin’, Ed?” queried Sieber.

“Prospectin’, mostly,” drawled Schieffelin.

“Whar?”

“Over yonder”—and Ed waved his arm toward the Dragoon Mountains.

“All you’ll ever find in them hills will be yer tombstone,” warned the scout. “Old Geronimo will git ye if ye don’t watch out, an’ leave yer bones for the buzzards to pick.”

“I’ll take a chance,” was the laconic reply.

Untold millions of dollars’ worth of silver were taken out of that mine. The rest is history. Today, in the main street, the traveler will be shown the original diggings, as well as the stope or ore stairway, of an almost equally productive mine, out of which ore was brought from below, and around which the town grew up.

The old Oriental Café is still doing business, but with soft drinks. The famous Bird Cage Theater, in which Eddie Foy was a prime favorite in the old days, is still there, likewise the notorious Can Can Café and gambling house. The *Tombstone Epitaph*, a weekly paper that flourished in those halcyon days, is still published, across the street from the corral where the famous (and infamous) Earp-Clanton-McLowery feud was fought to a finish, the echoes of which may still be heard throughout the Southwest. Yes—twenty-four hours can be profitably spent in Tombstone, even though today it is as silent as its name would imply.

Trails Through the Golden West

A brief run from Tombstone across the desert—about fifty-five miles over another excellent road—brings the pilgrim to the Wonderland of Rocks in the Chiricahua Mountains. This area is so important in its curious and wonderful scenery that the Government has set it aside as a National Monument. It is the one spot in the Southwest where Nature has played the caricaturist—nowhere else will we see such fantastic effects of erosion. It looks like a Witches' Sabbath; the shapes and silhouettes are really astounding. Balanced rocks, slides, caves, underground passages—these, on the one hand. On the other, veritable caricatures of birds, animals and men—no familiar living thing is spared. At every turn we are met by outlandish faces and figures. Dwarfs and crookbacks, hobgoblins and nightmares, all these are impishly hewn out of the rock by the action of the elements. And fortunately this Wonderland of Rocks is far enough from the usual paths of sightseers to be free from most of the well-known pests of travel.

You will be housed at Far-away Ranch, a lovely spot at the entrance to the valley, presided over by an elderly woman and her son, the latter acting as custodian. Entertainment and saddle-horses may be had at reasonable cost, and after a night's rest you may start off on your horse for the easy climb up a mountain trail shaded by lofty conifers. In the old days the Apaches had a stronghold here, and the trail was the one used by those redoubtable warriors long before the white man came upon the scene. On reaching the summit—it is an easy climb—you will sit down in a spacious amphitheater with your field-glasses and imagine yourself at one of

Tombstone—Then and Now

those old-time cycloramas that were so popular in the days of our youth. You will see Nature burlesqued, travestied, and parodied in uniquely ludicrous fashion. And then finally your guide will point out an amazing silhouette of startling clarity formed by the peaks of the Chiricahua Range. It appears as the recumbent figure of an Indian and is called Cochise Head, after the famous Apache Chief of that name. In comparison with the farcical display that you have been looking at, this massive, august creation will leave an impression of dignity and nobility that will remain in your memory for many a day.

These are some of the high spots that are not to be come upon by following the beaten track. By all means, visit the Wonderland of Rocks. A letter addressed to Far-away Ranch, Dos Cabezas, Arizona, will bring a motor to the little mining town of that name, fifteen miles from Willcox, on the Southern Pacific, just ninety miles east of Tucson; and you can return to that town or to Tombstone, as you prefer. From Tombstone you can reach the Southern Pacific at the main line station Benson, in the midst of the desert. Or you may do as Wetherill and I did: start from Tucson for the Giant Cactus Forests in Mexico and return via Far-away Ranch to the little town of Willcox for the night, a ride of thirty-six miles; thence by motor the next day through Cochise and the picturesque Dragoons to Tucson—a lovely finale, with some remarkable mirages en route. You won't miss them. They'll find you. Rewards await him who travels hopefully with an elastic schedule.

Rainbow Bridge—The Discovery

“**R**AINBOW-TURNED-TO-STONE” — this was the name given by the Navajo Indians, centuries before Rainbow Bridge was known to the white man, to this marvelous example of the effect of natural erosion. It lies hidden away in the depths of a great gorge tributary to the Grand Canyon of the Colorado, at the heart of the desert region of northern Arizona and southern Utah. This natural bridge of stone is not only exquisitely proportioned—for all its stupendous size—but its coloring is to be conceived only if we summon the rainbow as comparison.

If the place were accessible by railroad, its musical Navajo name, Non-ne-zo-she Na-gee-lid, would be on the tongue of every traveler through our Southwest. But since the only way to reach it is by pack-train over a rough and arid country, it has been seen only by approximately a thousand white men since its discovery a little more than twenty years ago. And the wilderness-lover whose pleasure is but heightened by the difficulties of the journey will ever be grateful that Nature has put so arduous a barrier across the path.

Rainbow Bridge—The Discovery

The discovery of such marvels in out-of-the-way places is generally a matter of accident or curious circumstance. In this case the thrilling revelation is intimately intertwined with the life of that veteran pioneer, John Wetherill; to tell of one is to tell of the other. Long before any other white man had even heard of Rainbow Bridge, old John knew of its existence and jealously hugged the secret to his breast along with the hope that he might be the first white man to see it and make it known to the rest of the world. To a certain extent his dream came true: though he was not alone in his first sight of it, he led the expedition that discovered it, and was himself the first white man to pass under its arch.

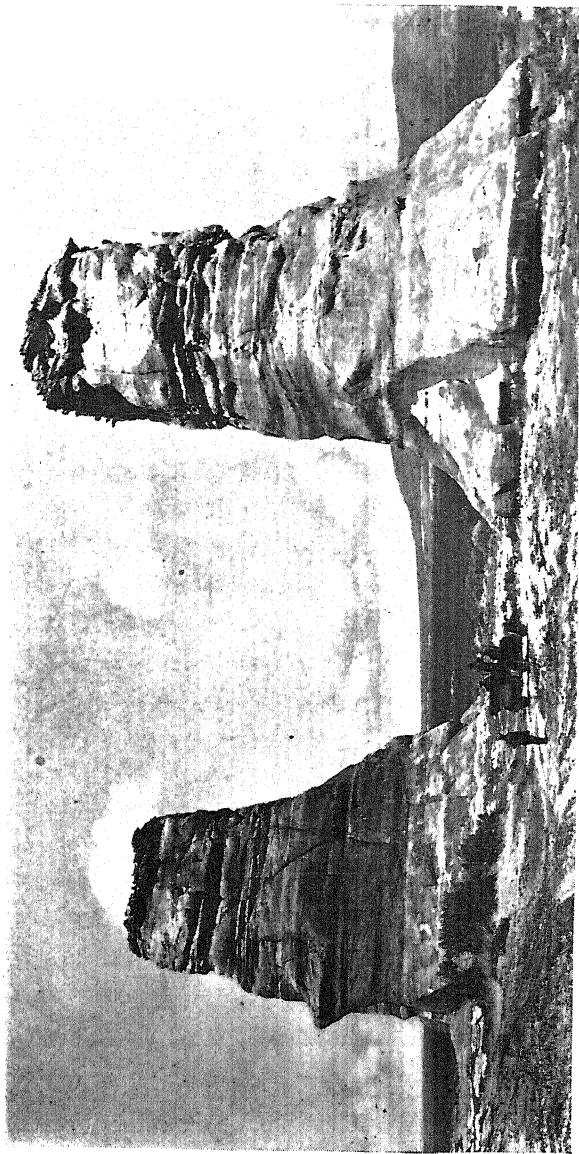
It is now nearly forty years since John Wetherill, a lean young plainsman of twenty-odd years, emigrated from Colorado with his young wife and his brother and, trekking across the Painted Desert, founded the little settlement of Kayenta, Arizona, on what is today the Navajo Indian Reservation. Here for many years he has conducted a trading-post. In those times the Indian resented the coming of the white man, and the Navajos made their resentment clear in this case by murdering Wetherill's brother. But young John and his wife were not to be daunted by the horrible act; without any attempt at reprisal they refused to be driven away. He told the Navajos that he was there to stay, and that his intentions were friendly. The latter was confirmed by what his wife did. Like all pioneer mothers of that day, Mrs. Wetherill had to serve both as nurse and as family doctor on many occasions, and she soon had a wide repu-

Trails Through the Golden West

tation among the Indians, which was enhanced by her rapid acquirement of the Navajo language and its various dialects. Wherever there was sickness, the healing services of the "Medicine Woman" were sought, with the result that eventually Mrs. Wetherill was formally adopted into the tribe, in which for many years now she has been the object of devoted veneration. Incidentally, the Indians learned that John Wetherill always spoke to them with "a straight tongue," even when the natives themselves deliberately took the opposite course.

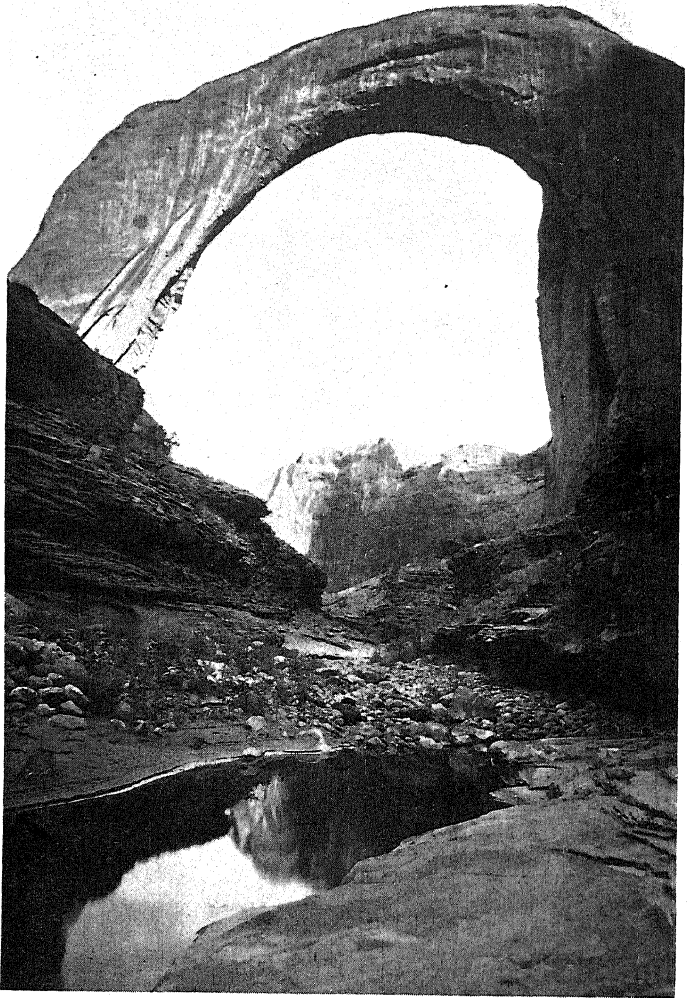
Complete confidence having been established between the Wetherills and the Navajos, one day early in the spring of 1907 Usen Bena Etten, a tribesman bearing the nickname of "Sharkie," the survival of whose squaw and new-born papoose was due to the ministrations of Mrs. Wetherill, took John for a long walk away from the village into the desert, where he unfolded to him a deep secret. It was all about a wonderful bridge of red rock, shaped like a rainbow, hidden in a deep canyon, away off in the country to the northwest, where the tribal gods of the Navajos had dwelt for countless generations. It had never been seen by a white man, and by only a few Indians, who had stumbled on it inadvertently—and got away as quickly as possible because it was a very holy spot.

He told John of an altar that had been built beneath the great arch by the Navajos' ancestors, which was so ancient as to be beyond the memory of the oldest men; the medicine men of earlier days had made pilgrimages to this place and offered prayers to the Great Spirit on



Atchison, Topeka and Santa Fé Ry.

On the road to Rainbow Natural Bridge the motorist passes between these two huge rocks which, for obvious reasons, have been called "The Elephant's Feet."



The Rainbow Natural Bridge, with a span of 274 feet—almost equal to a city block—has the biggest natural arch in the world. It is composed solely of naked red sandstone of various shades.

Rainbow Bridge—The Discovery

behalf of the tribe. Then he took a twig, bent it in the form of an arch, and, sticking the ends in the ground, made a sweeping gesture with his arm to indicate its immensity. No—he had never been there himself and he wasn't supposed to know or to have ever heard anything about it. That would come later on, when he should be old enough to take his place among the wise ones of the tribe and possibly make a pilgrimage.

Yes—there was a trail to the holy place, but it was hidden and the way was dangerous to those whose approach was other than reverent. The anger of the Great Spirit was something that no Navajo would dare invite. Sharkie had noted Wetherill's interest in excavation and in the discovery of prehistoric occupation, so he wanted his great and good friend to know about the "Rainbow-turned-to-stone." That was as far as the matter went at this time.

But Wetherill, sensing a find, brought all his persuasiveness to bear on Sharkie, begging to be taken to the spot; but Sharkie was not to be moved—his superstition held fast. He would take no chance of angering the gods by such profanation, even if he should be able to find the way, which was far from certain. Months passed, during which Wetherill persisted in the pressure with the hope of breaking down Sharkie's fears. Meantime he had to keep Sharkie's secret; he did not dare to seek a guide from among the other tribesmen—he couldn't even hint that he had even heard of the great arch. He had simply to possess his soul in patience, hoping that the time might come when Sharkie's fears would yield to reason.

Trails Through the Golden West

Plans were laid to make the attempt in the autumn of the next year, 1908. But the sudden death of Sharkie in the summer of 1907 defeated these. Before he died, however, he confided to Wetherill that a friendly Paiute, Nasjah Begay by name, knew the trail to the Bridge and had promised to carry out his (Sharkie's) intention. Wetherill, who knew Nasjah Begay personally and feared another set-back, urged a prompt start. It appeared that Nasjah, being a Paiute, did not share the superstition with which the Navajos regarded the great arch. He was full of alarm, however, lest his Navajo friends resent his activities with their old friend the trader Wetherill.

Accordingly they planned a trip for the following fall, ostensibly to Flagstaff for winter supplies. Wetherill in the meantime had cached a horse and two saddles in Segi Canyon, on the trail to Flagstaff. This enabled them to start light with only a team of horses and a truck-wagon, thus avoiding the least suspicion of the real object of the trip. When they reached the cache, they concealed the wagon and the harness and, saddling two horses, packed the third with their limited supplies—entirely too limited, in fact, for an expedition involving so much uncertainty—and embarked on their eventful quest.

About two-thirds of the distance into the Bridge canyon Nasjah Begay lost the trail, and then spent a week in a vain endeavor to recover it. Meanwhile the pack-horse had slipped over a cliff and was badly injured, and they had a hard job recovering the remainder of the supplies, including horse-feed. Nobody who has

Rainbow Bridge—The Discovery

not ridden through that tremendous hinterland can imagine its sinister character. The whole country, as far as the eye can see, is gridironed with canyons from 500 to 2000 feet in depth, unscalable except in a few places and then a dangerous job for even a venturesome and seasoned explorer like Wetherill. There being absolutely no forage and no water in that section, their situation was indeed desperate. Nasjah Begay was terror-stricken, convinced that they would never get home alive. As for Wetherill, he was dismayed by the tragic outcome of their venture, but he realized that there was nothing to do but turn back. They had been gone for nearly a month and by the time they reached home both the men and the horses were completely played out.

Although it was to be long before Nasjah Begay recovered his accustomed stoicism, John's appetite for the venture was but whetted by the first failure. In October, 1908, after months of silence, he again broached the subject to Nasjah, but with no success—Nasjah had had his fill. To Wetherill's delight, however, Nasjah knew a brother Paiute who claimed to have made the trip to the great bridge and who he thought might undertake the job.

It appears that this Paiute, "Mike's Boy" by name, familiarly known as Jim, was working at the time as flagman for William B. Douglass, Examiner of Surveys for the General Land Office in Washington, then engaged in surveying the three great natural bridges in White Canyon. Nasjah Begay disappeared for a few days, and, returning, informed Wetherill that Jim had consented to guide him in to the Bridge the following December.

Trails Through the Golden West

The expedition was to start from the trading post at Oljeto, which Wetherill was conducting at the time. John realized that his secret was out, however, when word leaked through a few weeks later that Jim had changed his mind and was going to guide Mr. Douglass in to the Bridge. Incidentally, knowing the workings of the Indian mind, he became properly suspicious when Jim failed to put in an appearance at Oljeto the following December at the place where Douglass was waiting for him. The trip was abandoned and Douglass returned to White Canyon considerably chopfallen to find flagman Jim blandly waiting for him but minus any explanation as to why he had failed to show up at Oljeto. Wetherill had his own theory as to Jim's dereliction and was accordingly relieved that he had been spared the embarrassment of placing himself in Jim's hands.

A highly interesting situation developed the following year, 1909. The fame of Rainbow Bridge had spread far and wide throughout the Southwest but nobody knew where it was. Byron Cummings, Dean of the University of Arizona, who was excavating prehistoric ruins in the vicinity of Oljeto, wanted his old friend Wetherill to organize an expedition and go in search of it. John was more than willing but, having appealed in vain to Nasjah Begay, was at his wits' end. Hearing that Douglass had once more got Jim into line and was on his way to Oljeto, Wetherill, who knew both men, brought them together and induced them to combine their outfits. The party left Oljeto on August 10th.

They had been on the trail only a few hours, however, when Wetherill's suspicions were confirmed; it was

Rainbow Bridge—The Discovery

quite apparent to him that Jim the flagman didn't know where he was going. With considerable difficulty John convinced Douglass of the fact, and the outfit halted and made camp. John then retraced his steps to Oljeto and sought out Nasjah Begay once more, with a last heroic appeal to that reluctant Paiute who, it appeared, was more gratified by seeing Jim go ahead and make a fool of himself than he would have been by making a bit of money.

It developed that Nasjah had been in to the Bridge as recently as June of that year, but had kept this to himself. His fears as to the possible resentment of his Navajo brethren had dwindled to reasonable apprehensions about horses and supplies, and about the chances of so large an expedition's getting in to the Bridge, and if it did—of getting back again. These doubts having been cleared, Nasjah Begay returned to the desert camp with John Wetherill and the expedition resumed the trail, arriving at the great arch without any mishap at 11 o'clock in the forenoon of August 14th, 1909. It is worthy of note that, while John was the outfitter of the Dean Cummings party, with the arrival of Nasjah Begay he assumed complete charge of the expedition and was responsible for its safe conduct there and back.

No one in that party but Wetherill was qualified to discover Paiute Jim's unfitness for the job for which Mr. Douglass had hired him, and but for his altruistic interference the expedition would have fizzled out as the previous one had. That, however, did not deter Mr. Douglass, in his official report to the Commissioner of

Trails Through the Golden West

the General Land Office, in Washington, in May, 1910, from ascribing to Jim the credit for finding the trail to the Bridge which, as a matter of fact, belonged to Nasjah Begay who, as has already been stated, was Wetherill's man. And it is owing entirely to Wetherill that Nasjah eventually received the credit which was his due, as may be seen today by the pilgrim on his arrival at the great arch.

Countersunk in the rocky base of that magnificent flying buttress that spans the prehistoric stream-bed will be found a massive bronze memorial, appropriately inscribed and showing (in half life-size) Nasjah Begay astride his Indian cayuse, guiding his party to Non-ne-zo-she Na-gee-lid on August 14, 1909. This bronze was the gift of Raymond Armsby of Burlingame, California, and—despite its four-hundred-pound weight—was brought by pack-train over the difficult trail from Kayenta. Here, set up as a memorial to historical truth, it may be seen by every visitor to the bridge as long as the trail shall last.

Such was John Wetherill's characteristic method of seeing to it that the right man should receive due credit for an imperishable deed, whose ultimate result was the setting aside of Rainbow Bridge for all time as one of the most mysterious and impressive of our National Monuments in the West.

To show just how John's dream came true I can do no better than to quote a reminiscent passage from a letter he wrote to me some years ago, a passage that betrays unconsciously both his charming naivete and the fundamental principles that guide him:

Rainbow Bridge—The Discovery

“On the morning of August 14th [he says] we broke our last camp in the Bald Rocks Canyon and lined out for the Bridge. Dean Cummings, Douglass, and myself pushed ahead with Nasjah Begay in the lead. As we came to the bend of the canyon about three-quarters of a mile above the Bridge, Nasjah Begay said we would see it shortly. Douglass was next to the guide, his eye fixed on a branch canyon that led off to the right. Cummings was riding behind Douglass and I was behind him. I noted that he was keeping watch to the left, from which direction the arch is first seen. He saw it first and rode up beside Douglass and pointed it out to him.

“Douglass didn’t seem to appreciate Cummings’ interest. I told the dean that I would put him in ahead of Douglass if he wished, but he said he didn’t want to appear rude. I thought it was just about up to someone to ‘appear rude’ so I took it upon myself to ride ahead of Douglass. I was the first white man to pass under the bridge and was followed by Messrs. Douglass and Cummings in the order named. But Dean Cummings was the first white man to set eyes on it. There was plenty of glory to go round, and I have always been content with my little part. The real credit belongs to the Paiute Nasjah Begay, without whose knowledge of the trail the Bridge would probably not have been discovered for some years to come.”

Thus John Wetherill was virtually the discoverer of Rainbow Bridge, and by all the rules of the game he should have reaped the glory. That the only mention of him found in Mr. Douglass’s official report is as “a packer” in the employ of Dean Byron Cummings speaks for itself. Like the unselfish pioneer that he is, old John pocketed his disappointment and proceeded to clean

Trails Through the Golden West

up and improve the trail in to Rainbow Bridge, which but for him would have remained hazardous and which will be an enduring monument to his public-spiritedness long after he has "passed over the range."

But this is not all that John Wetherill did: he conceived also the idea of constructing a trail in to the Bridge around the base of Navajo Mountain, thus opening up a vast area of wonderful country that would otherwise be inaccessible, and transforming a one-way journey into a round trip of amazing variety. This required time and money, however, and the old adventurer had neither. But his indefatigable energy and the likableness that persuades men are witnessed by the fact that the wherewithal was provided by Charles L. Bernheimer of New York, who for years has spent his holidays with Wetherill in the Rainbow Bridge country. One glorious holiday he devoted to blasting his way with dynamite—in Wetherill's company—through the canyons radiating from the base of Navajo Mountain and in to the Bridge. That trail of theirs is the last word in wonder; it might indeed be called the achievement of the impossible; and as an appropriate introduction to Non-ne-zo-she itself, it is worthy of any superlative you choose to apply to it.

Rainbow Bridge—The Country

MILLIONS of years ago, so the geologists tell us, there was a sudden cooling-off process beneath the surface of this great territory in Arizona and Utah—an area comprising some 100,000 square miles—and the surface caved in, ten thousand feet deep, and the sea rushed in. A few million years later the reverse took place: the earth's crust was forced upward slowly, and the great inland sea was emptied into what is now the Pacific Ocean. It left behind it a tremendous deposit of silt, which eventually hardened into rock. Some geologists believe further that the Rainbow Bridge country was subsequently covered with lava and that it was this lava, with its greater resistance to the action of water than the exposed sandstone of the Grand Canyon terrain (of which it is a part), that left practically undisturbed those countless roundheaded buttes which remained while the Colorado River was cutting its way to the sea. However that may be, it is true that the scenery and surface conditions in the vicinity of Rainbow Bridge are totally different from those in the Grand Canyon.

Trails Through the Golden West

In the midst of a vast expanse of red, pink, and brown desert that is slashed by innumerable canyons through which age-long floods have worn their way to the Colorado River, is Navajo Mountain. Its geographical position is on the boundary line between Utah and Arizona, a six-hour motor ride of 185 miles over the Painted Desert from either Flagstaff or Grand Canyon Station on the Santa Fé Railroad. Rising 10,500 feet above sea-level it constitutes the landmark toward which all trails lead. In formation it is nothing less than a huge upthrust of limestone from the bowels of the earth in the center of an ocean of pink sandstone. It is covered—remarkably enough—with both deciduous trees and flourishing pines, and blessed with a never-failing spring of the purest water. And on its slopes may be seen another reason for the superstitious attitude of the Indians—numerous ancient cliff-dwellings, which are believed to be haunted by the spirits of their former occupants.

The possibility of travel by either pack-train or motor-car in the Arizona desert depends almost wholly on water. Any party of travelers that ventures into that arid waste without knowing the location of the few springs and water-holes is simply asking for trouble. I was fortunate in having John Wetherill in command when the quartet of which I was a member motored across the Painted Desert a few years ago. The trip included a three-day trek by pack-train over the precipitous and uncertain trails of Segi, Paiute, and Nokai canyons, halting on the southern slopes of Navajo Mountain. The four of us were as different as could be imagined, in temperament, in experience, and in occupation, but for

Rainbow Bridge—The Country

nearly fifteen years we had trailed together into the wilderness without ever having had a serious disagreement. This is worth emphasis, because if there is any place on earth where a man's real character comes out—especially if he has a yellow streak—it is the sort of wild, out-of-the-way place typified by this desert region. Camping on such trails is not only revelatory of hidden traits—it is rigid discipline for weaknesses. Self-consciousness, for instance, or petty jealousies; if you have to confess to either of these, just go out into the wilderness, make friends with a pack-horse, lie down under the open sky with your dog at your side, and take in what the desert has to say to you. Cut some wood for the cook, or keep his water-pail full. Whatever you feel like doing, or have to do on a desert camping trip will be good for your soul.

I have mentioned the cliff-dwellings on the southern (or desert) slopes of Navajo Mountain, which make the trail on this side doubly interesting. When your eyes fall on these for the first time you find it hard to believe that you are looking at places where men lived, in considerable numbers, some three thousand years ago. One spot in particular will attract your attention—an eye-shaped hole-in-the-wall about five hundred feet above the floor of the canyon. Train your glasses on it and you will see the laid-up stonework of the ancient dwellings back in the shadows, protected by the overhanging cliff. But you will hunt in vain today for the footpath that must once have led up the precipitous mountain-side, and you wonder whether at the time when these dwellings were tenanted they really were so high up, or

Trails Through the Golden West

whether during the march of the centuries since then the gorge itself has been hewn out deeper by the elements.

Three hours' climb in the blinding sunlight brought our pack-train to the grateful and cooling shade of a grove of towering pines, where the tired cayuses were speedily unpacked and horse and man made a rush for the ice-cold waters of "War-god" spring. The afternoon passed in delicious languor. As evening approached, the sleeping-bags were brought out. No need for tents in Arizona in the summer and fall; or for lights, either, beyond the friendly flame of the campfire, around which we all gathered with our pipes after an early meal. A hundred yards from the camp there was a massive, overhanging cliff with a flat top projecting from the mountain-side—a spacious pulpit, as it were, overlooking the limitless amphitheater of sage-covered desert 2000 feet below. The moon, nearly in the full, was rising over the summit of the mountain at our backs, shedding its soft light over the scene before day had begun to fade. In the opposite direction the sun was just touching the crest of the Vermilion Peaks at whose base the turbulent and silt-laden Colorado roars its way to the ocean. We left the campfire under the pines in order to watch the inexpressible glories of a desert sunset, and took our seats on that lofty rostrum with the silence and circumspection that are seldom violated by the wilderness-lover.

For a few moments the sage-bespangled immensity of sand blazed with a golden glory, which gave way to an all-pervasive mantle of the most brilliant hues of lavender and mauve, shot through at the zenith with

Rainbow Bridge—The Country

darting tongues of fire as the flaming orb dropped like a plummet behind the range, leaving above it a vast fan-shaped aureole of upward-shooting colors: old rose, beaten gold, amber, and crimson slashes—and afterwards the most exquisite alpenglow imaginable.

As we watched this amazing display it seemed to us that we could see the shadows below, closing in from the south, the west, and the east, as well as from above—a peculiar sight that was made the more uncanny by the wailing of the night wind of the desert, which seemed to be forcing the last rays of light back through a vast proscenium arch into outer darkness. “What is it?” one of us asked, turning to Wetherill. “It’s a sand-storm,” he replied, “and we are mighty lucky to be up here under the protection of the trees instead of down there where we would be compelled to bury our heads in our blankets for the rest of the night.”

The wind moaned through the tree-tops all night long, but this was a murmuring lullaby compared with the fiendish blast that was piling up sand dunes on the desert stretches around the base of the mountain. How lucky we had been was indicated by the thin coating of sand which we found on our sleeping-bags on awaking next morning. Our elevation of 2000 feet and the protection of the friendly pine trees had served us well indeed.

If your party is overtaken by a sand-storm on the desert, there is but one thing to do: unpack the horses, build a corral out of the camp-equipment, sit down in the lee of it and pull your blanket over your head. You may as well resign yourself to a disagreeable and uncom-

Trails Through the Golden West

fortable experience. You are going to have a visitation of sand in every square inch of your clothing, in your hair, your ears, your eyes, and your nose—not to mention the fact that you cannot indulge in conversation without getting sand in your mouth. The horses may be depended upon not to leave camp. They turn their tails to the wind and stand, heads down, dejected and forlorn-looking. Their only comfort is the knowledge that they are with human friends who are up against the same trouble.

“There’s a worth-while view off to the north, from the summit of the mountain,” said John Wetherill the next morning. “Very few travelers take the trouble to go up there because it’s rough going and the thing to do is to camp over night. There’s no use in trying it until this sandstorm settles down because that generally blots out the whole face of Nature. It is lessening now and will probably pass before the day is over. We could travel all right, as it is, but we couldn’t locate anything, either high or low, in the way of scenery. Shall we stay up here another day and spend the night at the summit, or shall we go on? It’s up to you.” I have never ceased to be thankful that we elected to stay.

Navajo Mountain is peculiar; on the south it abuts on the sagebrush desert, and only on this side can it be negotiated by pack-train; for the approaches from east, west, and north are guarded by a series of steep and practically inaccessible canyons a thousand to fifteen hundred feet deep. These gorges abound in quicksand and radiate from the base of the mountain, like the spokes of a wheel, to the Colorado River fifteen miles

Rainbow Bridge—The Country

distant. Ascending the rough trail from the camp at War-god spring, the unsuspecting wayfarer, in the wildest flight of imagination, would never dream of the stupendous scene that awaits him at the summit.

Twenty-five hundred feet below, as far as the eye can reach—north, east, and west—lies a rolling plateau of bright pink sandstone, shimmering in the merciless rays of an Arizona sun beating down from a barbaric blue sky. But what are those black streaks crisscrossing the pigmented void, as if a Titan had scratched the vast expanse with a colossal pen? You raise your binoculars, and what you took for a plateau resolves itself into myriad round-topped mountains that resemble the restless surge of a pink sea. Another look—and the black streaks are seen to be canyons.

Over there towards the east, you see where the San Juan River has cut a monstrous gulch through the rock-bound desert and joined her untamed sister, the Colorado, on the way to the sea. Further on may be dimly espied the Escalante and Henry mountain ranges, and in between, an interminable labyrinth of gorges having neither beginning nor end. It is a world turned topsy-turvy, an epic of cosmic disorder waiting to be straightened out.

One remarkable feature of this country is that, though it is part of the same area of erosion that includes the Grand Canyon of the Colorado, and though it lies a bare one hundred miles east of that tremendous gorge, there is little or no resemblance between the two beyond the fact that the Colorado has worn its way through both formations in precisely the same

Trails Through the Golden West

fashion. Those who have visited the Grand Canyon will recall the fantastic and jagged results of erosion seen in the towering mountain peaks which rise six thousand feet from the canyon's depths. There, the river has cut its way a mile deep into the surface of the earth and laid bare a cross-section 250 miles long by 12 wide, extending from the red sandstone at the top, down through the limestone, into the Archean granite at the bottom—the most ancient geological formation known, antedating all animal life and going back into the misty past when this old earth was in the making.

But here in the Rainbow Bridge terrain everything—mountains, buttes, cliffs, canyons—is worn smooth. There are fearsome precipices and terrific heights and depths, but they all look as if they had been sand-papered, stained, and finished by some mighty craftsman. It is this feature that has led to the belief that at one time this whole vicinity must have been lava-covered, and that thus the soft sandstone was protected from the action of the elements until it became sufficiently hardened to resist the erosion that is so marked in the Grand Canyon. And this, notwithstanding that there are no evidences of volcanic action in this portion of Arizona and Utah.

Rainbow Bridge—The Reality

NEXT morning bright and early we were on our way with canteens filled from the limpid waters of War-god spring, and with twelve miles of rough trails and three canyons to negotiate before we could reach our destination. Wetherill had arranged to have us camp one night on the trail so that we might reach the bridge in the late afternoon. An artist at heart, the old pioneer had timed our approach to the great arch for the hour when the shadows would be lengthening. There need be no haste, and he particularly wished that we should not be overtired or jaded from our ride when we should have our first view. Indeed, John Wetherill, in this matter, was like some ancient high priest of the temple, parting the veil of the Tabernacle in reverence; and it must be admitted that he imbued each of us—Nature-lovers already—with the same feeling toward his secret shrine.

The third and last canyon was the most difficult of all. To reach it we had made a final climb of some fifteen hundred feet—a stiff rise, every man out of the saddle, the weary horses struggling to make the grade. When

Trails Through the Golden West

we reached the summit we found it a fairly level divide of rubble about thirty-five feet square, overlooking our final descent into Bridge Canyon. There was just room to accommodate our twenty animals if they stood still. Exposed to the broiling sun we had found it a grueling experience, and the whole outfit was about ready to throw up its hands when John—whose khaki shirt was soaked with perspiration—remarked casually: "Well, boys, this is the Saddle. We'll stop here long enough to take a bite and let the cayuses get their wind."

We looked at each other blankly. "Stop here?" asked one. "Why, if one of those horses should turn his head he'd fall over the cliff!"

John looked up with his quiet smile. "They all know enough to stand still after a pull like that, and we'll all feel better for a bit of grub and a breathing-spell."

So we all stood and looked off into infinite space, munching sandwiches and getting back our wind.

It was fifteen hundred feet down to the floor of the canyon from which we had just emerged, and five hundred more than that down into the canyon where lay the object of our strenuous pilgrimage, with an equally stiff grade. But there's a difference between going up and going down, somewhat in favor of the latter.

We came upon the tremendous arch late in the afternoon, just as the westering sun was poised over the massive pink mountain range that flanks it. Our saddle-horses had been sent on ahead with the pack-train over the trail on a rocky ledge a hundred and fifty feet above the bottom of the gorge, while we finished on foot the last few hundred yards of the day's journey, following

Rainbow Bridge—The Reality

the serpentine, trickling stream that empties into the Colorado River six miles farther on. There it stood in its towering majesty: a "rainbow turned to stone" in very truth.

Never in all my life have I seen anything so superb, so overwhelming. Mere words could not describe it then—they cannot now. As this supernal beauty burst on my sight, the resounding call of the Psalmist passed through my thoughts:

Lift up your heads, O ye gates, and be ye lift up, ye everlasting doors!

And color! Color! A dozen shades of red, pink, brown, yellow, and mauve blending into each other, with an exquisite rosiness of hue so inexpressibly soft and tender as to exert a tremendous emotional appeal. It was suggestive of the skin of a beautiful woman. One wanted to smooth it, to lay his cheek against it. And it seemed to reach upward to the very arch of heaven itself. And such proportions! "Graceful as a bow just bent." An epic in sandstone!

With a perfection of symmetry it rises 310 feet from the depths of the gorge, which it spans with a width of 278 feet. The arch is thirty feet in diameter at the top and approximately fifty feet at the base on one side—the other being part of the mountainous cliff from which it springs. When you recall the Capitol at Washington and realize that there is room and to spare for it beneath that mighty span, you begin to form some idea of its height. And when you stop to think that

Trails Through the Golden West

the length of an ordinary city block averages 240 feet, it affords your imagination an additional basis for expansion. Nature has outdone herself in the gigantic scale upon which she has fashioned this masterpiece. Then think of the antiquity of this marvel and the almost unbelievable fact that there was a time when Non-ne-zo-she Na-gee-lid and the mountain peaks surrounding it were buried beneath the waves of a vast inland sea. In considering the glacier-like progress of erosion, one vainly tries to visualize the fact that the prehistoric rocky river-bed beneath, now dry, was at one time 150 feet higher than the present one and that the original stream that raged through that canyon centuries ago flowed around one end of that prodigious flying buttress before the inexorable combination of frost, wind, rain, sand and sun chiseled out the center and wrought such an amazing transformation. No wonder the ancient Indians invested it with supernatural powers and built an altar beneath it where they might propitiate their gods! No wonder that even to this day no Navajo will pass beneath the arch without uttering a prayer!

Climbing the cliff on the northerly side of the canyon, one may look down upon the Bridge, which looks dwarfed by the tremendous proportions of its surroundings. From those measureless upper reaches, one sees where the ancient river has eaten its way into the sandstone cliffs on either side, leaving a series of yawning caves as a memorial of its swirling force.

It was the close of a day to be remembered for a lifetime as we sat around the campfire that night

Rainbow Bridge—The Reality

and watched the full moon rise over the crest of Navajo Mountain, shedding a soft radiance over the scene and etching the symmetrical outlines of the majestic arch against the deep, velvety blue of an Arizona sky.

No visitor to this wonder-spot should fail to take the six-mile walk down the Bridge Canyon to its junction with the Colorado. Here is a gorge about 1000 feet deep, a mere slit in the rock, so narrow in places that one can almost touch both sides of it with outstretched arms. Usually it is dark and gloomy, the sunlight coming in only when the sun is immediately overhead. The stream had dwindled to a mere trickle, but high above our heads was a significant water-mark; indicating at one time a cloudburst had caused the Colorado River to rise suddenly, and the waters had simultaneously inundated the gorges on the slopes of Navajo Mountain. It was uncanny to realize that we might have been caught by such a flood like rats in a trap, and we were not a little relieved when we returned to the friendly shadow of the massive arch.

The interesting cliff-dwellings found in this region make it a happy hunting-ground for the archeologist. During the last few years John Wetherill in his wanderings has come upon scores of them. Three of the dwellings are exceptionally fine, and in an excellent state of preservation—"Inscription House," "Betatakin," and "Keet Seel"—all of them on the line of approach from Kayenta to the Bridge, and all worth visiting. The most remarkable is Betatakin, situated in an immense natural cave in the mountain-side, 600 feet high, 500 feet wide, and 300 feet deep. It is so well preserved that it looks

Trails Through the Golden West

as though it had been tenanted quite recently. Three thousand years ago this "city" must have contained—according to one estimate—no fewer than fifteen hundred persons. The first tier of houses, some hundred and fifty feet above the valley, is reached by a steep pathway only wide enough for one person. Inside the cave, the presence of two unfailing springs suggests one reason why the place was chosen by its prehistoric inhabitants; a water supply that could be counted on, together with the character of the approach from the valley, made it an excellent refuge easily defended against the attacks of hostile tribes.

That our journey homeward was uneventful does not mean that it was tame. No ride that follows the cliff trails in this region can be anything but nerve-testing. They are not necessarily dangerous, for they generally trace the dry courses of prehistoric mountain torrents and are well looked after; still, they are not to be undertaken lightly. You will find comfort in the realization that your trail horse is just as much concerned for his safety as you are for yours. Just give him his head—he won't take any chances of losing it.

On this return trail the high points of interest are Monument Valley and the Bald Rocks. The first is notable for its deeply eroded and fantastically carved masses of sedimentary rock, resembling feudal castles, 700 to 1000 feet high above the floor of the desert, which, it will be remembered, was once the bottom of an inland sea with an estimated depth of ten thousand feet. Like the rest of the country, these immense rock masses are clothed in all the colors of the spectrum and

Rainbow Bridge—The ~~Beauty~~

glow with a weird brilliance in the ~~morning~~ sunlight characteristic of Arizona. The ~~Painted~~ rocks are a series of diminutive mountains consisting of comparatively smooth pink rock, in ~~places~~ the whorls of silt as they settled through the ~~water~~ are clearly marked and varicolored. There ~~is~~ no way out except over their rounded summits. It is a perfectly safe proceeding and the footing is fine for both horse and rider; you'll be quite content to walk.

This journey ~~that~~ I have been describing is one of the few left in the Southwest that it will never be possible to make by railway or motor-car—for which we may be grateful. But an automobile will take you within thirteen miles of Rainbow Bridge, to a place where there is a comfortable lodge, in which you may stay as long as you want. But even if you can make only a short visit, it is worth the day's ride across the mysterious Painted Desert from Winslow or Flagstaff, and the climb up the trail to the summit, if only to get the view from there. I think you will agree with me that there is nothing else like it in the world. But if you do take the trail, you will appreciate the co-operation of a sure-footed mule and a Mexican stock-saddle, ~~whether~~ you start from John Wetherill's little principality, Kayenta, or two days' ride from spectacular Navajo Mountain.

For information about details of the round trip, write to my old friend John Wetherill at Kayenta P. O., Arizona—he is the postmaster there. You will find that you can get a lot out of the country of Rainbow Bridge and the Grand Canyon in a thirty-day trip from New

Trails Through the Golden West

York and back. And you will like Wetherill—he is a real man, and as the Navajos said years ago (and Roosevelt confirmed later) he speaks with “a straight tongue.” Finally, he is about the last of the Arizona pioneers, and he won’t be here very much longer. When he’s gone, the Arizona desert won’t be quite the same.

The Grand Canyon of the Colorado

WHEN enthusiastic travelers compare notes on the sights that have impressed them most in various parts of the world, they are likely to find themselves at a loss for adjectives that they can trust to convey their feelings adequately. So many places defy their vocabularies to produce the exact word, and so many of the words that naturally come to mind have been misused until they no longer mean anything. But everybody who sees the Grand Canyon of the Colorado agrees that in this instance the adjective is precisely right. What is more, when we come face to face with such immensity—an immensity that is actually shocking—we are likely to feel that if “grand” is the right term here, then it ought never to be applied to anything else among the natural wonders of the world. For it must henceforth mean to us something that is unique, indescribable in its majesty, its terrible beauty, its power to strike awe to the soul.

He who has not seen the Grand Canyon may ask how it is possible for a thing to be lovely and at the same time terrible. For his answer he must go and see it. Then

Trails Through the Golden West

he will know. The Canyon is like an ancient oracle: it replies to your questions, but the interpretation of its replies rests with you—it depends on what kind of person you are. I do not mean literally, of course, that you will do any “asking” as you stand and look out over this tremendous spectacle; indeed, you are far more likely to be struck speechless, overcome by such emotions as you never felt before. What you see is so utterly unexpected. You may have been all over the world and have looked on hundreds of natural marvels; you may have been told about the Canyon, or read about it, or seen pictures of it. You may have vivid imagination that has created for you what you think must be a pretty adequate vision of what the Grand Canyon really looks like. No matter. None of this is any good, as you will discover when you get there. Whatever your anticipations, the reality will dwarf them.)

There is nothing especially interesting or remarkable about the last few miles of the approach to the Canyon. When your train reaches the southern verge there is a sharp drop of a hundred feet or so back to the level of the plain over which you have been speeding since daylight. While you were asleep the car in which you have been riding ever since you left Chicago was shunted off the Santa Fé main line to a side track at Williams, Arizona—that once wild-and-woolly cowtown—with fifty miles left to go before reaching the Grand Canyon. As you look out of the car-window over that wide expanse of sagebrush desert on the left-hand side of the train, you will hardly realize that, hidden completely by the steep grade and by the mag-

The Grand Canyon of the Colorado

nificent conifers of Coconino Forest, there lies one of the wonders of the world. And when the train comes to a stop at the hotel, things still seem rather commonplace. You alight at the back door of El Tovar and walk up several flights of stairs to the lobby. It is just breakfast time. You are looking forward to a nice table at a window from which you can see the Grand Canyon. Your first set-back arrives when you learn that the dining-room overlooks the desert, not the gorge. However, after breakfast will do. You finish your meal, light a cigar, and complacently stroll out on the plaza to see what may be seen. Near the parapet there are some seats; you take one, and proceed to look.

And look. And look. Presently you note subconsciously that your cigar has gone out, or fallen from your fingers—something; anyhow, you haven't the mind—now—to get it going again. For mind and heart and body are tense with incredulous astonishment. All your attention is needed to assure you that what you are looking at is real.

(Stretching before your eyes for miles and miles is a flame-tinted void.) Your eyes are blurred, and when you rub them they descry something far down in the depths, away off to the left—a silver thread glinting in the sun's rays. Yes—that's the Colorado River, and it lies a trifle more than one mile below the spot where you are sitting. Directly opposite and etched against the startling blue of the Arizona sky are the cliffs that form the northern rim of the Canyon. They look all of five or six miles away. They are twelve miles away. Just in front of you is a crimson cliff—now, *that* is close;

Trails Through the Golden West

you could toss a pebble and hit it. You toss the pebble—it falls at your feet, and somebody nearby informs you that the cliff is more than a hundred yards from your seat.

It is all very upsetting, however large your preconceptions have been. You begin to understand why the hotel people did not put the dining-room on the Canyon side of the building. The sunlight is a little hard on your eyes, so you go in and get your dark glasses and come out again and look. Just sit there and look. If anybody speaks to you he goes unanswered. Either you don't hear him, or else you can't bear the sound of a human voice. At this moment, the biggest fact in the world to you is silence, imponderable but overwhelming silence. Not even a bird-note is to be heard. After a while it begins to dawn on you that people were right when they confessed that they could not describe the Grand Canyon. You won't be able to, yourself, now that you have seen it.

A hotel attendant comes along and asks whether you want to take a motor ride along the rim. Tell him no—not today, anyway. You have got to give your senses and your nerves a chance to get used to this miracle. It would be a little too much for your self-control to have to listen to some Hermione call the Canyon "swell," and certainly you would strangle that idiot who has just sauntered out from the breakfast table, toothpick in mouth, and who would be sure to tell the world that the Canyon was "some ditch, believe me." Moreover, you do not have to take a motor-car; some of the spots that are best worth seeing can be reached only on foot.

The Grand Canyon of the Colorado

The motor cannot approach them; the lazy will not. Find one of these, and you will be safe from the crowd.

At some of these places you can sit down and let your feet hang over—if you have nerve enough to go right to the brink of that precipice; and when you drop a pebble down from the side of your knee it will fall twenty-five hundred feet without touching anything. You wonder how on earth anybody ever manages to get down to the bottom of that pit—alive. But it appears that other people have done it, quite a lot of them; so you can decide that you will try it.

The painter of the Canyon is the sun, and his “brushes of comet’s hair” are in use every hour of the day. Since every picture that he and the clouds paint is different, we might change the figure of speech to the kaleidoscope. The atmosphere, too, is a potent factor in this amazing play of light and shadow and color. Some of it you will be able to catch with your camera. Indeed, if you are a camera enthusiast you will have the time of your life here. But you must confine your efforts to early morning and late afternoon, avoiding midday, especially for taking pictures along the rim—when the sun is overhead everything flattens out, photographically speaking.

But you must take your camera work seriously if you want good results. A good many amateurs have been heartbroken because their cameras have served them well everywhere else during their summer holiday, only to betray them when they reached the Grand Canyon. They have not learned that in Arizona the danger lies in under-exposure, and that the safest rule is to take

Trails Through the Golden West

time-exposures. Brilliant sunlight does not always imply a clear atmosphere. If you haven't the patience for time-exposures and prefer instantaneous work, then set your camera at not more than 25, or even 20, in point of time. Under normal conditions the difference between 25 and 50 is so infinitesimal that you would have difficulty in determining which was which in the appearance of either negative or print. But where you encounter red rays in the sunlight, as is so frequently the case in desert country, you'll find that 25 in time and 8 in the diaphragm will prove the salvation of many a good shot that would otherwise be lost to you. This advice is not meant for the "sharks"; it is intended for folk like me who never could find the time to take their photography seriously until driven to it by tragic losses.

Again, choose your subjects with care. There is such an embarrassment of scenic riches here that a little selection on your part will yield great rewards. This is, too, another argument for your wandering off by yourself instead of following the crowd, most of whose photographic longings are satisfied by an Indian who looks as if he had been intercepted on his way to a masquerade ball, compelled to mount into the saddle, shade his eyes with his hand, and point dramatically across the Canyon. Either that or the cowboy who has ascertained that the Open Sesame to popularity with a certain brand of tourist is to pose nonchalantly with cigarette, sombrero, snaky silk handkerchief, and chaps beside his faithful bronc, just returned from "night-herding" and ready to brave the dangers of a descent into the Can-

The Grand Canyon of the Colorado

yon. Under pressure he will admit that it's a great life if you don't weaken. But you will learn to take that cowboy a lot more seriously when you see him start down the trail to the river with a string of horses on which are mounted a heterogeneous lot of men and women and young folk, all of whom are going to be perfectly safe under his guidance.

The sun is setting. Scarlet flames creep up the sides of the Canyon walls in one direction; in another the deep shadows are apparently dropping down, down, down into bottomless depths. Where a few moments ago the river was winding its silvery and tortuous way there is now only a purple path between towering walls, shot through here and there with an errant gleam that has escaped through a cranny in those erosion-bitten peaks in the gorge. Faraway ranges light up, one by one, with an unearthly luminosity as the foreground becomes less and less distinct and the middle distance is suddenly metamorphosed from a blazing inferno into sharply silhouetted, ragged ramparts of innumerable peaks fringed with fire. Overhead the sky is banked with fleecy, billowing clouds. It seems hardly possible that a mere human being could behold such ineffable glory and live to tell the tale. An awful solemnity pervades the place, and a silence that is almost palpable.

(At home, the coming of night is just nightfall. In the Grand Canyon it is a miracle.



Down the Canyon Trail

TO VISIT the Grand Canyon and not take the horseback ride down to the river would be to leave the cream of your experience untasted. You have looked at the gorge from the rim, but how much can you take in, from that point of view, of a canyon nearly three hundred miles long, twelve miles wide, and a mile deep? You do not realize, as you stand there, that your feet are on a level with the tops of mountain peaks 6000 to 7000 feet high. For the time being, the world you live in is an inverted world: instead of arriving normally at the foot of a mountain, which you may or may not climb, but whose summit eludes your eye when you stand at the base, you are here reversing the whole process. By equally natural stages you have arrived at a height from which you look down upon scores of peaks below. It is a bewildering, a paralyzing, sensation, especially when you realize that nowhere else on earth could you invert normal experience in quite the same way. What actually lies down there at the bottom you can find out only by going down to see; only so can you make the acquaintance of that unique display of the forces of Nature.



Atchison, Topock and Santa Fé Ky.

In Arizona, nature provides an amazing variety of unusual spectacles. These mighty rocks in Monument Valley are the products of centuries of erosion.



This youngster is a member of one of the proudest and most prosperous Indian tribes of the Southwest—the Navajos.

Down the Canyon Trail

When you consider that more than 100,000 people visit this place annually and that the great majority make the descent to the river, you need have no fear. If you are inclined to be nervous the prospect may daunt you for a moment, but the chances are before you have proceeded a hundred yards on that six-mile jaunt down to the suspension bridge you'll be glad you made the start.

There is nothing in the way of trail-building to equal the splendid piece of work that the National Government has done here. Scarcely a spot in the whole magnificent trip could be described as risky if a person simply keeps his head and doesn't try to "drive" his horse or mule. No human could know that trail so well as the trusty four-footed beast that will carry you, and he's just as much interested in staying alive as you are. It may be that you will prefer to walk down. All right, but don't fool yourself that you can make your way back to the Canyon rim afoot on the same day. Quite a number of athletic folk have tried that little experiment and failed. You will be very thankful for a good horse under you for the return trip, whether that day or the next. In the midsummer the thermometer has a way of its own in the depths of the Canyon; you are now a mile nearer the center of the earth than normally. You will not mind the heat at all on horseback, but you won't want to walk very far.

There is a charming little caravanserai not far from the bridge on the far side of the river, known as Phantom Ranch. Here you may eat a good luncheon and spend the night if you wish, with the reward of a glori-

Trails Through the Golden West

ous sunrise in the depths of the Canyon; or you may return to the rim the same day. There is a highly interesting horseback ride up Bright Angel Canyon to the north rim—a diverting climb of 7000 feet; but it is infinitely more entrancing and less tiring to take the journey in the opposite direction.

By this time it is probably evident to you that I am trying to prolong your stay at Grand Canyon; I am. This is the one spot in our Southwest, more than any other, where a fleeting glimpse is simply an exasperation. Don't attempt to "do" the Canyon in a day or two. If your time is limited, cut out something else. Don't try to force the issue with this amazing High Altar of Nature's God; it is not fair to the Canyon and it is not fair to yourself.

As you descend the trail your nervousness will pass and you will begin to feel comfortable and at home in the saddle. You will let your eyes wander about a bit and you'll discover a variety of vistas more interesting than the line between your mule's ears. The comfortable gradients of the zigzag pathway will appeal to you. It will become apparent as you proceed that the Canyon is like a huge, extended letter V, with the sides broken into a tremendous terrace halfway down. Here you travel for three or four miles on a vast level rocky plain or mesa, which extends to the verge of the lower gorge.

With bated breath you approach that fearful brink and gaze down at the raging torrent 1500 to 2000 feet below, imprisoned between granite walls that are less than a hundred yards apart. But at that height you

Down the Canyon Trail

will not catch the faintest echo of the onrushing river, whose tumultuous roar, were you down there beside it would drown the sound of your voice. It is through such an experience—and only so—that you can begin to realize the appalling dimensions of the Grand Canyon. As your stunned consciousness tries to take in the beetling crags of the lower reaches, the vaulting minarets, the high flame-colored cliffs, and the filmy lace-work of the parti-colored and eroded rock, you wonder how people can content themselves year after year with holidays at smart resorts, or even with trips to Europe, when such marvelous natural wonders as these are accessible.

When you reach the middle of the suspension bridge your view is unobstructed, and the first thing that will catch your attention is a high-water mark on the chocolate-colored granite walls, about thirty feet above the level of the river. A little below this, where the stream curves to the left, you may see a huge sandbar, several acres in extent, covered with great boulders five to ten feet in diameter. These will give you an idea of the frightful force of this river when it is in flood, for the chances are that this sandbar and the boulders were not there before the latest flood and that the next one will carry them entirely away. Such are the ways of the Colorado River. Remember that it carries a fifty-per-cent solution of silt. During untold millions of years it has been steadily cutting its way a mile deep through the sandstone, limestone, and Archean granite of the Arizona desert on its 1600-mile journey to the Gulf of California. It is so heavily charged with mud and

Trails Through the Golden West

sand that if a man were to fall in, the weight of his clothing would sink him unless he were rescued at once.

The plateau drained by the Colorado River, lying between the Rocky Mountains and the Sierra Nevada in California, takes in 300,000 square miles of Arizona, Utah, Wyoming, and Colorado; and naturally the river has many tributaries and acquires a sharp grade in some places before it reaches sea-level. But it is none the less hard to believe that the Colorado, above its junction with the Little Colorado (which has a 2000-foot-deep gorge of its own), contains the discharge of eleven different rivers. It takes its rise in the Green River of Wyoming and the Grand River of Colorado. At the confluence of these two, in Utah seven hundred miles farther south, it assumes its name Colorado, owing to the color of the silt and clay drained from the surrounding country. From start to finish it has given birth, so to speak, to two hundred well-defined rapids of the most violent and dangerous character, which force their way between those vertical cliffs at the rate of ten to fifteen miles an hour. In the countless centuries of its ceaseless activity it has made for itself a channel averaging thirty feet in depth and three hundred feet in width between the most gorgeously pigmented walls imaginable, rising precipitously 2500 to 3000 feet above the level of the river. The most brilliant and spectacular of these flame-tinted gorges is the Marble Canyon or upper end of the Grand Canyon itself, recently bridged. It is not far from Lee's Ferry, where the river has cut its way through the northern portion of the Painted Desert and is quite accessible by motor-car from El

Down the Canyon Trail

Tovar. This is the only vehicular bridge across the Colorado above the Needles, in California, where the trans-continental railways cross it somewhat above sea-level.

The construction of this bridge has made both the north and the south rims of the Canyon accessible to the motorist, whereas a few years ago the north rim could be reached only by motor-car from Salt Lake City and the south rim by the Santa Fé Railway. Lee's Ferry itself, an interesting and historic spot, is decidedly worth a visit. Here is where John D. Lee, Mormon leader of the notorious Mountain Meadow massacre in Utah in 1857, managed to secrete himself for fifteen years before being "smoked out" by the United States soldiers in 1872. Five years later he had to choose between a rope and a firing squad. He chose the latter, and went to his finish seated on his coffin. Lee's Ferry consisted in a flatboat operated on a cable, and he located it at this one spot in a thousand miles where the Colorado was not so torn by rapids or so hemmed in by cliffs as to be impassable; for seventy years it has been the only regular and accepted way of crossing the river. For all I know it is running yet. But the mountain trail that overlooks the Canyon and leads to this ferry offers an unforgettable motor ride.

A few years ago, the outstanding consideration in taking a trail out in the West was whether the traveler got through without any disaster. If nothing happened to him it was a good trail; if anything went wrong, it was a bad one. But this has been changed by the automobile. There are few places today where the traveler takes any serious chance, whether afoot, in the saddle,

Trails Through the Golden West

or driving a car. And, happily, there are plenty of unspoiled spots still left where you may take your choice of what motive power you will use. You will be wise if you never miss an opportunity to make a trip by pack-train. No more satisfying or exhilarating way of seeing new country has ever been devised than from the seat of a comfortable Mexican saddle on a sturdy trail horse, with a camp in the open at the end of the day, rather than a hotel. Or if you prefer a motor-car you will find that Arizona is one of the few places rich in scenery where a car can be used to cover the miles that often intervene between the railroad and some place into which the odor of gasoline can never intrude.

In such circumstances I know of no one better qualified for either or both methods of travel than that desert veteran, John Wetherill of Kayenta, Arizona. Better horses and equipment I have never seen than his. Furthermore, he knows the location of all the springs and waterholes in Arizona and New Mexico, lacking which any person undertaking travel in that hinterland is destined for all kinds of trouble. And, when it comes to nursing along a refractory or crippled motor-car, old John is nothing less than a wizard. If you have ever done any desert-driving you will appreciate precisely what I mean. If you haven't you had better serve an apprenticeship before starting in. You may be an expert behind the wheel on a concrete road but, take it from me, you will find the desert a vastly different proposition. It has a way of humiliating the motorist whose experience has been mainly east of the Rocky Mountains.

Down the Canyon Trail

This suggests one of the most enthralling desert trips, combining the use of pack-train and motor-car, that the imagination of the traveler ever conjured. I myself took it some years ago, with John Wetherill, and I still live in hopes of repeating it before I'm too old to negotiate a mountain trail. Wetherill will meet you at El Tovar or Flagstaff with a car for about six hours of driving across the multicolored escarpments of the Painted Desert to Kayenta. If you leave from El Tovar you will pause for a never-to-be-forgotten sight of the Canyon at Grand View; thence you will cross the Little Colorado over the Government bridge at Cameron's, and follow the tortuous course of the 2000-foot-deep gorge which that small sister of the big river has cut through the desert all by herself.

Follows what should be not less than a fourteen-day round trip by pack-train from Kayenta to the marvels of Rainbow Bridge, which I have described earlier. If you insist, John will do it in less time, but you won't. Returning by motor, a little visit to the Indian village of Moenkopi will prove highly diverting. From here you will take your way north through the fascinating Navajo country, over the upper reaches of the Painted Desert and along the base of picturesque and brilliant Echo Peaks. For your night's camp choose between the Indian trader's oasis on the desert and "Buck" Lowery's camp at the far end of Lee's Ferry Bridge. In either event, you will cross this remarkable structure that night or next morning. A magnificent steel fabric, built at the joint expense of the National Government and the State of Arizona, completed in 1928. It spans

Trails Through the Golden West

the Marble Canyon with a total length of 833 feet and 467 feet above the level of the river—the highest bridge in the world. Further, it is the only vehicular bridge ever built across the Colorado River, at the upper end of the Grand Canyon, joining the north and the south rims of that famous gorge and bringing the motorist into close touch with those magnificent natural wonders on the north side: Zion National Park and Bryce Canyon.

Next morning finds you on a desert road on the north side of the river en route for the celebrated Kaibab Forest, which borders the irregular north rim of the Canyon for untold miles and is traversed by a most entrancing serpentine motor road. Here you will see one of the most curious little animals in the world, the Kaibab Squirrel, found in only two places—the Kaibab and Siberia. This interesting rodent is about the size of a house cat, with a jet-black body and a pure white, bushy tail which, in common with all the squirrel family, he carries like a veritable oriflamme over his sleek back, the tip lying almost between his ears. He is worth going a long way to see. Since he and his brothers are protected by national law, scores of them may be seen fearlessly coursing in every direction and running up and down the lofty conifers that make that vast forest. You will also see here and there a bunch of Black-tail or mule deer; they may stray within range of your camera.

On your way over the desert after leaving Lee's Ferry Bridge you may pass a place that has been known for years as the "Deserted Ranch." The house is built entirely of stone, with a pathetic attempt at architec-

Down the Canyon Trail

tural design. The story goes that the rancher, whose name has passed into oblivion, was a discontented member of one of the many Mormon settlements in southern Utah, and decided to leave his brethren and start out for himself in a more promising spot. He built the sturdy home and established his wife and a couple of youngsters there. Then he proceeded to dig a two-mile trench from a spring rising in the foot-hills of the Buckskin Mountains to his corrals and made a brave start with a small bunch of cattle. His nearest neighbors being in the little Mormon town of Kanab, about thirty-five miles distant, he had few visitors. And then one day, he vanished, along with his family and his cattle. His disappearance was noted in Kanab, where he had gone periodically for supplies, and some friends rode over to investigate. They found the place deserted. That was years ago, and no one has ever heard of them since. In a crude little enclosure, a few yards from the house, may be seen a couple of sad-looking graves with a rough board at the head of each, on one of which, when I was there, could barely be deciphered the name "Jimmie," roughly scratched with a lead-pencil. The name on the other has disappeared, if indeed there ever was one. Presumably these are the graves of the children, but no one knows. Whether he was attacked and his cattle were stolen, or whether he abandoned the place for any of a dozen possible reasons, is a matter of pure conjecture. Even to this day in these out-of-the-way places it isn't considered good form to ask questions, and the chances are small that this mystery will ever be solved.

Following a magnificent motor ride through the

Trails Through the Golden West

Kaibab Forest the next day, including a sunset and some glorious views from several vantage points on the north rim, you will camp somewhere near the head of Bright Angel Canyon, where you will be met with saddle-horses for which you will have arranged before leaving El Tovar. Here old John will take his leave, and you'll be sorry to see him go. He will make his way back to Kayenta in his car and you will have before you the adventure of a lifetime—the exploration of Bright Angel Canyon.

Threading Bright Angel Canyon

IF THERE is anything to match the grandeur of the 6000-foot descent into Bright Angel Canyon on the back of a sure-footed saddle-horse, I don't know where it is to be found. On the way down you pass through one of the most daring and ingenious bits of trail-making in the canyon, where the necessary pathway was dynamited from the cliff-side of the Redwall limestone. Here may be had a gorgeous view of Roaring Springs, which burst forth with a deafening peal from the canyon wall and go careering down the mountain-side in three husky streams, with a final drop of forty feet to the bottom of the canyon. You will reach the foot of the trail about mid-afternoon and will relish the experience of camping there over night. Near by will be heard the laughing waters of Ribbon Fall, an exquisite cataract; and I venture to say that you will be ready for the finest shower bath of your life. Of course, if you are determined to rush things, your guide may be able to pilot you through to Phantom Ranch that same day. In view, however, of the fact that you are making this descent for the purpose of riding through one of the most

Trails Through the Golden West

awesome and inspiring canyons in the United States, in which your camera may yield rich returns, you will naturally prefer making the trip when the sun is overhead rather than setting. No real nature-lover will want to pass through such a spot practically in the dark. You will have descended 6000 feet, to a level with the Colorado itself, and you are about to make your way out to the confluence of Bright Angel Creek with the main stream, through a meandering gorge six miles long, 2500 to 3000 feet deep, and from fifty to one hundred feet wide.

During the three to four hours it will take your horse to make the journey, he will cross and recross that limpid stream no fewer than a hundred times. You will be in somber shadows some of the time, where the overhanging cliffs will shut out the sunlight entirely. Then suddenly you will be subjected to a barrage of sunshine where the walls of the gorge widen or where erosion has reduced their height. Your camera will be working overtime and, even at that, you won't get half of what your greedy amateur's heart will covet. But you'll have plenty as it is.

There is supernal beauty in this place. You will be quite content to spend the night in camp, indulge a glorious plunge under Ribbon Fall in the morning and then proceed on your way, congratulating yourself on having had too much wisdom to "hurry the Canyon." Indeed that will be a day of days, and when you reach Phantom Ranch about four-thirty or five o'clock you will be ready for such a dinner as you would be ashamed to eat elsewhere.

Threading Bright Angel Canyon

After your night's rest you will be ready for the ascent to El Tovar. By eliminating Rainbow Bridge you can cut the time in two, but it will prove to be the most expensive economy you ever undertook. Better write to John Wetherill about it. All you'll need for such a trip is a sleeping-bag, riding breeches or knickers, a flannel shirt, wide-brimmed hat, and a fairly heavy pair of boots with no hobnails.

The ideal plan for such a trip is to form a party of from two to four congenial spirits. This will materially reduce the individual expense, and it goes without saying that the fellowship of kindred minds enhances the joys of the road immeasurably. Don't let the increment of the years lead you to consider yourself too old for such an undertaking. When our party went into Rainbow Bridge with John Wetherill, a few years ago, he had just returned with the most enthusiastic pair of "youngsters" I ever ran into: a man and his wife, both of whom were past sixty-five. Age is no bar to such a glorious adventure.

There is another fascinating trip into the Canyon for the consideration of those whose time is limited: down the celebrated Hermit Trail, a few miles east of El Tovar, for a night's camp in the depths; a leisurely horseback ride along the plateau or second level, for a few miles, to the base of Bright Angel Trail, where the return is made to the rim.

For those who don't mind a bit of rough going, a visit to the Havasupai Indian reservation in Havasu Canyon will yield wondrous returns. Scarcely one in ten thousand who visit the Grand Canyon ever hears

Trails Through the Golden West

of this glorious valley, be-jeweled by seven beautiful cataracts falling into an exquisite oasis, tucked away 2600 feet below the rim.

This lovely spot is accessible, these days, by a motor ride of forty miles over the smooth roads of the Coconino Forest to the head of Topocobya Trail, where saddle-horses will be waiting. Here begins a trail of ten miles down the cliffs and to the Havasu village, the like of which you have never seen and probably never will see. The trip cannot be made in less than five days from El Tovar and return. But by the time you have returned from it you will be eligible for membership in the Grand Canyon Veterans. If possible you should make a friendly call enroute on that grizzled veteran William Bass, in his shack at the head of the trail down into the Canyon bearing his name. Bass built this trail in the early days, and in connection with it he operated a cable-crossing over the Colorado River. The cable-car, so called, consisted of a wooden structure resembling a single stall in an old-fashioned stable, propelled by a hand-operated winch, at which the passenger was supposed to assist. For many years this cable was the only available crossing of the river west of Lee's Ferry. The construction in recent years of the suspension bridge at the foot of Bright Angel Trail and the Lee's Ferry Bridge has rather hurt old Bill's business, but he doesn't mind. Bill Bass is a curious character. He wouldn't get very far as a room clerk at El Tovar, but he certainly knows his Canyon and he has a bunch of rare yarns in store for the trustful traveler, accompanied by what might be called a sliding scale of rates for his

Threading Bright Angel Canyon

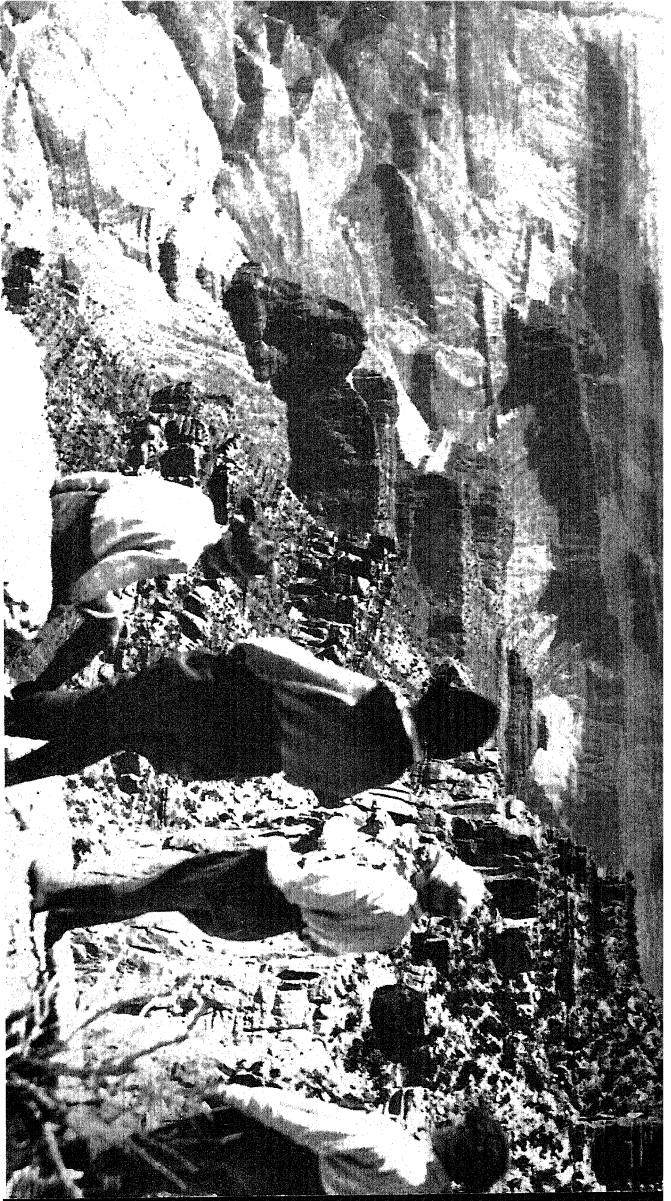
personal services. For instance, he really believes that any sightseer who would spend perfectly good money to come to a place like the Grand Canyon, when he might enjoy a *real* vacation at Coney Island, should have his head examined. Your coming will therefore prove to him that you are unfit to be trusted with money which could be put to a much more worthy purpose if it were in his hands. When I visited Havasu Canyon the route consisted of a twenty-mile wagon ride with Mr. Bass, over a trail whose memories still linger with me. At that time he was very much inclined to frown on automobiles, which he considered new-fangled and untrustworthy accessories to travel.

Havasupai!—"Children of the Blue water"—in these musical accents the stream that blesses the pitiful remainder of a once-flourishing tribe is well-named. It is purely an incident (though a very fortunate one) that they have a reservation down in that entrancing spot. Heaven knows they are entitled to something from this forgetful Government of ours. If that beautiful canyon were located where anybody but a daffy desert-enthusiast could reach it, the poor wretches would find themselves supplanted by their acquisitive white brothers over night. Even more pathetic were the virtually marooned agent and his wife—the only white people there. They will be glad to see you. Down a badly broken-up, helter-skelter trail, for what seems like an interminable journey, the wary trail horse picks his way. It won't be long before you will descend from the saddle, preferring foot-travel to the possibility of broken bones. And you will be interested to note how soon your horse will

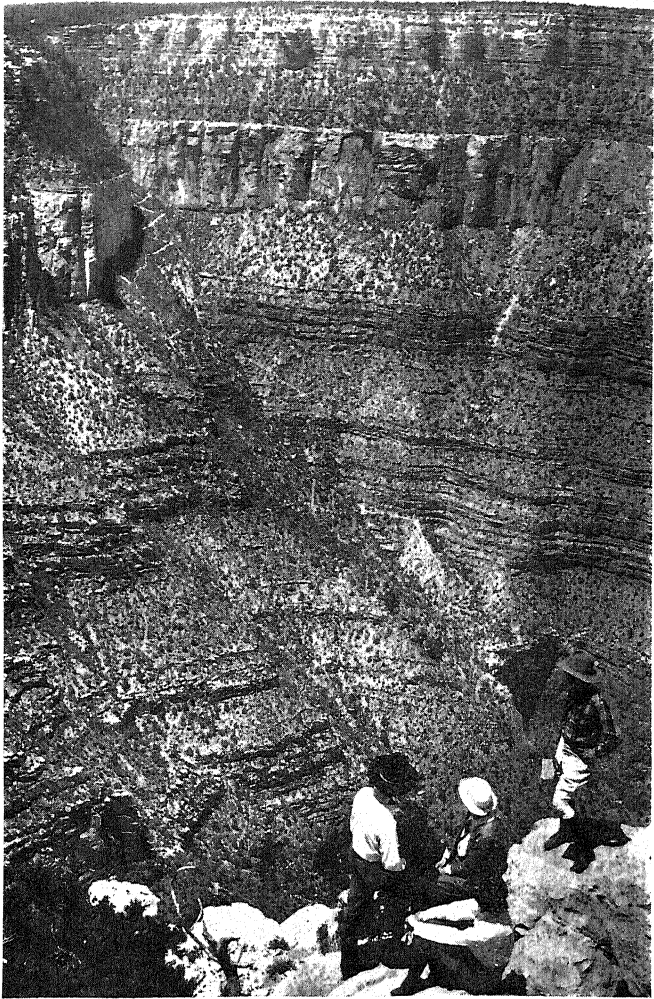
Trails Through the Golden West

follow almost in your very footsteps. Notwithstanding his familiarity with rough travel, he seems to have it figured out in his own mind that a human being knows more than he does; hence his dependence on his leader. You will scarcely credit the fact, as you descend, that all the supplies, household furnishings, etc., for both white man and mulatto-colored Havasupai, are transported over that amazing trail. But when you get to the bottom and—realizing that your head is still on your shoulders and your horse has not quite stepped on you—the charming view before you and the sound of falling waters that greets your ears will prove to you that the difficulties have been worth facing.

Before you lies a fertile valley—Havasu Canyon—not large but lovely, traversed by a crystal-clear stream and hedged in by lofty pink walls, with all the familiar tokens of fairy-like erosion and colorful brilliance of the Grand Canyon itself. This valley suggested itself as another good place for hiding when John D. Lee, who has already been mentioned, was evading the United States soldiers during the '60's; here he found sanctuary during part of that period, and if he had stayed he might have lived longer than he did. This canyon is one of the outstanding attractions of the Grand Canyon, though its narrow, bottle-neck entrance gives the traveler no hint of the beauties to be found inside. It expands into a graceful and symmetrical oval surrounded by thousand-foot cliffs that are ablaze with color. The dainty little "river of blue water" that runs through the middle is lush with watercress and edged by high cottonwood trees. Beyond lies a group of lovely water-



The series of tremendous caverns which form the channel of the Colorado River in its course through Arizona, reach their dramatic culmination in a gorge 217 miles long, a mile



Atchison, Topeka and Santa Fé Ry.

The thin white line seen winding down the opposite side of the Grand Canyon is the famous Bright Angel Trail which leads all the way to the Canyon floor.

Threading Bright Angel Canyon

falls, one of which—higher than Niagara—has in the course of the centuries worn an exquisite basin at its foot, where you may luxuriate to your heart's content minus a bathing-suit. By midsummer this generous water supply will have dwindled to a mere trickle. But while it lasts the Indians plant an abundance of apricots and melons, with enough alfalfa for their livestock. So, remote from the rest of humankind, they spend their days until the arrival of winter; and when the melting snows on the rim of the canyon above their heads send floods into the valley, they abandon it for caves in the cliffs higher up. With the coming of spring the waters subside, leaving their fields and gardens well fertilized by the deposit of silt. Then they start the year over again.

You will enjoy spending a day or two among these friendly folk. Fewer than two hundred of the tribe are left, and they grow fewer with each year; in time they will, of course, die out entirely.

By now you will have realized that any plan you have made for an itinerary allowing for only a few days at the Grand Canyon calls for revision if you are to have a really enjoyable holiday. And if part of your time there is given to some inquiry into the geological aspects of the country, you will add immensely to that enjoyment. For if a brief survey of the Canyon is so overwhelming an experience, what science has to tell us about the tremendous natural forces and the eternities at work in creating it is infinitely more so. An amazing drama has been acted here for countless millions of years.

Trails Through the Golden West

Down there at the very bottom of that fearful slash through nearly 7000 feet of the earth's surface, we find in the Archean granite the oldest stratum known to the geologist—the igneous crust that was the first to cool from internal volcanic fires. Then realize that the deposit superimposed on this Archean stratum was 13,000 feet (two miles and a half) deep; this was its original thickness—it is now but 7000 feet. In other words, the original deposit was 6000 feet higher than the present rim of the Canyon. The attrition of thousands upon thousands of centuries wore that 13,000 feet of rock away before the mile-high mountains and the terraced cliffs which now compose the Canyon were even deposited in the form of silt and ooze on the bottom of the prehistoric ocean that covered that portion of the earth's surface.

Try to imagine this section of our Southwest, embracing an area of 100,000 square miles, being imperceptibly lifted 6000 feet above the level of the sea until the exposed portion, having meantime hardened into rock, was eroded by the elements and once more sank to the sea's bottom in the shape of sand and silt of various colors to be further changed by salt water. This vast terrain, after a few additional millions of years, sank about 10,000 feet deeper, only to rise again with the unceasing changes in the earth's crust, in the course of measureless time. And so, up and down throughout the eons, during which various strata were deposited in layers, some of them 1000 feet in depth, successively compacting themselves into solid rock as they were thrust above the sea-level, until the process

Threading Bright Angel Canyon

came to a close with the Pleistocene Age. Result:—there were laid down sixteen geological divisions of time, which are today disclosed to the eye of the scientist in the eroded walls of the Canyon for the six to seven thousand feet of its depth. Meanwhile that irresistible, rushing torrent continues on its way as it has done for countless eons. Unquestionably there must have been some mighty cataclysm of Nature that cracked the Southwest across the dome and opened the way for the huge floods that followed. Floods subside, but given this amazing river, starting on its way to the seacoast from a source 6000 feet above its present level, it is not surprising that it should have developed into a Brobdignagian bandsaw, 1600 miles long, which, for century after century, has been cutting its way steadily through every rocky stratum in the outer coating or jacket of the globe, severing in twain, like a huge cheese, 100,000 square miles of territory just as it was left on the final subsidence of the waters, millions upon millions of years ago.

As the swirling river, laden with sand, boulders, silt, and shale, deepened the Canyon, lesser canyons were formed on either side, creating the effect of a monster herring-bone, through which swift-running streams flowed in and assisted in the work of erosion. Thus we have the widening out of the main portion of the Canyon itself, where the ancient rock has been chiseled away leaving those countless mountains, with their exquisitely colored and eroded peaks on a level with the topmost rim.

After all, the most impressive feature of the Grand

Trails Through the Golden West

Canyon is the simplicity of its creation: plain, ordinary erosion or attrition by the elements. Only, it is the most stupendous and most ancient example of its kind in the world. With ceaseless energy the gnawing tooth of Time in the shape of sun, wind, sand, frost, and rain has wrought a pigmented marvel in Arizona's desert landscape that is the despair of artists and writers the world over; the manifestation of a force that, given time, could not possibly fail. All that was needed was time, of which there has been no lack. And so it is destined to continue into the misty, immeasurable future until Time shall be no more.

The Petrified Forests of Arizona

THERE is a provoking perversity in the high handedness with which Nature sometimes carries out her work. Certain places, it would seem, she has distinguished with an interrogation point—a baffling query, as it were, left behind for the especial benefit of inquisitive travelers and contentious scientists. It is as if she said to the self-constituted investigator, hot on the trail of some of her most cherished secrets: “All right—come in and look around. Here is the cause, and there is the effect. Don’t ask me any questions. Figure it out for yourself.”

If she had done precisely that with the Petrified Forests of Arizona, she couldn’t have left the savants of the world more completely at a loss than they always have been and are today. Certain phases of the cause are obvious; others are as hopelessly hidden as if they had been locked in the very bowels of the earth itself and the key lost—which, as a matter of fact, is a fair description of the situation.

At Adamana station about halfway between Albuquerque and the Grand Canyon, on either side of the Santa

Trails Through the Golden West

Fé, there lie 400,000 acres of these petrified or agatized trees, 62,000 of which were set aside in 1906 by President Roosevelt as the Petrified Forest National Monument. This act of our famous conservationist President was one way of greeting that peculiar brand of souvenir-hunter who would steal a red-hot stove if he could get away with it.

Here are four hundred thousand acres covered with prostrate, fossilized remains of a species of lofty pine now extinct in this hemisphere, more or less resembling those magnificent conifers that line the north and south rims of the Grand Canyon today in the Kaibab and Coconino Forests. There is something incongruous in the growth of these immense forests of pine cheek-by-jowl with the desert from five to seven thousand feet above the level of the sea. And the hand of man, in this instance, which has constructed extensive motor roads through them, has done a great and good piece of work in a manner befitting the surroundings and void of offense to the most fastidious traveler.

As you ride through these tremendous forests bordering the Grand Canyon today, try to imagine yourself a spectator of those birth throes through which the Southwest passed during the long-ago period that I tried to describe in Chapter 9. Picture a subsidence of the earth's crust that caused those towering pines to topple over, all falling in the same general direction: towards the south, creating the impression of vast swaths, like a field of grain after the reaper has passed over it. Following this cataclysm—whose precise character is what puzzles the scientists—try to visualize

The Petrified Forests of Arizona

100,000 square miles of that territory slowly sinking down to a depth estimated at ten thousand feet, and a prehistoric sea rushing in to fill the hole.

Let us draw on our imaginations again. Conceive of the frightful weight of ten thousand feet of silt-laden salt water, combined with gigantic lava flows from numerous volcanoes internally disturbed by this earth-shrinking process; and imagine the pressure on these great trees lying prone beneath it all. If this ten thousand feet of water had all flowed in at the same time, those forest giants would have been flattened out like so many boards. But the operation was so gradual as virtually to constitute an embalming process.

In those vast depths the earth's hot springs were boiling with various solutions of silica, iron, copper, sulphur, and salt. Under a pressure compared with which the creosoting of a railroad tie is atomic, this silicified compound was forced into the very fiber and cells of the wood until the whole fabric—trunk, branches, twigs, and roots—was metamorphosed into the most beautifully colored agate: red, scarlet, maroon, brown, yellow, blue tints of every shade, pink, mauve green, and a gray. It almost baffles human thought to picture these trees, sixty to a hundred feet long, lying in orderly windrows nearly three miles below the surface of the sea, with almost the same thickness of exposed rock formation atop that. Think of the millions of years during which this process was going on, the mineralization of the trees beginning, as we are told, with the first deposit of sediment after the cataclysm that caused the ocean to flow in. Then came that period in time when, all this miraculous

Trails Through the Golden West

work accomplished, Nature in a sense reversed herself, and this vast undersea territory began to rise. So unwavering was this slow and steady upheaval that those submerged forests of moss-agate trees, still weighed down by thousands of feet of sedimentary deposit, were forced upward from their Stygian depths to from two to three miles above the surface of the sea. This act in the tremendous drama was the next-to-last, being followed by the work of that geological pruning-knife of Time, erosion.

A few additional millions of years served to eat away the exposed sandstone and limestone deposits, thousands of feet thick and thousands of square miles in extent, until these amazing "forests" were once more brought to light—but how changed! There is no question that when first exposed they lay intact just as they had sunk into the ooze of that prehistoric sea which originally engulfed them and in which they became fossilized. With the progress of erosion, however, the sandstone and limestone in which they were encased disintegrated; and deprived of their underpinning, so to speak, they fell away and were broken into sections from ten to twenty feet long.

These "logs" may be found scattered helter-skelter all over the bad-lands which constitute these tremendous forests today. They vary in diameter from two to seven feet, and the mathematical squareness with which they have broken apart discloses a geological cross-section that is both fascinating and beautiful, especially after a rain, when the agatized coloring is unusually brilliant. In many places the trees are found in their original

The Petrified Forests of Arizona

length of from 60 to 100 feet each, broken into from six to fifteen sections, each two separated by not more than one or two inches, indicating the uniformity of the subsidence of the earth which preserved the tree in its entirety even though it was broken into a dozen pieces. The remarkable fossilization is carried out in the bark of the tree with the same fidelity as in the grain. In fact, were it not for the presence of the fractures one would scarcely know the difference between the fossil and a prostrate, dead tree divested of its branches.

The varying pressure and the differing character of the chemicals forced into the tree cells have created a variety of crystallization. Some of these huge trunks are roughly circular in form, like a normally shaped tree. Others—notably the black—are elliptical; still others are hexagonal. The colors vary, reds and maroons predominating, owing to the presence, in one section, of iron manganese. Buffs and browns will be found elsewhere, in addition to a jet black and various blues and greens. These different colors characterize widely separated forests, of which there are five altogether, the First, Second, and Third, known as the Rainbow Forests; the Black Forest; and finally the Blue Forest, which is the most brilliant and strikingly beautiful of all. In this, though it is smallest, Nature has fairly outdone herself in preserving every tint of blue, a heavenly color in which an exquisite hyacinth predominates. The traveler should therefore not seek to content himself with a view of only one of these forests; he would be cheating himself. He might as well visit Rome and fail

Trails Through the Golden West

to see St. Peter's or the Vatican because his time was limited.

This amazing process of mineralization occasionally brings to light a nest of semi-precious stones ; amethyst, opal, and smoky topaz. Nothing but the setting aside of these marvels as a National Monument has prevented them from being exploited to the very limit by vandals who formerly not only did not hesitate to commercialize them but actually dynamited hundreds of these great logs with a view to dislodging the jewels that Nature had fashioned in their depths.

It is this mystifying process of petrification that has kept the scientists guessing for years. Silica is the one agent that has fossilized these prostrate monsters. Yet silica is quite insoluble except in alkaline solutions. Only in such circumstances could the silica be forced by the frightful pressure overhead into the grain and cells of the tree. And from this it follows that these great trees must have lain in an alkaline solution for untold ages during which the petrification proceeded. That, at least, is the theory ; but even with such an explanation the phenomenon is almost as puzzling as the character of the strange cataclysm that caused these great forests to topple over in windrows, heads pointing south, when this world of ours was cooling off and taking shape.

The varicolored marls and sandstone from which erosion has dislodged these trees are almost as brilliant as the agatized trunks themselves. It is regular bad-land country, such as may be seen in Wyoming and the Dakotas, only infinitely more brilliant. Maroon, pink, and buff are the prevailing colors in the First forest, ac-

The Petrified Forests of Arizona

accompanied by a variety of reds, purples, and browns in the Second. Innumerable buttes from ten to fifty feet in height, banded laterally with these slashes of color, create the impression of a limitless choppy sea, in the hollows of which these gorgeous fossils glow in the blinding rays of Arizona sunshine. Here and there may be found a veritable log-jam, as if the water from a mammoth boom had been drawn off, leaving the timber stranded at the bottom. Other places, well leveled off, may be found on which hundred-foot trees lie prone, as straight as arrows and broken into ten or twelve sections as evenly as if they had been sawed before removal to the mill.

In the First forest, six miles south of Adamana, may be found one of the most remarkable specimens in all five forests: a magnificent, unbroken log, 111 feet long, spanning a ravine fifty feet wide and twenty feet deep—a real bridge of agate, under which the Government has constructed a couple of piers to prevent possible accident. In the Second and Third forests, several miles farther south, will be found many undisturbed trunks lying in their original position; one particularly fine specimen measures 120 feet in length, with a diameter of seven feet.

If your time-limits absolutely preclude a really adequate visit, and you can allow yourself only a fleeting glimpse of these wonderful fossils, you may leave the train at Holbrook or Winslow for a brief view of the Rainbow Forest, taking a motor-coach for a seventy-mile ride, over excellent roads, and rejoining your train afterward. This is better than not doing it at all. But

Trails Through the Golden West

if you could just sell yourself the idea of getting the most out of these marvels, you wouldn't miss a visit to the Blue Forest, and still less would you wish to pass by the most remarkable of them all: the Black Forest, north from Adamana. Here is where the elliptical tree-trunks are found—calcified (not agatized) in black adamant. Here may be seen one of the most unearthly landscapes in the West. A veritable back-door entrance into Gehenna.

No one would dream that those elliptical logs lying around in profusion, and those broken stumps projecting one to three feet above the dark, forbidding earth, were fossils. They look exactly like the charred remains of a forest fire. You can only think that some terrible, devastating holocaust must have left the whole country, as far as the eye can see, burnt to a cinder. Nowhere else in the petrified-forest region will be found such a presentment of Hell-let-loose; nowhere else such jagged stumps, raising their broken, charred edges to a dazzling blue sky, while their fossilized roots still cling to the wasted soil. It is a paralyzing spot. You have seen the orderly toppling of the trees in other sections and you can understand how all that might have come about as a result of a buckling of the earth's crust. But these broken and split stumps create the impression that the section was swept by a mighty avalanche, followed by fire.

You pick up several pieces of different-sized fossils and are astonished to note that the peculiar elliptical shape prevails throughout: trunks, branches and roots. You handle them as you would a bit of charred wood,

The Petrified Forests of Arizona

with gingerly touch, expecting to find your fingers smutted. The place is creepy, seeming more deserted than the brilliantly colored forests south of Adamana, and the glance you cast towards the waiting motor-car is more than friendly. You are glad that it is still there, waiting for you, and that it won't be long before you are on your way. Then for the first time, your eyes wander off to the north—the only point of the compass not dominated by those satanic manifestations that have been absorbing your attention—and you behold strange rolling country drenched in color, numerous escarpments banded with reds, yellows, blues, purples, and the white of limestone. If you have been sufficiently forehanded to bring your field-glasses along, you will have an opportunity for studying close at hand the wonders of the Painted Desert.

A few hundred feet beyond where you are standing the ground slopes away suddenly as if it had been terraced. It is a strange phenomenon. Behind, a wicked, menacing, scorched land. Before, a vast desert shot through with a varied pigmentation, dancing in the shimmering rays of the sun, carpeted in rose, lavender, and old gold. As you sweep the country with your glasses you will pick up some of the most fantastic shapes that the gnawing tooth of erosion ever fashioned. Great washes have left their flow-lines around the bases of innumerable buttes, which rise from the floor of the desert like so many cocked hats, with here and there a wall of rock or escarpment that fairly sings with rudeness. This great expanse of multicolored desert stretches north and west, rising higher and higher until

Trails Through the Golden West

it blends with the south rim of the Grand Canyon and those marvels of erosion, Rainbow Bridge, Monument Valley, and Canyon de Chelly.

Not many years ago no one but an Indian would have ventured into those waterless infernos. Today good roads traverse them from one end of Arizona to the other, and a motor service is run in connection with transcontinental trains. Of course you would like to take a little ride down off that mesa topped by the Black Forest and circle around a bit in the midst of that glowing brilliance below—"shoot" a few pictures and go back home with the proof in your hands that you have ridden over the Painted Desert. But just a moment—you are traveling on schedule and the motor-car driver pulls out his watch and politely informs you that you must be back at Holbrook or Winslow at such and such an hour, in order to make connection with the train. Very well—go back and spend two or three nights at one of those picturesque hotels in either of the two towns, and make up your mind to see the wonders of this strange and fascinating country as they should be seen.

I never visit this wonderland but I go back in retrospect to my first trip into the Southwest many years ago. A thirty-day vacation in the month of July was mine. Armed with a copy of Stevenson's "Virginitus Puerisque," which was comparatively new at that date, I recall running into that immortal bit: "For to travel hopefully is a better thing than to arrive." Good, but I was a trifle young to assimilate its full significance. It was quite enough for me to apply it to the fact that I was bound for the Grand Canyon, traveling hopefully

The Petrified Forests of Arizona

into the desert country, with the thermometer registering something over 100. Railway rolling-stock in those days did not include dust-tight windows or electric fans. As we were approaching Adamana a fellow-passenger informed me that this was where the Petrified Forests were. The conductor looked me over appraisingly as I asked for a stop-over, saying: "If old Adam isn't at the water-tank, you'll probably find him at his cabin"; and he pointed out the direction. That was my first intimation that Adamana was only a water-tank, but it was too late to reconsider, for the train was slowing down. As I walked toward the door I heard one passenger ask of another "What crazy fool is getting off at this God-forsaken place on a day like this?" Judged by the luxury-loving traveler's standard, his surprise was readily understood.

I found "old Adam" at the water-tank and received as hearty a welcome as if I had been expected. It was then I learned his full name—Adam Hanna—and heard him tell with great gusto that the place had been named for him. I venture to say, however, that neither the official who named that water-tank Adamana, after the old man, nor the old veteran himself, ever dreamed how widely known that coined name would become in future years. I spent two nights with Adam, in his cabin on the edge of the desert, and by him was inducted into the mysteries of the Petrified Forests. He had lived in the desert since he was a young man, when he had brought his wife out there from Kansas. At the time of my visit she was back at the old home and had just written to

Trails Through the Golden West

Adam that she would be glad to get back to Arizona—it was “so damp and green in Kansas!”

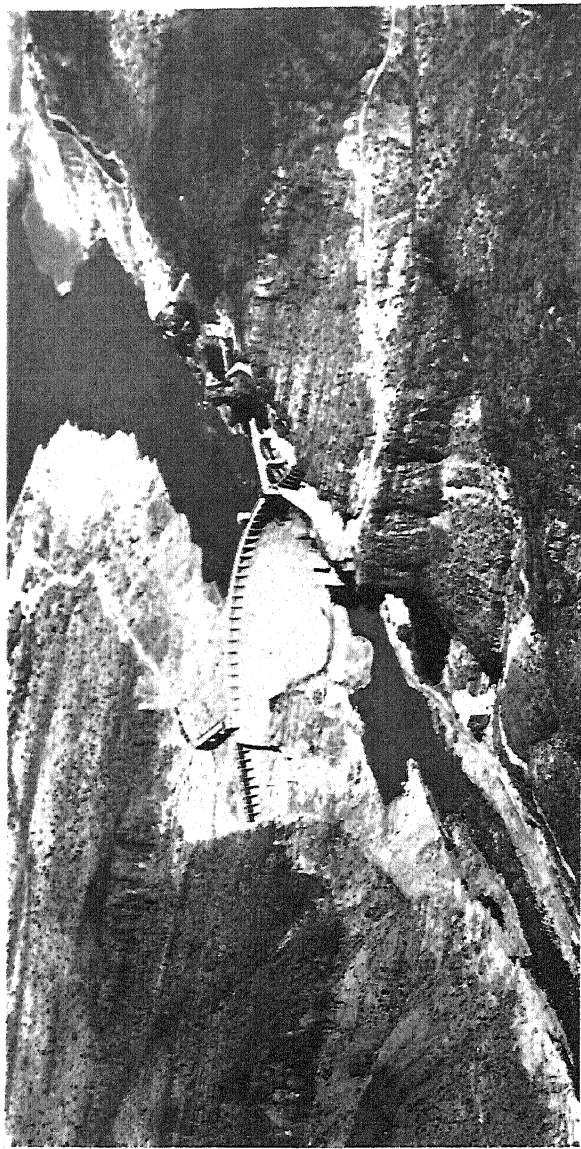
The Rio Puerco, which runs south of the railway at Adamana, cuts off the visitor from the southern forests except when the river is dry; hence the detour from Winslow and Holbrook by motor. The Black Forest lies to the north, however, and must be visited from Adamana. A recent appropriation by the Congress, for the construction of a bridge across the Rio Puerco, and a new motor highway to the Rainbow Forest, will restore Adamana to the greatness it boasted under the administration of Adam the First, who has long since gone to his reward. May he rest in peace! And when that work is completed I shall doubtless make another trip to the Petrified Forests if for no other reason than to honor the memory of the veteran whom I knew in the good old days.

It is worthy of note that, after having bid old Adam goodbye, and reaching the flourishing cow-town of Williams, a few miles farther west, where I expected to find a full-grown branch railway running up to Grand Canyon, sixty-four miles distant, I found instead a four-horse stage. One night in Williams, mostly devoted to inspecting the gambling dens and dance-halls characteristic of the desert town of that day, was quite enough. It was something of a novelty to see cowboys walking the streets, belted and spurred, with “six-guns” hanging almost down to their knees, and to learn how fond they were of the turn of a card. It was my first experience in a wide-open frontier town, and I was glad to get away the next morning for the Canyon. The only



Atchison, Topeka and Santa Fe Ry.

Scattered over an area of four hundred thousand acres lie the petrified trees that turned
to stone millions of years before the oldest redwood now growing, started from its seed.



Scenic Airways, Inc.

The Roosevelt Dam in Arizona is 240 feet high and has created a reservoir lake with enough water to cover 1,637,000 acres to a depth of one foot.

The Petrified Forests of Arizona

hotels on the Canyon rim in those days were tents, and the drinking-water was brought all the way from Williams. "Bucky" O'Neill's cabin, like Bucky's reputation as a member of Roosevelt's Rough Riders, was yet to come. No one could have foreseen in those days that Bucky would leave his bones in Cuba; but a fine equestrian statue, in the plaza in the city of Prescott, shows what Arizona thought of that dauntless spirit. For Bucky was glued to his hoss if ever a rough-riding cowboy was; a born adventurer, high-principled and with a fine mind. No wonder Colonel Roosevelt loved him—all Arizona did.

It was on this my first real desert experience that I learned how a man can go to bed at night with the mercury ranging up in the nineties, and find ice in his water-pitcher next morning. A change of 30 degrees in temperature between mid-night and morning is common in the desert. Never shall I forget my first descent of Bright Angel Trail on horseback. There was no parapet on the trail in those days and there were lots of places where the rider's knee scraped the inner wall of rocky cliff, while a glance downward on the opposite side, along the line of his stirrup, showed nothing but space—and plenty of it. Trail horses are curious folk; they like to pause occasionally and look out over the void, as though they would say to their uneasy riders: "It's nothing, when you get used to it!" A rider just ahead of me that day, however, didn't seem to appreciate the actions of his Nature-loving mule, who had stopped at a hair-raising turn in the trail to gaze off into limitless space.

Trails Through the Golden West

"You blankety-blank son of a blankety-blank," I heard him remark with some little asperity, "if you'll just keep your blankety-blank eyes on the trail, I'll attend to the scenery!"

On the way out from the Petrified Forests nobody will offer any objection if you pick up a few fragments of the brilliantly colored fossils which carpet those vast expanses. The custodian, were he not governed by regulations, would be perfectly safe in telling you that you were welcome to all the fragments you could carry. Their specific gravity of 165 pounds to the cubic foot will make an honest man of the most voracious souvenir-hunter that ever lived. Incidentally, you will appreciate precisely how a certain Denver capitalist must have felt after he had formed a company for the purpose of commercializing those magnificent logs by having them sawed into table-tops and polished for the *haute monde* at \$2500 each, only to learn that they were as hard as the diamond-dust that was required to cut them, not to mention their unsuspected weight. But in general the simile of the red-hot stove that I quoted would hold good here if it were not for the proclamation of President Roosevelt in 1906, setting aside for all time these 62,000 acres as a National Monument.

Before leaving Adamana don't fail to visit the Petroglyphs, those unusually fine specimens of ancient rock-writings and drawings done by the primitive Indians who peopled this strange country from five hundred to a thousand years ago. All over this Southwestern territory may be found innumerable instances of the artistic impulse through which these aborigines sought to

The Petrified Forests of Arizona

express themselves. Mostly they are crude drawings in ocher and white and red clays on the walls of canyons and cliff-dwellings. The ones on the rocks near Adamana, however, were etched as by a knife, and so, having withstood the sand-blasts of desert winds throughout the centuries, are today as clean-cut and intaglio-like as if they had been made yesterday. It is quite evident that the ancient artists used instruments fashioned from the diamond-hard petrified wood. Contrary to former opinions of archeologists, it is known today that the work has no historical value beyond indicating what class of Indian folk they were and the flowers and animals with which they were familiar. The Adamana rocks represent the best work of the kind throughout the Southwest and are well worth seeing and photographing.

Another of Nature's wonders may be come upon within an afternoon's motor ride from Winslow: Meteorite Mountain. Here earth and sky have conspired to create a mystery that has baffled scientists and engineers for many years. Viewed from a distance this so-called mountain resembles a low ridge. When we approach nearer, however, the ridge acquires a circular form and rises from the desert 100 to 150 feet. Climbing to the top of a vast extent of rock and rubble, the spectator looks down into a tremendous hole 600 feet deep by 4000 in diameter. Precisely what caused this amazing freak no scientist or geologist has ever learned. It is generally believed, however, to have been created by a monster meteor, the impact of which threw up the earth like a huge circular wave around the spot where it disappeared. Various mining companies have from time to

Trails Through the Golden West

time drilled the bottom of this great crater to a depth of from two to three thousand feet in the expectation of coming upon the meteor which it is believed could be salvaged to advantage. Up to date, however, it has been time and money wasted. If, as some scientists believe, it continued to be a meteor after it struck the earth, instead of becoming pulverized by the impact, it seems to have buried itself beyond recovery. Others think it may have made its flight in a long slant and may be deeply lodged in the desert sufficiently distant from the crater to make further search hopeless.

The Apache Trail

GENERALLY speaking, the pragmatic hand of man is not to be trusted to deal with Nature, especially when commercial interests are involved. His tendency is to paint the lily, to gild refined gold. When he approaches holy ground, instead of removing his shoes he is likely to put on hobnailed boots in order to show how practical they are. When he and his fellows organize themselves into a public-service institution it is only rarely that they can combine performance with a due regard for natural beauty. Not even a landscape architect can always be trusted to let well-enough alone; he has been known to cut down a mighty tree so as to make room for formal greenery.

That the scenic glory of our West has been preserved is largely because it has been easier here to do the thing right than to do it wrong. Perhaps the most eloquent illustration is the world-famous Apache Trail motor highway, just as wildly beautiful and unspoiled today as it was when only the moccasined feet of Indians trod it. As a gloriously picturesque as well as practicable motor-road through an otherwise almost inaccessible

Trails Through the Golden West

country of desert and mountain, it has no rival in the United States. The feature that differentiates it from every other notable highway in the world—and I am not forgetting the Amalfi Drive, the Engadine, or the Tyrol—is the Arizona coloring for which that State is so famous; an incredible brilliance of natural coloring along the roadside and in the valleys and on the mountain slopes. It is as unique for its variety as for its brilliance: bright reds, maroons, and pinks, limestone white, browns, and bronze-green, to say nothing of the ultramarine of the cloudless sky. Nowhere but in Arizona has any traveler ever seen so rich a landscape, because the pigments with which Arizona's canyons and mountain walls are stained are not found anywhere else. It has taken a cowboy artist to interpret Arizona—his own State—to the world: Jack Van Ryder, who, loving his art perfervidly, loves Nature even more. Hence his combination desert cattle-ranch and studio, near historic Camp Verde, a former United States Army post not far from the cliff dwelling called "Montezuma's Castle," which is to be described in a later chapter. He is the only artist who has had the courage to paint Arizona in her real colors: wildly and primitively beautiful, and correspondingly unconventional.

For the west-bound transcontinental traveler the Apache Trail starts at Globe on the Southern Pacific Railway; at this point a sleeping-car that was shunted off the main line train at Bowie drops him just in time for breakfast. Thence over the hills in a commodious, open-top, high-powered motor-coach for 120 miles of the most enchanting, breath-taking scenery imaginable. Ar-

The Apache Trail

iving at Phoenix at the end of the day, he rejoins his sleeper and his baggage. That's how simple it is to gain admission to one of the scenic pageants of the whole world. The Amalfi Drive, beautiful though it is as it follows the sinuous Mediterranean Coastline, pales into comparative insignificance beside the Apache Trail. For here are fire-tipped, serried, vermilion peaks looking down on the canyon-impounded waters of four perfect lakes, along which this serpentine Trail winds like a fairy runway, only to mount nearly 4000 feet above them when it climbs a mountain pass. Lakes that change color with every shifting cloud that filters the flaming radiance of an Arizona sun, lakes that are making spaces blossom like the rose. And the desert itself is not the least interesting feature of the landscape when we remember that its recorded history goes back to the middle of the sixteenth century, and that long before that time it was the home of a civilization so ancient that scientists can only guess at its dates. There are indisputable evidences of the progressive stages of this culture, evidences that it passed through the buffalo-hunting period to a stage when the people built their homes on the ledges of almost inaccessible cliffs, and then developed into an agricultural stage in which they built five-storied pueblos or great apartment houses in the valleys. And their descendants are the Pueblo Indians of today, whose surviving customs are many centuries old. It is through this kind of country that the Apache Trail will carry you, a magic highway that rises and falls like an endless roller-coaster.

Soon we leave behind us the hustling copper towns of

Trails Through the Golden West

Globe and Miami, with their tremendous smelters—towns that symbolize Arizona's mineral wealth—and begin the ascent to the summit of the Trail, from whose lofty crest, 4000 feet above sea-level, we get a foretaste of the beauty that lies before us. Below is spread a panorama of desert glory on which we shall shortly be training our cameras for a close-up. There are, luckily, no announcers on these cars, so we will do a little pointing. The vast Tonto Basin, 2000 feet below, is now filled with a superabundance of water, the lack of which in the early days caused one of the longest and bloodiest feuds ever known in the Arizona cattle industry; a feud that resulted in the extermination of all but one of the men who remained in that tragic spot and insisted on fighting for their water rights. And now that desert valley, whose desperate aridness once resulted in the shedding of almost more blood than there was water, is filled today with the impounded waters of the Roosevelt Dam, twenty-five miles long by two wide.

The Apache Trail is more than a highway; it is a museum as well. It runs within a few hundred feet of one of the most typical of the cliff dwellings, known as the Tonto. When you see this overhanging cave, resembling nothing so much as a bowl lying on its side, you will have a good deal of respect for a people who realized the necessity for self-preservation and, like the conies of Holy Writ, built their homes in the rocks where they could have an unobstructed view of the trail and could roll a few boulders down on the invader. Note the method of construction when you reach the cave, and realize that these prehistoric folk had no metal tools of any kind,

The Apache Trail

nor any knowledge of masonry as we understand the term. All they knew was how to break up stratified rock into small pieces, smooth off the rough edges by rubbing them against other pieces, and then lay them up in an orderly manner, with mud for mortar. You'll take your hat off to their artisanship and wonder what sort of plumb-line they can have used to insure such amazing accuracy. Note the size of the doorways, also constructed with the idea of repelling invaders and figure out in your own mind how easy it was to kill 'em off as fast as they arrived. Having just one husky warrior stationed with a club on the inside of each entrance was doubtless one of the first examples of Pueblo efficiency. When you look at the posts and the beams with their well-trimmed ends, remember that the work was done with stone axes. Last of all, as you look from the mouth of the cave to the depths of the valley below, just try to picture what it meant for some member of the family to go after water every day.

Motor-coach schedules call for an hour's stop-over at these fascinating ruins; sixty minutes to inspect a building and construction job completed anywhere from a thousand to fifteen hundred years ago, with the opportunity brought practically to your very feet. You may take off your hat to the builders of the Apache Trail as well. If it were not for that bit of foresight, the chances of your climbing up the face of a mountain in order to have a peep into the interior of a cliff-dwelling would be few and far between in summer-time in Arizona. There's no question but that we have our sight-seeing made to order for us in our great Southwest.

Trails Through the Golden West

I'm not certain that it wouldn't be a good thing if we had to work a bit harder for it—we might appreciate it more.

As we approach Roosevelt Dam, about luncheon time, the road rises and skirts a lofty cliff on the left, into which one end of that huge structure is wedged, spanning the narrow mouth of a deep canyon that has been hewn out of the living rock in the course of the centuries by the combined action of the Tonto and the Salt rivers which formed a confluence at that point. This immense mass of masonry, the first unit of the great Salt River Reclamation project, was built from the rough marble taken from the lofty cliffs which it bridges. It is 284 feet in height, with a foundation of 36 feet in bedrock, a length of 210 feet at the bottom and 1125 feet at the top, including a 16-foot roadway; dedicated by President Theodore Roosevelt in March, 1911. A few hundred feet from the far end of the dam, overlooking the lake, stands Apache Lodge—a rambling, home-like, two-storied caravansary where we will have a bit of food and then proceed on our way.

From Roosevelt Dam, west, the road drops quickly to the original level of the river, which in its turn becomes Apache Lake, a picturesque body of water eighteen miles long, formed from the overflow of Roosevelt Lake and impounded by Horse Mesa Dam. The surplus waters of Horse Mesa Dam become, in their turn, Canyon Lake, which winds for ten miles through a narrow, serpentine gorge, averaging 200 feet in width, and hemmed in by brilliantly colored, serrated cliffs rising on either side from two to three thousand feet

The Apache Trail

above the water. For sheer, stark, overwhelming beauty, these towering mountain crags, splashed riotously with color that is reflected in the water at their feet, are without equal. Canyon Lake is a gem, but only a small part of it can be seen from the roadway. How it may be seen from end to end will be told later. From Mormon Flat Dam, which impounds the waters of Canyon Lake, there stretch away for an additional ten miles the damned-up waters of Saguaro Lake, which are held in place by the newest and last dam of the series, Stewart Mountain.

Between the road and the shores of the lakes, every variety of cactus may be seen, from the towering Saguaro to the diminutive beginnings of a patch of Nopal. Transverse canyons break into the roadway from either side, leading away up into the heights of the main range and ending in blue haze. And color, color, color on every hand. One does not quite realize, until he finds himself in the desert, how prodigal of beauty Nature can be. It would seem as if she said to the traveler, "If you manifest enough interest in what I have to display, I'll open your eyes as they were never opened before."

Apparently the Trail has come to an end at the foot of a mighty mountain of rock which owing to its precipitous character seems to be twice to three times higher than it really is. You have been bowling along through Fish Creek Canyon without realizing that you are 2000 feet above sea-level. And when the car stops, it isn't apparent that there is anything further to do but turn around and go back. And then your eyes descry a dim, hazy line, almost above your head, on the

Trails Through the Golden West

very face of the cliff, which seems to have neither beginning nor end. About that moment the driver is calling your attention to the incredible fact that this is the continuation of the highway. While you are wondering how any car can negotiate such a breath-taking stunt, you are on your way across the bridge at the foot of the Trail, and have started on your climb of a mile and a half up the face of a precipice that rises a trifle over a thousand feet from the floor of the canyon to the summit of the pass.

Then you see what a wonderful roadway it is—hewn out of the eternal rock, smooth as a floor, plenty wide for cars to pass each other, and having several observation points where the sightseer can stop and take it all in. You note the easy grade; the motor is on second speed merely as a concession to your feelings. As you gain the summit an overwhelming panorama meets your eye.

To primitive beauty is added the volcanic savagery of an elder day. Fish Creek 1000 feet below winding like a silver thread through the valley; the Walls of Bronze off to the right, rearing their mighty bulk, shimmering in the slanting rays of the afternoon sun, and in between a sunlit chasm through which the sinister Apache raiders used to make their way westward in the good old days when scalps were plentiful. A little farther on and you may look down on a comparatively level bit of going to the left of the road, and see a portion of the original trail itself, where the rock has been worn smooth by the tread of moccasined feet throughout uncounted years. Take note, also, of a rough-looking road leading off to the right, shortly after leaving the

The Apache Trail

crest of the pass, because you will want to come back to it at some future day. That is the original highway over which all the building material and equipment were hauled for the construction of Horse Mesa Dam, in the depths of the canyon two or three thousand feet below.

Leaving behind us these four picturesque lakes, the combined waters of which will irrigate 250,000 acres of desert land, we find ourselves, late in the afternoon, approaching one of the most fascinating spots on the whole Trail: Superstition Mountain, so called by reason of the Apache belief that the place is haunted by the spirits of former tribesmen who fought unavailingly against the coming of the white man and the consequent loss of their ancient lands, from which they were eventually driven. Superstition Mountain has a beautiful setting, best seen in the afternoon, with the sentinel-like giant Saguaro cactus casting its elongated shadows over the desert at the mountain's foot. The mass is like a truncated pyramid, the cliffs of which are eroded into a myriad of strange formations resembling human beings. The Apache belief is that these odd-shaped crags contain the spirits of their ancestors and that the spirits will remain thus rock-bound until the country roundabout is returned to its original and rightful owners. Meantime, no Indian will willingly go near Superstition Mountain.

One of the novel bits of bird life along the Trail is the long-legged, crested California Road-runner or chaparral cock, which can outrun a horse; it trots along the highway like a diminutive ostrich, just ahead of the car, crest laid back, long, streamline tail stretched out like

Trails Through the Golden West

a rudder, all set to make that big motor look as if it were standing still. When the bird learns what forty miles an hour on a straightaway feels like, however, he takes a sudden dive into the brush, crest up and very cocky as if he might be saying: "Well, I gave you a sample of what I can do; now let's see *you* burn up the road." He is a very attractive bird, part and parcel of the desert and quite unafraid. Incidentally, he is the rattlesnake's mortal enemy and quicker on the dodge than the reptile is on the strike. His favorite method of attack is to rush in before the snake can coil up for another strike and with a few pecks of that heavy beak, either blind him or break his neck. Now and again, a short distance off in the cactus may be seen a curious coyote, pausing for a moment to watch the passing of the car; but let the car come to a stop and he is off like a shot. Br'er Coyote is the one desert animal never caught napping.

Arrived in Phoenix, late in the afternoon, it becomes a question in the traveler's mind whether he will rejoin his train or make a stop-over. If you decide on the latter you will probably elect to return over the Trail in the opposite direction. This time it will be a good plan to devote a day to a boat-trip on Canyon Lake, which will take you ten miles up-stream to the very base of Horse Mesa Dam. This is out of the question on the regular run because there is no hotel at the lake. You can go out in the morning, however, and return to Phoenix in the afternoon on a regular motor-coach specializing in that trip. You can get information about this at the hotel. It is a feature of the Apache Trail that is as im-

The Apache Trail

portant as the complete trip itself; there's nothing like it anywhere in the country at large—nothing to which it may be compared. This beautiful canyon was the former bed of the Salt River, a swift-running stream at certain seasons of the year and practically dry at others. Furthermore, there was no way of getting into it except afoot and this was a hazardous undertaking. The impounding of the waters, however, has added a touch of exceeding loveliness and intimacy to an awe-inspiring majesty that originally served notice on the newcomer that he advanced at his own risk.

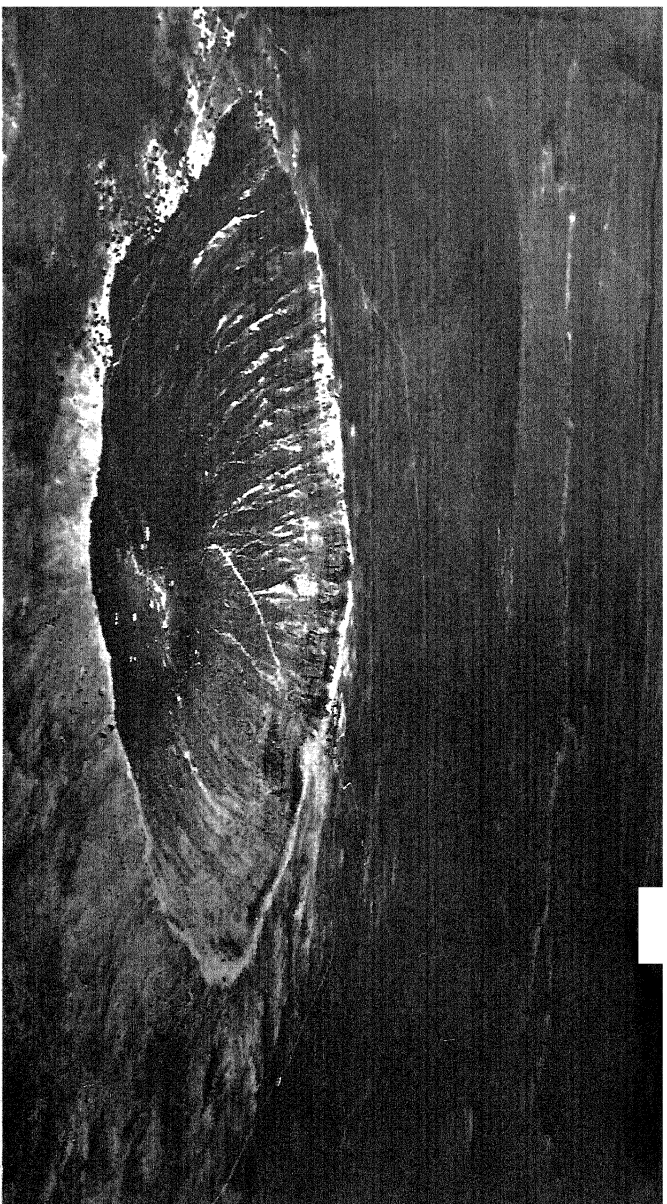
If the old supply road down to the Horse Mesa Dam is safe it will be a worth-while experience to engage some thoroughly dependable driver who is familiar with it to take you down. The road should be all right because there is no other way of getting down to the dam for repairs. It is not, however, a trip to be made on your own responsibility, for obvious reasons. Nothing to alarm you, but these exceptional experiences are reserved for those who "travel hopefully." Incidentally, it will be a field-day for your camera.

Another short side-trip which may be included with either of these days is a brief visit to the down-stream side of Mormon Flat Dam, showing a continuation of the gorge below Canyon Lake and a splendid view overlooking the dam and the lake itself, as it backs up between the lofty walls of the canyon. Indeed, after the boat-trip and the descent to Horse Mesa Dam, this gorgeous view is next in importance. In exquisite perspective it is the most satisfying of all four lakes, and

Trails Through the Golden West

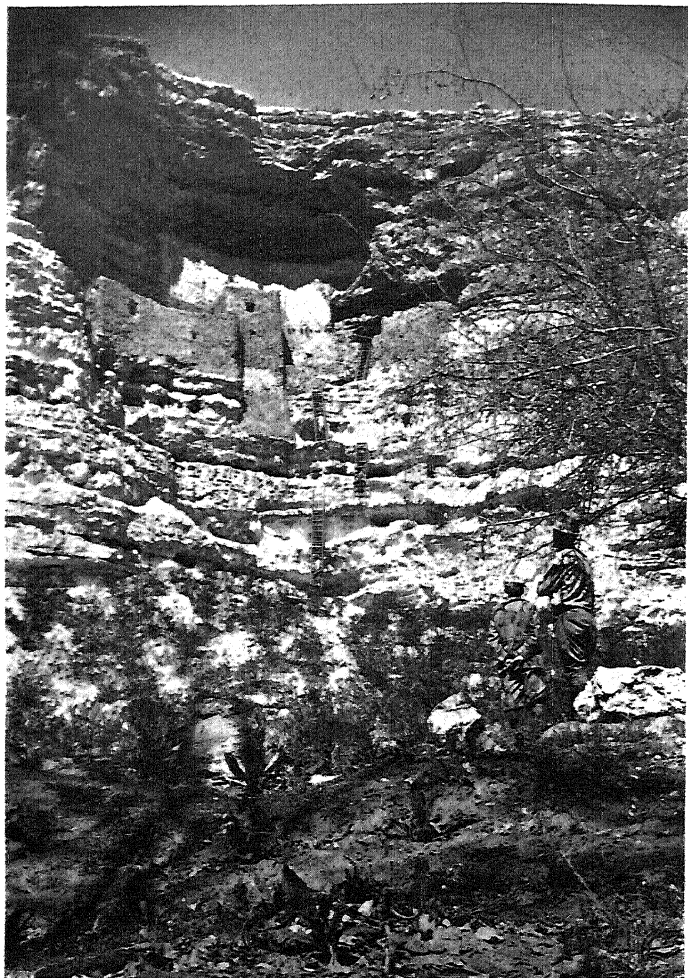
again your camera will be giving a good account of itself.

Still another approach to the Apache Trail is open to the traveler who may be bound west from Tucson: a motor ride north through the Santa Catalina Mountains, over the Oracle Trail, following the canyon of the Gila River (in places as sightly as anything in Arizona), through the old-time copper mining towns of Mammoth, Winkleman and Christmas. An hour may be devoted to a visit to Coolidge Dam, the very latest in dam construction and totally unlike any of the others mentioned; it impounds the waters of the Gila River. All this country is both historic and prehistoric in interest. The cliff-dwellings in the Canyon of the Gila and the atmosphere of those old mining towns, which hasn't changed a whit in fifty years, add a mellowing touch to this section of Arizona not to be found elsewhere. Unless you have thoroughly acquainted yourself with Arizona's mountain roads, don't undertake any part of the hundred-odd miles between Tucson and Globe in darkness. There are some spots along that memorable Gila River Canyon that, at an altitude of 2000 feet, will make the cold chills chase one another up and down your spine. From daylight to dark it is in a worthwhile class by itself, and a night at Globe will just fit you for that incomparable 120 miles over the Apache Trail the next day.



Atchison, Topeka and Santa Fe Ry.

Six hundred feet deep and nearly three miles in circumference, Meteor Crater is thought to have been hollowed out by a monster meteorite.



Atchison, Topeka and Santa Fé Ry.

The skill of the ancient cliff dwellers in constructing their homes and strongholds is a constant source of amazement to the traveler. This view shows Montezuma's Castle, one of the finest cliff dwellings of the Southwest.

“Montezuma’s Castle” and Casa Grande

THE scenic attractions in the vicinity of Phoenix, not to mention the up-and-coming city itself, are so many that you should get yourself a road map, which the local automobile club will be glad to furnish. One trip, at least, should not be overlooked: to Prescott by motor-car for 113 miles over the famous Hassayampa Trail. Prescott, Arizona’s old-time capital, lies atop the Sierra Prieta range, 5346 feet above sea-level and over 4000 above the level of Phoenix. This is what is known as the White Spar Road; it crosses the Bradshaw and Sierra Prieta ranges at 4000 and 6025 feet elevation, respectively. Halfway up the Bradshaws on Yarnell Hill is Desert View, one of the finest desert panoramas in all Arizona. And by the time you have reached Prescott you will appreciate why they call it the “mile-high city.”

Historically interesting and attractive though old Prescott is, however, our real objectives lie beyond: the famous cliff-dwelling, “Montezuma’s Castle,” and the mysterious bottomless crater known as “Montezuma’s Well,” both within a few miles of Camp Verde;

Trails Through the Golden West

and Arizona's great natural bridge at Payson. This takes us about one hundred miles the other side of Prescott, the road passing through the copper-mining towns of Jerome and Clarkdale: interesting examples of how desert municipalities can be made to stick fast on a sheer mountain-side at a 6000-foot elevation and how folk manage to travel around in them without falling off. In all, it makes a round trip of 350 miles, with the return to Phoenix by the picturesque Black Canyon road through the ancient desert towns of Dewey and Humboldt, and is well worth the four or five days you may wish to put in on a combination of desert and mountain motoring. Your nights will be spent most comfortably at a Prescott hotel and at Dave Goodfellow's ranch at Payson. You need not write any letters to announce your arrival. Both places will be ready for you. But unless you are accustomed to mountain driving you will do well to reach the ranch before dark, for Dave and Mrs. Goodfellow do not expect many night arrivals; but you will be very welcome. The mail stage plies daily between Globe and Jerome, touching at Goodfellow's enroute, and the road is good. If, however, you come to this country by train, you will reach it by the Santa Fé from either Phoenix on the south or Ash Fork on the north.

Of the thousands of cliff-dwellings in southern Arizona, the finest and most easily accessible is "Montezuma's Castle"—flamboyantly named many years ago by somebody whose historical accuracy was weak. It is a stately ruin lying fifty-five miles from Prescott in a characteristic limestone wall 200 feet high in Beaver

“Montezuma’s Castle” and Casa Grande

Canyon, a few miles beyond Camp Verde, the old-time army post established to deal with the Apaches years ago. The run is made over a highly interesting and scenic road crossing Mingus Mountain at an elevation of 7720 feet. You will see the dwelling some time before drawing near to it, in a deeply eroded cavity eighty feet up from the base of the cliff, absolutely sheer. According to archeologists it is not less than a thousand years old, and shows five different periods of construction. The building proper consists of five stories, with a total height of fifty feet. Built in the form of a crescent sixty feet wide and containing twenty-five rooms, with a wide over-hang of the cliff above, it suggests a feudal castle. Before its tenants could reach the first story they had to climb eighty feet up the face of the cliff. This was accomplished by means of primitive ladders, extending from ledge to ledge, which were hauled up every night after the latest straggler had reached home. It is also quite apparent that the material which went into the construction of this ancient house—the tons of rock, the logs, the mud for making adobe—must have been carried up on the shoulders of the natives, who had no other way of scaling the vertical cliff than by these ladders.

Following the architectural plan of all those ancient dwellings, each story is “staggered” towards the rear, like so many steps, the top story being so far back under the overhanging cliff that it cannot be seen from the foot. The reed and wattled roofs of each story are practically intact, as well as the beams, which are apparently as serviceable as ever, the ends of each having been trimmed with a stone axe or burned smooth. Sooted

Trails Through the Golden West

roof and hearthstone tell their own story just as clearly as if the last meal had been cooked within a fortnight. It is amazing how well the dry air of the desert preserves fabrics and woods.

When you have seen "Montezuma's Castle" you will have seen the most compact, dignified, and imposing cliff-house in the Southwest. As a National Monument it is kept in excellent condition, with stout ladders leading to all floors for the use of the visitor. The view from the top story out over the valley, through which runs Beaver Creek along which these ancients did their sowing and their planting, is richly worth the climb to the very top, and offers many an opportunity for photography. Here and there may be seen evidences of ancient irrigation ditches that carried the waters of the Beaver to their little vegetable patches. It is all quite pathetic if one is inclined to be contemplative. They had so very little, despite which they have left for the traveler an objective so ancient, so hoary with departed centuries that the American archeologist or antiquary need not leave his own shores to indulge a hobby as consuming as any to which Greece or Rome ever contributed.

Not far beyond "Montezuma's Castle," twelve miles up Beaver Creek from its confluence with the Rio Verde, lies one of those "bottomless" vent holes which owing to some subterranean supply has become filled with water. It is a huge sink, 200 feet in diameter by 80 feet deep, known as "Montezuma's Well." As you follow the trail you come upon one of those limestone hills which are a part of the desert landscape all through Arizona, the side of which was eaten away by the action of Beaver

“Montezuma’s Castle” and Casa Grande

Creek in prehistoric times, leaving a picturesque cliff approximately 100 feet high. When you reach the summit of this supposed hill, however, you find yourself looking down into a grim and forbidding chasm. You have the feeling that in spite of the clear instructions issued about the approach to this fearsome hole you might have stumbled into it. You don’t need to be told that there is an underground abyss beneath. Confronted by nearly vertical walls, you look for a trail down to the water—vainly, at first. There are two of them, however, and if your nerve holds good they are worth investigating. One leads down on the side nearest the creek, where the action of the water has eaten it away, leaving a narrow shoulder or partition between the “well” and the outer rocky slope leading down to the creek bottom. You can see the ruins of a former cliff-dwelling on that uncertain-looking bridge, with hardly sufficient room for one person to walk between its ancient wall and the edge of the cliff overlooking the water. From these ruins a steep but safe trail leads down to within a few feet of the water’s edge. And when you get down there you espy two more dwellings hidden beneath overhanging cliffs, directly across the water from where you are standing—places that cannot be seen from above—with an appalling trail leading up to them on which a goat could scarcely find a footing. You try first to visualize the building of these veritable swallows’ nests, and then picture them inhabited by families. It is too much for an ordinary mind; you are not quite convinced of the reality of it all. Then your attention will be drawn to a spacious cave at your back, big enough to hold a

Trails Through the Golden West

regiment. It is as dark as a pocket and you will need a flashlight, but it will repay the time taken for investigation.

Evidences of ancient occupation abound: partition walls with the usual low door characteristic of this ancient architecture; mummified corncobs, broken stone-hammers, flowing water beneath the cave floor. You wonder if there was ever a time when these cliff-dwellers were free from marauders. Surely nothing but the desire for security could have dictated the selection of such curious dwelling places. A final look at that gloomy body of water as we retraced our steps left a cold chill, and I wasn't at all surprised when told that a plumb had been dropped to a depth exceeding 400 feet without touching anything; so it would seem that the term "bottomless" is fairly appropriate.

Returning to Prescott for the night, you have all the next day for an eighty-six-mile run to Arizona Natural Bridge at Payson, by way of Camp Verde, with plenty of time to reach Dave Goodfellow's ranch before dark. This will give you all the next day to see the greatest natural bridge in the world. Do not count on photographing it, except in spots—you might as well point your camera out of a hotel window and expect to get a picture of the world.

As you cross the great gorge of Fossil Creek an almost unbroken string of cliff-dwellings looks down from dizzy heights to the water below. Bubbling mineral springs, saturated with carbonate of lime, burst out with almost volcanic force, resulting in circular lime deposits that look like huge white bowls, continually filling and

“Montezuma’s Castle” and Casa Grande

emptying like great vats. On you go through solitary Strawberry Valley and over the divide, where you get your first glimpse of the Goodfellow ranch. Winding in and out of the bush, by the time you arrive at the ranch you will be glad that what you had to do was done in daylight. A little rest after so strenuous a drive will be in order, and then—or maybe not till next morning—you will be interested in a preliminary view of the bridge. And here is where Dave Goodfellow has for years been having his little joke; for the fact is that Dave’s ranch is on top of the bridge.

The first thing he will do is to take you into his five-acre apricot orchard and lead you to a peep-hole down through the earth at your feet, through which you may look, as through a magic telescope, into the depths of a wild canyon hundreds of feet below. It is uncanny. You can hardly believe that a five-acre orchard is superimposed upon a 500-foot arch of rock, the under side of which is 200 feet above the surface of the stream below; or that the limpid pool immediately beneath is approximately 100 feet deep by 75 wide, and so transparent that a white rock thrown in can be followed by the eye in its descent to the very bottom.

Nowhere else in the world is there a better illustration of the continual dropping that wears away the stone. What has made this marvel is not wind nor sun, frost nor rain nor flying sand—nothing but the steady, unceasing flow of this stream during long years. It is a fearful thing to look down into—or, for that matter, to look up from when you get down to the bed of the stream. Overhead, under the arch, the limestone is symmetrically

Trails Through the Grand West

groined and supported by a natural stream as it bored its way through. Consider how, in the infinitely measured and merciless advance of centuries upon centuries, this stream has chiseled a hole in the eternal rock 300 feet deep and 600 feet long, with an arch over all of 500 feet. In other words, that canyon stream has worn away practically ninety million cubic feet of rock since it started in to carve out the mammoth natural bridge of the world.

The abutments of the bridge, so to speak, are honey-combed with caves in which practically every forest animal has at various times found refuge. Old Geronimo, the Apache chief, concealed himself there when the United States soldiers were scouring Arizona for him back in the '90's. Dave Goodfellow has built a series of stout ladders up the cliffs for the especial benefit of those who are athletically enough inclined to do some underground investigating. Spectacular stalactites and stalagmites abound, and remains of basket-work and pottery done by cave-dwellers in the misty past. When Goodfellow discovered this place years and years ago, and located his ranch on it, it was as definite a bit of exploration as if he had started out with that idea in view. It is one of the show places of Arizona and opens to the eyes of the visitor as wild and primitive a country as he could ask to see.

The view up and down the canyon is extremely beautiful. Its western wall is a colorful mass of splintered red granite, sheering back, out of perpendicular, 1500 feet above the stream. The eastern side is of gray limestone, 200 feet high, its walls almost overhanging. There is no

“Montezuma’s Castle” and Casa Grande

quarter-section in the whole West to compare with Dave Goodfellow’s. He and his Scottish wife and his astonishing ranch on top of a bridge—they are in a class by themselves. For years Dave has been known as something of a hermit—suggesting Stevenson’s “Will-o’-the-Mill.” Both he and his wife are outstanding examples of the character that may be acquired by living close to the earth—a ripe and tolerant mellowness.

About thirty miles east of Phoenix on the Gila River lie the interesting ruins of Casa Grande (Great House). So far as is known, this is one of the earliest instances where, as an apparent result of the cessation of hostilities, a tribe of Indians deserted their cliff and cave dwellings and took up their abode on the plain where they could be near water and their crops. This ancient pile was discovered by Padre Kino in 1694. He refers to it in his diaries as a four-story building as large as a castle. Archeologists state that it was surrounded by a wall measuring 420 by 225 feet. The principal remains are those of a watch tower, 40 by 60 feet in size, which contained sixteen rooms, the smallest of them 10 by 24 feet. This watch tower enabled a sentinel to see for ten miles in every direction, which would indicate that the inhabitants were not taking any chances of an unexpected invasion. The first or ground story of this building is filled in solid, apparently to give a firm foundation to the rooms, which begin on the second story. An irrigation canal led from the pueblo to the river. The nearest forests being seventy miles distant, it is evident that the juniper and cedar timbers from which the ceilings were made were floated down the Gila River to the

Trails Through the Golden West

village site, where they were hewed into shape with stone axes. Many such axes have been found in the ruins, along with some fine specimens of pottery and woven fabrics which are on exhibition at a most creditable museum established as a result of scientific excavation since the Government set it aside as a National Monument.

Casa Grande's watch tower possesses one feature that is unique in the construction of these ancient aboriginal cities throughout the Southwest: a scheme that enabled the inhabitants to calculate their calendar year. In the eastern wall there is a hole drilled—clear through the four-foot-thick adobe—about an inch and a half in diameter; and facing it on an inner wall across a passage-way is another drilled hole. These two aligned holes have an exact bearing of 85 degrees east. The custodian told me that, according to the scientists, this is the point on the eastern horizon where twice yearly there is no variation in the sunrise. Apparently the aborigines knew how to place the holes with such geometrical correctness that twice a year they were able to snare a sunbeam that shone in straight through the outer hole and into the hole in the opposite wall—probably on the mornings of March 7th and October 7th. Even to this day the sunbeam entering from outside strikes within a quarter of an inch of the center of the hole in the opposite wall.

Casa Grande, being close to the motor highway between Phoenix and Tucson, is easily reached; also from the Southern Pacific Station of that name. By all means go and look it over. You may always be sure that a place

“Montezuma’s Castle” and Casa Grande

that has been set aside by the National Government as a monument or a reservation is eminently worth while. The principal reason for this action is to protect a national beauty spot or a prehistoric ruin of inestimable worth from commercial exploitation, in the first place, and in the second from that unspeakable vandalism in which so many travelers indulge in the name of souvenir-hunting. Nothing but the eternal vigilance and creative instinct of such thoroughly patriotic and public-spirited men as the late Stephen T. Mather, who put so much life into the administration of our National Parks and so much of the fear of God into those rapacious advocates of their commercial spoliation in Washington, has preserved these precious heritages for our benefit and posterity’s.

Imperial Valley and the Salton Sea

FOR the leisurely traveler who likes to explore out-of-the-way places in search of the unusual, there is a curious spot on the Arizona desert not far from the Mexican line, about twenty-five miles south of Wellton on the Southern Pacific. It is known as "Tinajas Altas," a Spanish term for a mountain water supply meaning "high tanks." Tanks such as these are invaluable, but they are few and far between in the Mexican and Arizona desert. They are found from twenty-five to a hundred feet up the cliffs, generally in a depression or hole in the granite where water from the last rain collected and remains drinkable and cold for months afterwards. They are, in fact, the sole water supply for hundreds of miles, and the amazing thing about them is that the process of evaporation is so slow and that they keep so cool and drinkable. Their discovery goes back into the distant past. They were known to some of the forty-niners, who wandered off the trail to California not far away and who were fortunate enough to save their lives by the discovery. The graves of those who were out of luck may be found at the foot of the

Imperial Valley and the Salton Sea

cliff, on the partially smooth surface of which some crude lettering is yet visible, indicating the last resting place of the gold-hunter who either lost his way or thought to make a short-cut to the diggings.

Wellton is a desert town 275 miles west of Phoenix, where a stop-over can be arranged and some one found who will undertake the drive. The road is an unusually attractive trail straight south over the desert, winding about through the pungent-smelling greasebush, mesquite, palo verde tree, and ironwood. On the right the Gila range keeps the pilgrim company. At a very picturesque bend in the range, in a big hollow lying to the right of the road at the base of the mountains, worn out by ancient storms and now somewhat overgrown with mesquite, the tanks may be found. An ideal spot for a camp. A few yards back from your camp site, in the very first rise of the granite from the sandy base, will be found the first hole, about ten feet in diameter and as many deep. About 150 feet up, on a shoulder worn by a very ancient water-way leading down from the pass, will be found the other, a shallow, dish-like spot beside a tremendous boulder, that was long ago dislodged by some earth tremor from the serrated ridge above. The scenery is grand and rugged and the climb to the top quite easy. Indeed, the trip offers splendid returns for the time expended, outside of the novelty of the quest. A fairly early start from Wellton will bring you to the spot in the forenoon, and the afternoon can be well employed in climbing the ridge and getting a few strange photographs, including a glorious sunset.

Trails Through the Golden West

Somewhere south of Wellton is supposed to lie the famous "Lost Mission," another monument to the indefatigable industry of Padre Kino. It is believed to have been built in the vicinity of where the Sonoita River plays out in the desert, and the records which the good padre left behind refer to it. An interesting exploration awaits some ambitious investigator with a disposition to make a friend of the desert. She is a harsh mistress, however, to those who take too much for granted. She also has a way of keeping her secrets from those who are unwilling to give the necessary hostages.

To the wanderer with an adventurous turn of mind there is an intensely interesting motor road from San Luis, Mexico, across the Colorado River from Yuma, extending easterly for about 400 miles over the desert, through the towns of Caborca and Altar and thence to Santa Ana on the Southern Pacific in Mexico. This road was built by ex-Governor Rodriguez, of Lower California, during the latest Mexican revolution, for the purpose of transporting troops. It passes through some of the most terrifying yet beautiful waste land I have ever seen. That Mexican desert is pitted with magnificent and fearsome extinct volcanic craters. The whole landscape, if such a term may be used, is composed of black sand, with miles and miles of coal-black lava escarpments rising from the desert from 100 to 4000 feet. Notwithstanding the rigorous possibilities of such a journey, it would be immensely worth while because of the absolute novelty of the experience. It is no trip to make with a single car, however, or with but one companion. But with a party of four in two cars (which

Imperial Valley and the Salton Sea

should be the minimum) it would yield great returns—different from anything else in the vast Southwest.

Continuing our journey westward: you probably have heard that ancient wheeze about the summer temperature of Yuma: how a soldier who had been stationed at that torrid post, having died and gone to hell, asked Satan's permission to return to Yuma for his blanket. But there are other points about Yuma that are really to her credit, two in particular. First, the remarkable accomplishments of the U. S. Reclamation Service in this place, in turning the waters of the Colorado River into a vast series of irrigating canals. Next, Yuma is a division point on the Southern Pacific, which permits the traveler to enter California by way of Carriso Gorge and the city of San Diego. Thence he can either take the Santa Fé route up the Pacific Coastline to Los Angeles, or he can motor across the Coast Range to El Centro and continue his journey west by rail or motor through the Colorado desert, now known as Imperial Valley, over a concrete road. He will make no mistake in either choice. But he *will* make a mistake if he fails to acquaint himself with Carriso Gorge. There is not, so far as I know, in the United States a 220-mile, seven-hour railway trip that offers such an inspiring combination of desert and mountain scenery as this Carriso Gorge route.

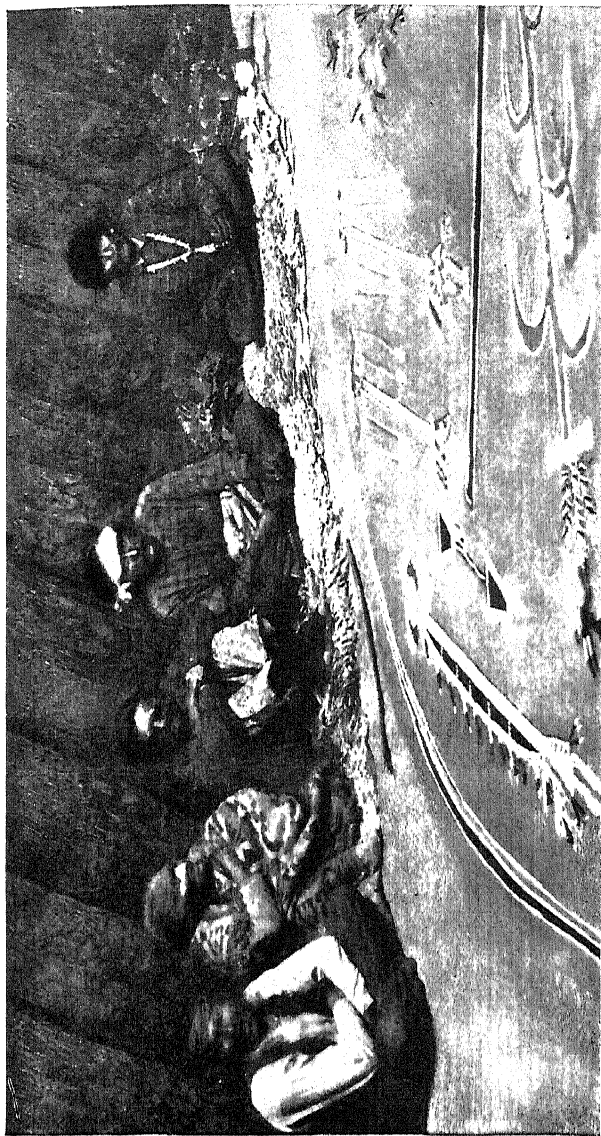
You should leave your Pullman berth at El Centro shortly after 5 A.M., and watch the gradual and steady rise of the train from the desert floor of Imperial Valley, 287 feet below sea-level, to a height 3600 feet above. This amazing railway runs practically on the sky-line at its highest point, 900 feet above the bottom of the

Trails Through the Golden West

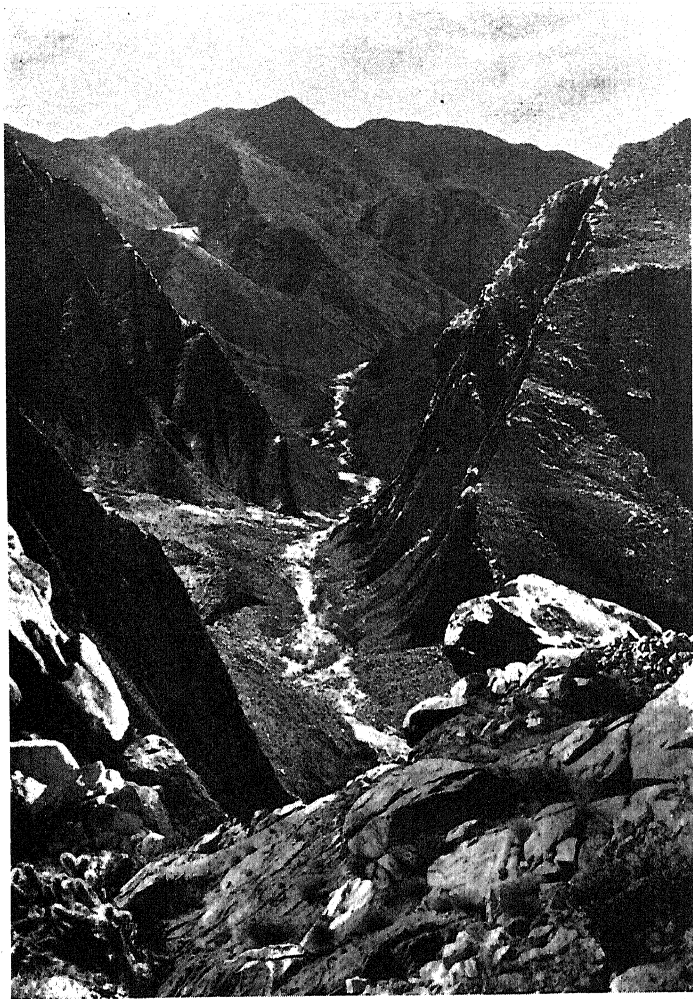
gorge itself, through which in the old days the pony express used to carry the mails. It follows the serpentine course of the crest of the range, overlooking the gorge, for eleven miles; and in order that the roadbed for these eleven miles might be properly anchored seventeen tunnels were bored through the solid granite, and numerous bridges and trestles were thrown across otherwise impossible canyons, where the road clings to the precipitous cliffs and rounds hair-raising points with a nonchalance that seems a little inconsistent with a construction cost of \$350,000 per mile for that eleven miles alone. A wondrously scenic and rugged trip which no traveler should miss.

He who elects to follow the desert route from Yuma west is not without his reward. It may not be known to him that the train is speeding over the bottom of a prehistoric inland sea, familiarly known in the days of our youth as the Colorado Desert, a dreaded wasteland lying below sea-level between the Coast Range and the Sierra. Irrigation has altered all that, however, and long ago the Colorado Desert changed its name to the Imperial Valley, with over 600,000 acres under cultivation, one of the greatest and most productive agricultural areas in the world, supporting a population of over 50,000. If you will observe the upper portion of the rocky escarpments rising several hundred feet above the level of the roadbed you will see the ancient water line, clearly marked, after the flight of thousands of years.

The basin occupied by the "Salton Sea"—a body of water 80 miles long by 20 wide and 100 feet deep be-



The sand painters of the Southwest create designs of amazing beauty and richness. For a canvas they use sand; their pigments are colored powders made of dry earth and sandstone.



Gabriel Moulin

San Diego, California, lies amidst picturesque hills and valleys. This view of Carriso Gorge, not far from San Diego, indicates the type of scenery that awaits the horseback rider and the hiker.

Imperial Valley and the Salton Sea

side which the train runs—was once the head of the Gulf of California, into which the Colorado River empties about 100 miles further south. In the course of time, the amount of silt deposited by the river formed a dyke clear across the Gulf which, eventually rising higher than the level of the water, created a vast inland sea; and this sea eventually, through evaporation, became a salt bed. In 1906, the old river went once more on the rampage, broke through the dyke which it had formed in previous centuries, and for two years poured its entire volume into the Salton Sea depression, before it was brought under control by the Southern Pacific Railway engineers, and finally diverted into the Gulf. It is only a question of time when this great lake will evaporate and return the rich soil at its bottom to the Imperial Valley farmers.

It may heighten the interest of your ride through Imperial Valley to know that you are passing through a vast hollow in the slopes of the Sierra Nevada, one of those tremendous prehistoric sinks into which scores of mountain streams, fed by the lofty glaciers and snow-fields of the High Sierra, flow and are absorbed. The Coast Range on your left rises to its highest altitude in the noble peaks of San Jacinto, 10,800 feet above sea-level; San Gorgonio, 11,485; and San Bernardino, 10,630 feet. There is a total lack of verdure on the desert slopes of the range, whereas the western or ocean slopes are forest-covered.

Passing through the little date-raising town of Indio in the Coachella Valley, you may see some odd-shaped stone figures near the station: life-like effigies of a mother

Trails Through the Golden West

and babe, goose and goslings, and so on. These peculiar formations were come upon a few years ago, during excavation work, and are estimated to be not less than 12,000 years old. They are a worth-while shot with your camera.

The Imperial Valley desert will not be at all like your preconceived ideas of desert land. Nothing here to resemble the Sahara of your school-geography days. And anyhow, they don't call it a desert any more, since it has yielded so bountifully to irrigation. What you will see, however, will be a vast extent of the creosote or "greasebush," Spanish bayonet, and cactus. And though the last thing you would think of here is the successful cultivation of fruits, vegetables, and alfalfa, fresh water has made that barren district blossom like the rose, in very truth, and it won't be many years before there will be no desert visible to the eye. It will all be under cultivation.

Death Valley—California's Somber Mystery

ONE of the strangest natural phenomena in the West is that the lowest and the highest spots in the United States are practically across the street from each other. Death Valley—280 feet below sea-level, lies shrouded in mirages and surrounded by extinct volcanoes, only seventy miles distant from Mount Whitney, the loftiest and most spectacular snow-crowned peak in the High Sierra: 14,500 feet above sea-level.

It would be difficult to imagine a more complete antithesis than has been created by the Sierra Nevada between the territory lying on its eastern slopes and that lying on its western. This magnificent mountain range, 430 miles long and from 40 to 80 miles wide, is the greatest in the United States, comprising nearly as much territory as the Italian, Swiss, and French Alps combined. A cross-section of its western slope would show (roughly) an elongated right-angled triangle with its inclined plane of from 30 to 70 miles in length extending to the Pacific Coast. Of the total area of this vast plane, constituting the Great Valley of California, more than one third, or nearly 3000 square miles, is

Trails Through the Golden West

less than 100 feet above the level of the sea. By the time the vapor-laden winds from the Pacific Ocean have rolled to the crest of the Sierra, 14,000 feet high, they become chilled and discharge their vapor, in either rain or snow, practically all of which descends on the western slopes of the range and is returned to the California lowlands in the form of mountain streams.

Looking eastward from the crest of the Sierra, however, there is no inclined plane. Generally speaking it is an extended cliff from 8000 to 11,000 feet in height, at the foot of which lie the vast sagebrush plains and alkaline deserts of the Great Basin region of Nevada and Utah, which extends as far east as Great Salt Lake and of which Death Valley is a part. Although these extensive desert plains lie from 3000 to 6000 feet above sea-level and are crisscrossed with mountain ranges from 10,000 to 13,000 feet in height, they are cut off from the friendly vapor-laden winds of the Pacific Ocean by the lofty Sierra, with the result that the streams that descend the eastern slope are absorbed in the alkaline sinks or lakes in which the Great Basin abounds and which are subject to constant evaporation.

If it had not been for the discovery, about fifty years ago, that these alkaline desert lakes contain an inexhaustible supply of borax, soda, and kindred products, it is quite possible that Death Valley might have remained *Death Valley* in fact, instead of becoming famous as one of the most salubrious, healthful, and interesting winter playgrounds on the Pacific Coast. It has two modern hotels and is accessible by both rail and motor roads from Los Angeles, a matter of 300 miles.

Death Valley—California's Somber Mystery

To those with an interest in geology it may be interesting to know that Death Valley is the sink of the Amargosa River, having got its start between fifteen and twenty millions of years ago, at the time when the Panamint and the Funeral Ranges, which today border the valley on the west and east with lofty hurdles of 10,000 and 7000 feet each, were just pushing their noses through the sand of the surrounding desert. A few millions of years later, it seems, this hook-shaped gorge, approximately 130 miles long by 6 to 14 wide, faulted, with the result that it was converted into an admirable drainage sink for the surrounding country, and in time this sink became a sizable lake. Then, as now, evaporation was a large factor and as the lake went dry from time to time, the chemical residuum left became the basis of the soda ash and borax for which Death Valley and all the depressions in that vast terrain have been commercially exploited for upwards of a half-century.

Before the curtain was dropped on this vast drama, the ocean flowed in and what is now known as the Great Basin became the bottom of the sea for a few millions of years. As if there were not sufficient antiquity in "fifteen to twenty millions of years" the geologist will point out to you today certain interbedded strata of rock in the Funeral Range, not far above the level of the lake that once filled Death Valley, which are believed to date back more than four hundred millions of years. After all, it is not so surprising that in the finals the old valley elected to remain permanently 280 feet below sea-level. Certain it is that in no other spot in the west-

Trails Through the Golden West

ern hemisphere may be found such a prodigal combination of highly colored mountain peaks, awe-inspiring gorges, death-dealing deserts, and alkali plains. Serpentine canyons in granite and marble, exquisitely eroded by prehistoric cloud-bursts and mountain torrents that ran dry millions of years ago; towering cliffs banded in rose and gold and bronze green that once were part of the bottom of the sea; warm granites shot through with the menacing blacks and browns of ancient lava-flows; the grays and whites of quartz and limestone; winding streams of alkali so lovely to the eye that you will find it impossible to credit their deadliness; daintily modeled sand-dunes, the delicate tracery of which is changed hourly by the variation of the wind: gold and silver-lead mining districts of fabulous value, where the grizzled prospector with his diminutive burro may still be encountered in his search for some "lost mine."

To have negotiated the mountain passes that separate Death Valley from the crowded highways connecting the municipalities by which it is comparatively hemmed in; to have discovered from the mile-high crest of the Panamint Range the outlines of a crater practically filling the width of the valley itself, through which you may have driven a dozen times without appreciating its character; to have witnessed the birth of a mirage so disconcerting as to make you believe you had lost your way; to have watched the progress of a sand-storm, knowing you were out of its path; these are experiences that are to be enjoyed only in one

Death Valley—California's Somber Mystery

spot—Death Valley—and they are richly worth traveling far to see.

Here is one place utterly immune to the lily-painting and gold-gilding tendencies of the hand of man. He may strive as he will for the civilizing touch—his limit consists in the construction of roads and hotels where the visitor may be made thoroughly comfortable. This has been well done. But the valley, fortunately, remains just as it probably was ten thousand years ago and as it will be, doubtless, ten thousand years hence. Apparently menacing yet beautiful and winning, with all the infinite glory of shifting cloud and dazzling sunshine touching flame-tinted peaks and ranges, glorious cliffs of brilliant pink sandstone, against whose foot are lodged huge banks of powdery clay tinted with barbaric gold; with volcanic buttes striped black and yellow, rising from the plain like threatening jungle animals; Death Valley sits at the gate like some inscrutable goddess, at the foot of the last descent of Emigrant Pass, where the dark lava-flows of the Panamints merge with the beaten gold of the sand-dunes—to welcome and to warn. You can almost hear her warning accents: *Nemo me impune lacessit* (Nobody injures me with impunity).

Commercial enterprise may build gold-camps, boom towns, and railroads, may drill wells and mine-shafts and lay out airports for the aviators. All of these Death Valley will assimilate; and in exchange she will offer the traveler the mirage, the cactus, the greasebush, the yucca palm, the chuckwalla, and a riot of spring flowers—and make him like them all. He will like them

Trails Through the Golden West

because they astonish him so much, and because they are so different from any other kind of scenery he has ever looked on. And meanwhile she will continue to hypnotize the prospector with her lure of gold, of which untold riches are yet to be taken from her mountainsides and her hidden canyons.

Transportation here has been reduced to simplicity. During the winter season the Southern Pacific runs a sleeper two or three times a week to the little town of Lone Pine in the Owens Valley at the foot of Mount Whitney. At Lone Pine the traveler will be met by a motor-car from Stovepipe Wells Hotel, where he will arrive in time for luncheon next day. The Union Pacific runs a similar train, the traveler being met at Death Valley Junction at the southern end, arriving at Furnace Creek Inn by motor, also in time for luncheon. Despite the advantages of these railway connections, the traveler who is not rushed for time will do well to consider the motor-car trip by daylight. Varied and highly interesting scenery is spread out before your eyes as you ride over the excellent roads of the famous Mojave Desert. There is a regular daily motor-coach connection with Lone Pine—a very comfortable ride of 220 miles. On the other hand, if you drive your own car you will find the roads good, easy to follow, and well-posted by the Automobile Club of Los Angeles; from this club you can obtain the latest information. Incidentally, it has posted Death Valley as well. You couldn't lose yourself if you tried.

The preferable way for the visitor to see Death Valley properly is to enter it from the north end and

Death Valley—California's Somber Mystery

leave by the south, or vice versa. This can be done only if he motors and is in control of his own time. The two hotels in the valley—Stovepipe Wells at the northern end and Furnace Creek Inn at the southern—specialize in the attractions of their respective localities. There is such a wide diversity between the scenic values of each end, however, that unless the traveler avails himself of both he simply “short-changes” himself.

A word concerning nomenclature. The names Stovepipe Wells and Furnace Creek Inn always seem to connote to the visitor something different from their real meaning. “Stovepipe Wells” derives from the fact that for many years the only source of water supply in that section of the valley was a well dug by the early prospectors, about two miles from the present location of the hotel of that name. It contained then, and it still contains, very brackish water; but it was none the less a life-saver. A stovepipe was stuck in the sand by its side as a marker, since the trail to it was covered most of the time by wind-blown sand. A few feet from it half-buried in the sand, is an old dug-out constructed of mud-mortar and whiskey bottles, which served as a temporary haven for passing prospectors and cheered them on their way. Furnace Creek Inn takes its name from the fact that in the late '50's some Mexican miners built reduction furnaces in that location; the phrase has no reference to summer heat.

One can put in a week to ten days in the Valley seeing what is to be seen at both ends and not waste an hour. Indeed, he can scarcely do it thoroughly in less.

Trails Through the Golden West

It is the last place in the world to hurry through. Don't overlook the fact that Death Valley is below sea-level—a fact that will be forced on you if you overdo, even though the mercury is quite normal. It is not wise to attempt the run from Los Angeles to the Valley in one day. You will find that the Los Angeles motorists don't do it. A run of 300-odd miles is a trifle too much for one day through desert country; it would mean that you would reach the Valley in the dark—if, indeed, you got there at all—and you would be “all in” the next day. Assuming that you select the westerly route, you leave Los Angeles by way of San Fernando and travel through picturesque Mint Canyon to Mojave Junction, where a good luncheon may be gotten at the railway station; the entire trip is over concrete highway. Then north from Mojave over the desert—a splendid road—and through Red Rock Canyon, where you'll want to stop for a bit of photography and a sight of some beautiful and bizarre color effects in erosion, particularly “the lady at the organ” at the summit of the cliffs on the left. Before reaching Little Lake, about mid-afternoon, note particularly a vast field of unbroken lava, stretching away eastward as far as the eye can see, and terminating in a tremendous lateral cliff from 100 to 150 feet high, along which the road runs for several miles. This gigantic flow is so all-inclusive that it is become part of the landscape and if you are not looking for it you may miss it altogether. If you will follow up with your eye the course of the flow northward, to the right of the road, you will see the extinct volcano itself and the broken lip of the

Death Valley—California's Somber Mystery

crater over which that Vesuvian discharge descended to the plain below. I have never come across any mention of this tremendous volcanic outburst—sufficient to have buried a town—and it was by sheer accident that I noticed it. It is quite characteristic of the Mojave Desert, which is dotted with the craters of extinct volcanoes—a fitting introduction to Death Valley. About 5 P.M. you come to the end of your day's trip, in the little old mining town of Lone Pine, having done 220 miles—quite enough for one day's travel.

Immediately opposite, pushing its mighty crest 14,500 feet into the air, looms Mount Whitney—snow-crowned monarch of the High Sierra: a noble and inspiring sight, less than thirty miles distant. Close at hand are the "ruins" of a mountain range, running parallel to the Sierra, known as the Alabama Range: pronounced by geologists one of the most ancient landmarks in the whole world, antedating the High Sierra by millions upon millions of years. Through the passing eons it underwent steady disintegration as the Sierra steadily rose above it.

What is even more important just now, however, is the attractive, homelike little Hotel Dow where you are going to spend the night, taking your meals in a restaurant across the way. It may be you will encounter a belted, spurred, and fully armed cowboy on the street—a reincarnation, as it were. Never mind—he's just a movie actor. Lone Pine is a favorite "location" with the Hollywood folk. You will see stuff for sale in the Lone Pine stores—mining, riding, and cattle equipment—that you thought went out of style fifty

Trails Through the Golden West

years ago. But no, the real folk of that quiet little town in Owens Valley are much the same as they were years ago, while the town itself, clothed in its ancient cottonwoods, under the shadow of "Old Whit," has grown as mellow as a big red apple.

Right after breakfast the next morning take a camera shot at Mount Whitney, with his gleaming summit scintillating in the refulgent rays of the rising sun. You are off then for an eighty-mile spin over the Argus and the Panamint Ranges, reaching Stovepipe Wells Hotel, on the floor of the Valley at the foot of Townsend Pass, in time for luncheon. This is the historic trail, reaching its highest elevation at 5000 feet, over which the surviving Jayhawkers of '49 found their way out of Death Valley, enroute for the California goldfields, leaving behind them the bones of their less fortunate companions; we shall tell more of this later. The first half of the run, about forty miles, follows the eastern shore of Owens Lake, a few miles south of Lone Pine. Only, it isn't a lake any more. It is one of those bottomless chemical sinks from which quantities of soda are mined today, into which the Owens River, one of those glorious streams from the summit of the Sierra, used to empty before the city of Los Angeles took the river over for a much-needed water supply. You may see the huge pipe through which it flows winding its sinuous way along the slopes to which it is anchored, a few hundred feet above the level of the highroad.

Passing through an extensive growth of Joshua trees or yucca palm, and breasting a rise, you will see the

Death Valley—California's Somber Mystery

little mining town of Darwin on the desert, almost like a mirage. This time, however, it is real, and you will stop here long enough to look over your gasoline and water tanks. You would scarcely credit the reports of the millions of dollars' worth of silver-lead that Darwin has given the world. Today, however, the little town is at a standstill and the motorist is its best customer. The road enters the Argus range through a natural "wash" or canyon, turns and twists and climbs to the pass and down the other side into the Panamint Valley, across a *playa* or dry lake, from which your real climb starts. Here is where a man had a vision and built a roadway, a few years ago, in order that Death Valley's northern end might be opened to the public. He has done a mighty good job; the Eichbaum Toll Road, thirty-four miles long, is all the monument he needs.

Death Valley—In the Shadow of Mt. Whitney

ARRIVED at Stovepipe Wells, you will find that the trip up the winding road through the famous Emigrant Pass to the summit of the Panamint range affords one of the most inspiring views that you have yet seen in the Southwest. From this lofty lookout a magnificent sweep of the snow-capped High Sierra, sixty miles to the west, fills the eye almost as completely as if it were within a dozen miles of you. Mount Whitney towers majestically above its neighboring peaks. At your feet, more than a mile below, lies Death Valley itself—a mere dish, as it were, filled with glistening sand, from which the sun's rays are reflected with a sharpness evident even at that great height. As you gaze, the sand-dunes below take form and you may descry the road leading across the valley to the heights of the Funeral Range to the east. Words are inadequate here.

Amazing Grotto Canyon awaits you with its tortuous granite gorge leading two miles back into the very heart of the Panamints to the point of origin—a fifty-foot well, some fifteen feet in diameter, worn out of

Death Valley—In the Shadow of Mt. Whitney

the rock by a prehistoric waterfall, at whose crest is lodged a huge boulder. Spectacular Titus Canyon, too, cut 2000 feet through the granite range, with a gravelly roadway on the desert level forty feet wide. It is nine miles long and its walls have been polished smooth by the sand-laden cataracts of ages. Great boulders have been lodged by cloudbursts in holes in the walls fifty feet above your head.

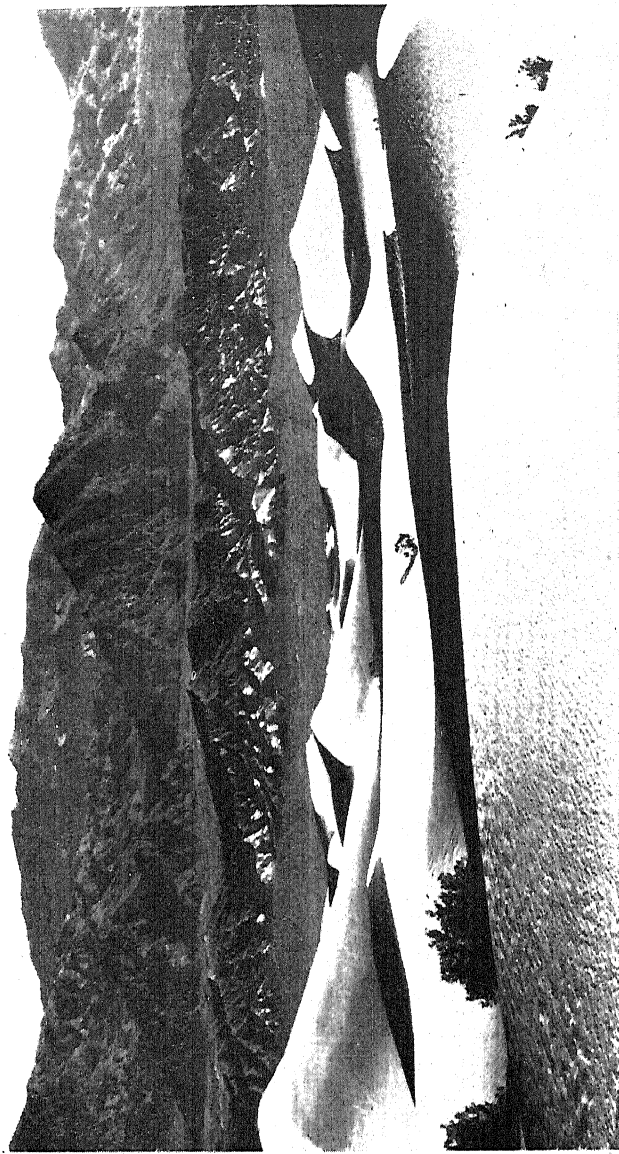
You surely won't miss visiting "Death Valley Scotty's" two-million-dollar castle in the Grapevine Range, forty miles up the desert from Stovepipe Wells: the strangest fancy that any man ever indulged, rivaling Beckford's "Vathek." It is a two-story Spanish creation, now in its third stage. That is to say, in the course of six years it has been almost completed twice, then pulled down because something didn't suit, and started all over again. No, Scotty isn't crazy—as a matter of fact, he spends most of his time in his rough board shack, sleeps on an army cot, and does his own cooking. That's what he loves. The castle is his plaything and a marvelous one at that, with a carillon tower; a ten-thousand-dollar pipe organ; beautifully carved furniture covered with leather especially imported from Spain; a priceless mosaic fountain of semi-precious stones in a recess in the living-room wall, over which the water flows in a filmy cataract, gorgeously tiled bathrooms; exquisitely carved redwood panelings throughout the house; wrought-iron grillwork in old Spanish designs that would drive an antiquary mad with envy; open Oriental conduits in the cellar, filled with running spring water to keep

Trails Through the Golden West

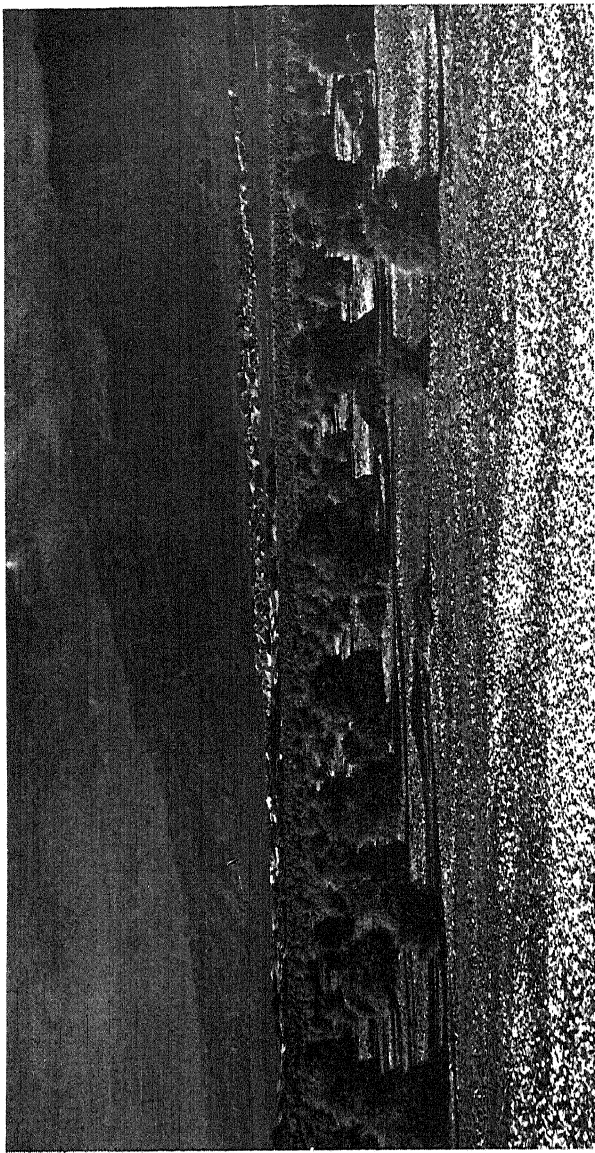
the place cool in hot weather; and a beautiful vine-covered patio, open-roofed and tiled with terra cotta brought from Spain. Most significant of all is a steel tube through the wall, beside the front door, terminating in a thick, concave steel cap on the outside, especially curved to cover effectively any intruder standing at the doorway. There's a lot more to tell about Scotty but I shall tell it elsewhere. This will suffice to explain the "comether" that hovers about Death Valley Ranch.

When at Scotty's you are only seven miles from Ubehebe Crater, one of the most spectacular extinct volcanoes in the Southwest, with the brilliant marks of the fire still visible on its scarred walls. Ubehebe is 800 feet deep by 800 feet in diameter at the bottom, over a mile in diameter at the top, and exceeding three miles in circumference. The crater is set in the top of one of the many hills common at the northern end of the Panamint Range, 5700 feet above sea-level. You can drive your car almost to the very edge of it. But beware of the boisterous gale characteristic of the spot, and make your approach with care; a human body offers little resistance to that husky breeze, and you might easily be carried off your feet. The four-feet-on-the-level of black, volcanic sand spread over the desert and mountain-sides for miles around is an eloquent reminder of what happened on the day Ubehebe blew the lid off, about five hundred years ago. By this time you will have spent at least four days at Stovepipe Wells.

There are several interesting features of the valley



The sand dunes of Death Valley resemble the waves of the sea. Their curves and valleys are constantly being remodeled by the wind.



The so-called "Devil's Corn Field" in Death Valley is covered with desert mesquite which has been twisted by the wind and banked by sand so that it resembles corn shocks.

Death Valley—In the Shadow of Mt. Whitney

proper that Stovepipe Wells and Furnace Creek have in common. One is the beautiful and ever-changing sand dunes. To see them at sunrise and sunset is to build an ineffaceable memory for which you will always be grateful. In this vast expanse the vagaries of the wind are extremely freakish. You visit Death Valley one year and have your attention called to a mountainous dune, etched into a thousand arabesques by the wind—you return the next year to find that the wind has changed its mind, picked up the dune, and carried it off, leaving in its place a stark, tall, denuded yucca-palm trunk, around which it had originally built the big dune. A similar process holds with the innumerable bunches of greasebush and sagebrush nearby, looking like nothing so much as a vast field of stacked cornstalks, around which the sand is insidiously gathering and which it will eventually bury. Running true to type here as elsewhere, it is called the "Devil's Cornfield," and it looks the name. One interesting feature of these stacked "cornstalks" is the refuge they offer the little kangaroo rat whose fairy-like trails may be seen in all directions, especially in the early morning hours before they are covered by wind-blown sand. These little folk, along with the fieldmice, do their rollicking at night, with a marked preference for the full of the moon. Sometimes the imprint of an owl's talons, with every indication of a scuffle, tells the story of a tragedy as clearly as though it had been written.

Another satanic dominion is the "Devil's Golf Course" lying about midway between the two hotels, which are separated by only twenty-five miles. This is a

Trails Through the Golden West

strange sight: a vast expanse of white, crystallized chunks of crude salt, left as the result of evaporation from the chemically impregnated liquid sink beneath and resembling a Polar ice-field forced upwards by pressure ridges. This deposit has the consistency of rock salt, and enough has been broken up and smoothed out to make a respectable motor highway, so that you can inspect it closely. Incidentally, these tremendous sinks have been plumbed to a depth of 1000 feet.

On the way down the valley you will pass the grave of old Jimmy Dayton, for many years a driver of one of the great "Twenty-Mule-Team Borax" transportation wagons, long before the advent of the railroad. In those days two men always accompanied the team of twenty mules which hauled the load 150 miles south over the Mojave Desert. For some unknown reason, Jimmy started unaccompanied on what proved to be his last trip. It is supposed he had a touch of sun that caused him to fall from the driver's seat. As his brakes were on at the time, the long team of mules was stalled. Result—death claimed Jimmy and his twenty mules on the spot. It was several days before they were discovered. Jimmy was then buried a few yards off the road, and a rough and crudely inscribed board placed at the head of his grave. His real monument, however, was the skulls of the twenty mules, which were ranged on either side of the mound. Thus marked, the grave lay undisturbed for many years until Death Valley became accessible to the public. Then, one by one, the mules' skulls disappeared.

The truth must be told: the souvenir-hunter was on

Death Valley—In the Shadow of Mt. Whitney

the job. When all the skulls were gone, a former associate placed over the headboard two of the broad iron tires with which the old borax wagon-wheels were fitted for desert work. When I first visited Death Valley, several years ago, the tires were still there. Two years later, however, they too were gone, though they weighed several hundred pounds each. Doubtless they are now adorning the watch chains of some typical tourists for whom the temptation to accumulate a memento was too great. I am glad to be able to say, however, that the headboard was still in place on my last visit. Let us hope it will remain undisturbed.

Flowing down through the middle of the valley is a sparkling brook, three to six feet wide, called Salt River. You will cross it two or three times, and every time you look at it it will make you thirsty. But that is about as far as you had better go—a mouthful would take the skin off your tongue. Its saturated alkaline content seems to have contributed to a remarkable phenomenon: the brook is filled with tiny fish about as long as your finger. They are as shy as trout, but they can be netted. They live on a peculiar grass, something like watercress, that grows plentifully along the edge of the stream and seems to thrive in spite of its unfavorable location. These fish are somewhat of an anomaly, for they can no more be classed as salt-water fish than they can as fresh-water—what they live in is a highly alkaline solution, a few drops of which would lick the paint off your car; in comparison, sea-water is palatable.

A short distance north of Furnace Creek Inn lies

Trails Through the Golden West

Furnace Creek Ranch. For many years stately palms have been cultivated in this lovely green spot, which is well irrigated by Furnace Creek itself, piped down from a never-failing spring in the Funeral Mountains to the east. The lush growth of greenery in this place is as anomalous as the alkali minnows. Standing in front of the ranch—mute evidence of superseded greatness—is one of the big borax wagons, with its indispensable tail-ender, the water-tank, such as Jimmy Dayton drove in the old days. The combination is worth a camera shot.

When we arrive at Furnace Creek Inn, the first sight to claim our attention must be Golden Canyon, a few miles south—a gorge hewn out of the Black Mountains and so brilliant in its varied coloring that we shall almost call for our tinted glasses. One would never suspect that the black-and-brown-striped cliffs of this mountain range could harbor such a barrage of color. The canyon winds into the heart of the hills for about a mile, the cliffs on either side looking as though they had been drenched with golden tints—pinks, browns, mauves, bright yellows, deep reds succeeding each other in a bewildering variety of strata. It is said that these amazing colors were produced by chemical deposits in the ancient days when these resplendent cliffs were part of the sea-bottom. The gorgeous walls give the effect of an endless Persian rug, with gold as the prevailing color.

Gower's Gulch beckons up the Furnace Creek wash. The road, which leads up the side of an apparently insignificant butte beside the highway, gives no hint of the wonderful view awaiting you at the top. From

Death Valley—In the Shadow of Mt. Whitney

the look-off there is an abrupt drop of a few hundred feet into a sort of amphitheater, whose walls spread upward and outward like a flaming fan. Here may be seen the effects of the prehistoric chemical deposits, only in more regular formation. Cloudbursts have corrugated these colorful walls until they glitter and gleam with blinding brilliance according to the angle of the sun's rays. These multicolored slopes consist entirely of powdered clay, in which the careless traveler would sink almost to his knees at every step. They are on exhibition only and are not to be trampled upon. There is at the right a narrow roadway, however, leading into the canyon, down which, if you are not driving too large a car and your brakes are all right, you might venture. At the bottom it follows a narrow, winding course down to an old mine where there is a chance to turn around for the return. It is not to be undertaken with a big car, however; the angles are too sharp and if you should happen to bump into one of those dry, clayey walls you might subject yourself to a borax-dust bath.

Directly opposite Gower's Gulch, to the west on the far side of the valley, Telescope Peak, snow-crowned monarch of the Panamints, rears his lofty crest 11,045 feet above sea-level. To the mountain-climber Telescope Peak offers a real hike. About half the time, however, he will be crawling on his hands and knees to keep from being blown off the ridge. And don't overlook the Salt Pools on the floor of the valley still farther south. This is the one spot in that vast deposit where there is a natural opening like an air-hole in the

Trails Through the Golden West

ice. The color of the water is a bright blue, and the crystallization of the virginal white salt around the edges is as dainty as Jack Frost's etchings on the window-pane in midwinter. This is a rare spot to visit. The water is so saturated with the saline deposit that it will float an egg. Plunge your hand into it, and inside of a few seconds it will be covered with salt from the swift evaporation.

The last and most spectacular scene in this section is "Dante's View"—a peak in the Black Mountains over a mile above the valley. Here again it is almost profanation to attempt a description. Adjectives are futile. The motor road rises by gentle stages to the very summit of the range and leads out on a spur where it seems that the whole world lies at your feet. This is the place for your final memories of Death Valley.

If you have a few more days to spend at the Furnace Creek Inn there are several other delightful trips that you can take. One day can be spent in going to Rhyolite, the "ghost city," where the celebrated Bullfrog gold-mine was discovered. Once the place had a population of more than ten thousand, with a "Golden Street," buildings of steel and stone, and a railroad. If ever there was a city in the gold-mining history of our West that was considered to be built for perpetuity, it was Rhyolite. It was one of the high, wide, and handsome towns where everybody had money to burn. But now "the lion and the lizard keep" it—even the "wild ass" is not wanting, for the descendants of the burros of that golden age are still wandering over

Death Valley—In the Shadow of Mt. Whitney
the desert, pathetic reminders of that unquenchable optimism of the prospector: "Thar's gold in them thar hills."

When you come to decide what route you will choose for your departure from Death Valley, bear in mind that the scenery on the motor roads to the east and south is hardly up to that of the Panamints to the west; and also that—especially in the mountains—the same road that you came in by may yield an entirely new set of views when you travel it in the other direction. But there is one road which, if it is in good shape, will take you through some brand-new and interesting country—the trip through the Panamint Valley southward.

The road leaves Stovepipe Wells via Emigrant Canyon, rising to the summit of the pass over Skidoo Mountain, and down into Panamint Valley through Wildrose Canyon. It is a fascinating trip. Before the building of the Eichbaum toll road, this was the regular gateway into Death Valley from either direction. They can tell you at Stovepipe Wells whether the road is in good condition.

The highway through Panamint Valley has for many years been the only connection from the south with Darwin and the Owens Valley country to the north. It is full of historical interest. Here are the deserted mining towns of Harrisburg and Ballarat, where "Shorty" Harris made his first pile, deserting those diggings for the famous strike at the Bullfrog Hills near Rhyolite, which he sold for the magnificent sum of \$400. It was out of the Bullfrog strike that Charles

Trails Through the Golden West

M. Schwab, the steel magnate, took a cool million before the vein ran out. Shorty never recovered from the shock. His old 'dobe shack may still be seen at Ballarat, and a street full of buildings that you would not suspect had been deserted for years. The place looks even more "alive" than Rhyolite does.

The road crosses the Slate Range a few miles south—a rough but perfectly safe climb of about three-quarters of an hour—and enters the little town of Trona beside that great dry sink, Searles Lake. Here may be seen one of the largest crude-soda converting and refining outfits in the world, with its railway running over the encrusted surface of the lake to those "holes in the ice" where the product is "mined" in liquid form. Two mammoth plants are kept running night and day. There is no hotel at Trona, but there is a good restaurant, and it is a comparatively short drive to Randsburg, a hustling little mining town farther south, where fairly good hotel service is available. This is a half-day's run from Los Angeles.

Before leaving the vicinity of Trona, there is what might be termed an imperative visit to be paid to the Pinnacles, a most interesting freak rock formation at the end of Searles Lake, fifteen miles south. Though generally overlooked by the traveler, it is well worth while and lies on your way home. This dry lake, consisting of sodium carbonate, was over 600 feet deep in ancient times, filling the northern extent of Panamint Valley and hundreds of square miles southward. In fact, that whole terrain upon which Trona and its vicinity are located was formerly under water. On what was then

Death Valley—In the Shadow of Mt. Whitney

the bottom of the lake, beneath what are now the Pinnacles, fresh-water springs were formed, containing calcium salts in solution. When these salts came in contact with the sodium carbonate of the lake, a deposit of lime rock resulted which, in the course of the centuries, extended to the surface.

Thousands of years of evaporation following, the bottom of the lake at that point became the present level of the land, from which these eroded pinnacles rise today: a vast assemblage of grotesquely carved gargoyles, grinning, grimacing, and sinister. Dragon, gnome, and leering face tower over the plain, from 100 to 150 feet high, like an army of hobgoblins. You will see hooded monks and casqued warriors in ancient armor and cloaks; hunchbacks; evil, mis-shapen effigies of humans and animals; every variety of nightmare imaginable. And curiously, the nearer you approach, the more life-like the figures appear. It is as if the work had been done by a maniac artist who left no line neglected that would contribute to a devilish ensemble.

You will see these pinnacles from Trona, hundreds of them, marching like a ghostly procession over the desert. They cannot, however, be approached from that point, and they are farther away than they look. Follow the highway which, about two miles beyond Trona crosses the Southern Pacific tracks, first on the left and again on the right. Then you proceed for about ten miles to a spot where the railway crosses the road for the third time and to the right. A few miles beyond this last crossing, take the first road to

Trails Through the Golden West

the left and it will lead you within a few hundred yards of the spot. This last distance you will drive over the desert—there is no road. Be sure to take plenty of photographic film with you and an extra tire or two; that desert sand is volcanic and flinty, and not to be trusted. If you find it convenient to camp there overnight, it will be well worth while. Sunset and sunrise among that aggregation of rocky freaks will be a bit different from anything you will have ever seen.

Death Valley—Its History

IT WOULD hardly seem necessary to emphasize the fact that a below-sea-level resort is no place for a summer vacation. You will not find either of the hotels open after May 1st. If you were to undertake a motor trip through the valley in July or August, it is quite possible that your tires would melt and your tubes explode; what might happen to you personally is vain speculation—you might survive and you might not. If there should happen to be any lack of water, you will certainly collapse. But because this book is intended to encourage travel, not to frighten folk away, I hasten to add that Death Valley from November 1st to May 1st is just as delightful and attractive as it is unpleasant in midsummer. During the latter season the mercury has been known to register a maximum of 160 degrees, while 130 degrees is the ordinary thing except at midnight when the air “cools off” to 120. In August, the heat is so great that a piece of rock will scorch the hand like a red-hot coal. A handkerchief dipped in water will dry in the sun in one and one-half seconds. Meat slaughtered at night and cooked

Trails Through the Golden West

immediately will spoil before morning. The fresh-water supply, which is piped from a mountain spring to Furnace Creek Ranch on the floor of the valley, issues from the spigot at a temperature of 110 degrees.

When, in the good old days, the foreman of the ranch started to prepare his bacon and eggs for breakfast—well, the records don't say anything about the bacon, but what he did with his eggs was to bury them for ten minutes in the sand and he had 'em the way he liked 'em: hard-boiled. That is a fact. Another fact is that the hens were kept sitting on their nests, not for the purpose of incubating the eggs but to prevent them from being cooked in advance. In other words, the eggs were cooler under the hen than under the sun. If a hen deserted her nest for two hours, her eggs were ruined. Alfalfa cut in the field became cured in an hour and a half. Corrals were equipped with shower baths, and without the frequent use of these the livestock could not have survived the summer. Chickens, too, would stand waiting to be hosed off. The corrals were also fitted with corrugated iron fences to protect the cattle from the blistering winds of the desert. Hawks and sparrows, in company, have been known to seek the sliver of shade provided by a fence-post: the lion and the lamb lying down together with a vengeance. Practically all work was done at night, there being a distinct preference for 120 degrees as against 130.

The average rainfall in Death Valley has never exceeded two inches in a year, and it is a common thing

Death Valley—Its History

for six months to pass without any at all. The average moisture content is less than one percent and water becomes almost as volatile as gasoline. The only possible comfort in such frightful circumstances is obtained through evaporation. For instance wrap a water-soaked piece of burlap or blanket around a jug of water taken from the Furnace Spring pipe-line and you will reduce the temperature of the water from 110 to 70 degrees. But in the old days white men, even with expert knowledge of general conditions, could not survive such withering heat; they slept in bath-tubs filled with water, their heads in slings to prevent them from drowning, and the work was done by Indians under a white foreman. During the third year three foremen succumbed; their graves, back of the ranch, do not form a part of the sightseer's program.

Not all midsummer tragedies in the valley are due to lack of water. The glare of the sun is as wicked as the high temperature. More than one man has been found dead with a half-filled canteen of water on him. It would appear that the human system cannot, even with plenty of drinking water, absorb so much moisture as the hot and dry air will draw out through the pores. There is neither damp nor dry rot in this place. After death, everything becomes mummified, including both animal and vegetable life. Why a ranch in such a fearsome place as this, you ask? To furnish supplies to the old Harmony Borax miners in various camps throughout the valley. That was many years ago. Today they mine the borax up the slopes of the Amargosa Mountains, surrounding the valley, at a comfortable

Trails Through the Golden West

living altitude; and, while the ranch is kept in good condition as an object of interest to the visitor, it also provides a nine-hole golf course and produces dates and fresh vegetables for the hotel guests.

From start to finish Death Valley has been about as well advertised as any section of the United States, though for all its advertising the number of its visitors has been ridiculously small until the last four or five years; during this recent period considerable progress has been made in building good roads for automobiles. The valley received its first real publicity at the time of its discovery, in 1849, by the lost emigrant train of Middle Westerners, known as the Jayhawkers, who stumbled into it, in search of a short cut from Salt Lake City to the California goldfields. So far as is known, these were the first white persons to enter the Valley, and their "discovery" was not by intent, nor was it exactly successful. Out of the forty-one men, women, and children who composed the party, over one-third left their bones on the floor of the valley. Hence the name that was given to the place. Who was responsible for naming it has been a moot question for many years. The credit is now generally given to William L. Manly, one of the leaders of the ill-fated expedition. However it may have happened, it certainly was a case of giving a dog a bad name—a name which it has taken Death Valley three-quarters of a century to live down.

This tragic expedition entered the valley through one of the canyons of the Funeral Range of the Amargosa Mountains to the east. They slung their

Death Valley—Its History

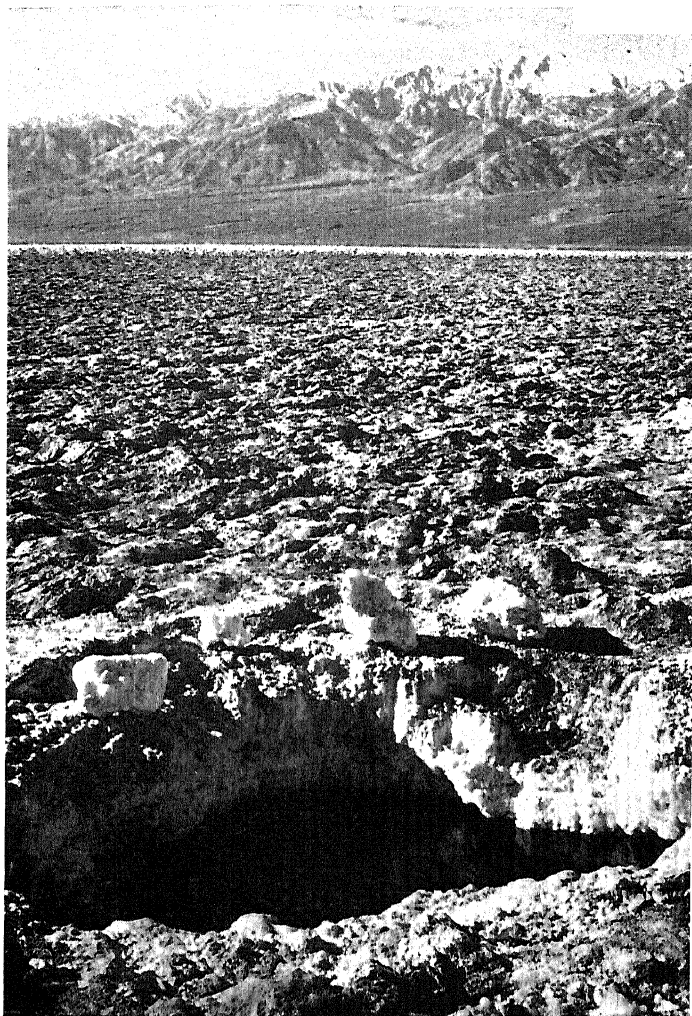
oxen, wagons, and supplies down over the cliffs by means of ropes to the sands below. But down there only humans escaped ultimately—the oxen were butchered. It was not that they suffered from the heat, for it was December when they entered the place; it was rather that they were—both human beings and animals—so terribly reduced in vitality from hunger and thirst that they could not climb even the negotiable passes in the Panamints to the west. It appeared that all were doomed to die in their tracks. But eventually two men—Manly and John Rogers—found their way out afoot up Emigrant Wash, to the summit of what is now known as Townsend Pass, and down into Panamint Valley, over the Mojave Desert, through the San Gabriel Mountains and into San Fernando Valley—200 miles. Here they found help, stayed long enough to recover their strength, and then returned for those who had been left behind. From this terrible experience have been woven a number of inspiring western sagas which have never needed any exaggeration or elaboration; the simple facts were enough. The full story has no place here, but it is worth the attention of any one interested in learning something about the characteristics—physical, mental and spiritual—that typified the indomitable generation that preceded our great transcontinental railway systems in the winning of the West.

Death Valley's most prominent and up-to-date press agent is Walter Scott, the redoubtable "Scotty" whose two-million-dollar-castle in the Grapevine Mountains has already been described briefly. For more than a quarter of a century he has been credited with owning

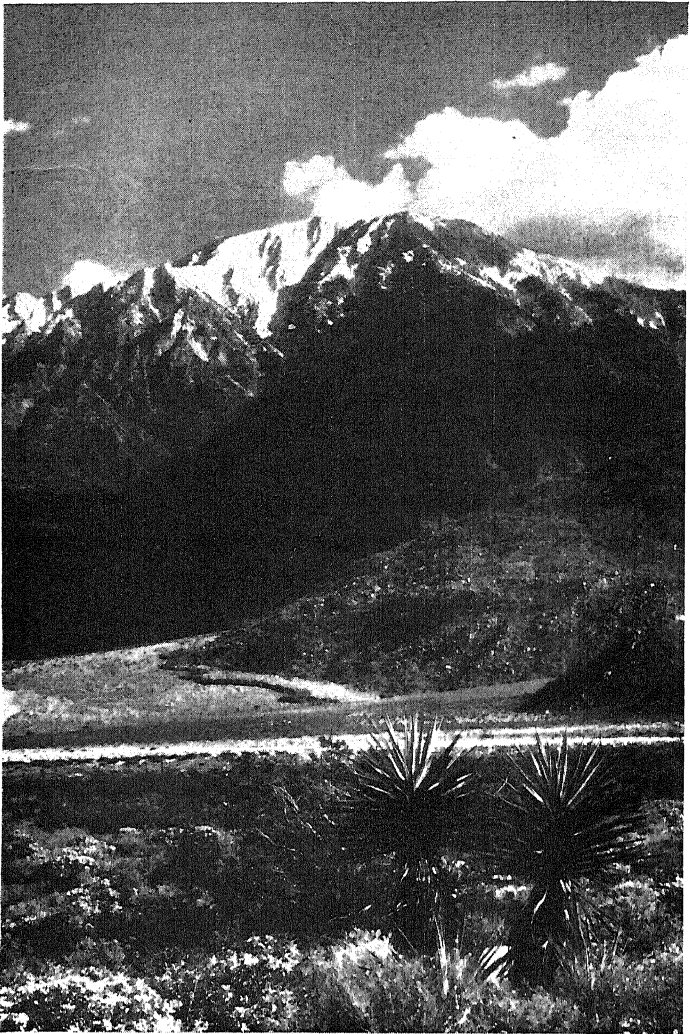
Trails Through the Golden West

an inexhaustible and secret gold-mine. Scotty has a millionaire partner in Chicago who came to Death Valley many moons ago in search of health. Scotty took him in hand, and the man's recovery followed swiftly. Thus was created a Damon and Pythias friendship which has stood the test of years. Some folk regard Scotty as more or less of a mountebank, but he is not to be dismissed so easily—though he doesn't care much what people think of him or of what he does. He has had a most interesting career for a man who was once regarded as a "desert-rat." Scotty was born in Virginia some fifty-five or sixty years ago. In the '90's he came to Nevada as a cowboy in the employ of Governor Sparks. As a dead shot and a good rider he joined Buffalo Bill's Wild West in its early days and went around the world with that eminent showman, from whom he learned the value of publicity and for whom he has always felt a regard very close to hero-worship.

Scotty was in on the Tonopah gold-strike and was a well-known figure in and around Goldfield, where he is supposed to have got his financial start. At any rate his first public exploit was to journey from Goldfield to Los Angeles, where he threw money all over the town and particularly in the cafés, until the police had to interfere to keep the streets clear. The more congested they became, the higher Scotty's spirits rose. Of course, the story of the secret gold-mine followed, which also pleased Scotty, although he never either confirmed or denied it seriously. He always has



On the Devil's Golf Course in Death Valley the entire surface of the ground is crystalline salt, broken up into solid slabs.



One of the most impressive mountains in California, San Jacinto rises above the floor of the desert in a sheer wall of stone almost two miles high.

Death Valley—Its History

a "Yes" ready for some questions and an equally swift "No" for others.

Scotty's next move, in April, 1907, was to charter a Santa Fé train from Los Angeles to New York, paying \$10,000 for it, which he paid down in cash when the deal was consummated. He wanted to see how quickly he could get to New York and back. The trip east was made in forty-five hours—an unbroken record. His return was leisurely—he had got all the publicity he wanted. The next we hear of him he had joined a circus. This was followed by his appearance on the stage in one-night-stand melodrama. That is supposed to be a closed chapter in his life. The theatrical program which announced his appearance as the hero who foiled the villain's pursuit of the virtuous maid is a work of art.

Shortly after the collapse of Goldfield and Tonopah, in the panic of 1907, Scotty disappeared, and the next we hear from him is as a book-maker, following the races in the East, from which he is said to have cleaned up \$100,000. My old friend Bill Corcoran—now gone to his long rest—stated that in and around 1904 he knew Scotty to go broke in Goldfield, disappear and turn up again in a couple of weeks with as much as \$15,000 on his person. Since his Chicago millionaire friend didn't figure in the picture until about 1906, it may be inferred that he knew where "it" grew rather early in the game.

Today Mr. Walter Scott stands somewhat over six feet and weighs considerably over 200 pounds, with a thick, heavy thatch of white hair bristling above a pair

Trails Through the Golden West

of bright blue eyes, and a hand as soft as a woman's. He has certainly learned one thing: how to hold his tongue about his own business. That's one reason why he has lasted so long as an attraction to Death Valley. Nothing makes him quite so happy as to drive the 300-odd miles between Death Valley Ranch and Los Angeles in six hours, and he is just as likely to make his start at two or three o'clock in the morning as after breakfast. He does anything, in fact, that will maintain his reputation for eccentricity.

Time was, in the early days, when he couldn't move around Death Valley without being followed. Certain folk were determined to find that plethoric gold-mine which he was reputed to own. If they had succeeded, Scotty's disappearance would have followed as a matter of course. No one knew this better than Scotty, and he had a characteristic way of meeting such situations as they arose. Before the advent of the automobile, the only methods of transportation in Death Valley were the horse and the burro. Now Scotty has always been a genuine connoisseur in horseflesh, although his favorite animal was a mule. The greatest possible tragedy in Death Valley is the lack of water. But no one has ever equaled Mr. Walter Scott in intimate knowledge of the location of various springs and water-holes in the vicinity. He has had over thirty years to familiarize himself with them. When, therefore, Scotty started on a trip, knowing that he would be followed, he rode his best horse. He would then camp near a spring or a water-hole of which no one but himself knew, and there he would settle down until his follow-

Death Valley—Its History

ers ran out of water and left the locality. Then he would make his getaway on his fleet and trusty horse before they could follow him.

Scotty has three interesting hobbies. In the first place, he is an authority on modern fire-arms and has a collection at the ranch containing every make of rifle known. As already stated, it was his expert rifle shooting that attracted the attention of Buffalo Bill. Second is his hero-worship of Buffalo Bill himself. In Scotty's bedroom at the "castle" a life-size oil-painting of Colonel Cody hangs on the wall, one of his most prized possessions. Third and lastly: Scotty would rather do his own cooking, out in his rough-board shack, than be entertained by his well-beloved Chicago millionaire buddy. And that's saying something.

He is expert in preserving figs, pears, and cherries; and this, as he says, is quite enough reason for calling his caravansary a ranch. Visitors to Death Valley are always welcome. He has but one request to make of one and all: that they mind their own business and forbear to ask idiotic questions. For no other reason than to anticipate one of these questions in advance, he has erected a huge sign a mile distant from the entrance: "No Meals Served at Scotty's." In spite of this, he says, a lot of tourists drive up and ask if they can get a bite to eat. Take him in any way you find him, the versatile Walter Scott is an asset to Death Valley and a very substantial citizen.

Santa Catalina and Palm Springs Canyon

WHEN Don Juan Rodriguez Cabrillo, fearless navigator and swashbuckling advance agent for his august majesty Philip III of Spain, came sailing up the coast of California in 1542 in search of adventure, he stumbled upon a beautiful island, just as knights always do in fairy tales. He dropped anchor in a lovely, crescent-shaped cove which the friendly Indians who dwelt there had already named the "Bay of Moons," and Don Cabrillo had the good taste not to change its name. As for the island itself, upon that he bestowed the musical name of Santa Catalina, in honor of his patron saint, and he took possession of it in the name of his king. As the centuries sped by, this most picturesque spot came to be recognized by the dwellers on the mainland, twenty-five miles away, as a place to seek peace and forget one's troubles. For many years, however, its loveliness was known only to a favored few, because its owners were not rich enough to improve it or sufficiently alive to the uses of publicity to sound its praises abroad.

But one day a man named Wrigley—recently passed

Santa Catalina and Palm Springs Canyon

to his long rest—who had devoted many years to accumulating wealth without knowing exactly what he was going to do with it, happened upon the shores of this island. And for the first time in a long and busy life, his spiritual eyes were opened to the significance of the question put so many centuries ago: "What shall it profit a man if he gain the whole world and lose his own soul?" He bought the island.

There are those who will smile at this interpretation of Wrigley's action and say that he bought Santa Catalina because it was a good investment. But I know better. I never met the man, but I feel that I knew him; and I am certain that he could not have set foot on that enchanted shore and raised his eyes to the hills without feeling the Spirit of Beauty lay her hands on him. Nor could such exquisite harmony as exists here between man's work and Nature's have been effected save through sympathetic co-operation. If Mr. Wrigley's response had been less sincere and complete he could not have brought his aspirations to the perfection that is everywhere evident in this superbly beautiful spot.

Catalina is definitely one of the sights of the Pacific Coast where a wanderer may go for a day or all summer or all winter—the heavenly sea breeze will make it difficult for you to distinguish between the seasons. In the first place, the two hours' sail out from San Pedro across the channel will make you feel that you have embarked for the Hesperides and you'll be looking for the golden apples up the verdant slopes of the hills as the vessel slips into Avalon harbor. Santa Catalina

Trails Through the Golden West

is an eloquent example of the possibilities when a man of wealth and good taste embarks upon a hobby, and the citizens of Los Angeles may congratulate themselves that a man with vision came into possession of that lovely resort.

There are comforts here for the traveler who can't get along without a luxurious hotel, and also for the one who prefers a cabin up in the hills. If you must have a country club and golf, they are here. If you like hunting, the progeny of Cabrillo's Spanish goats, left on the island nearly four centuries ago, will give you all the thrills you want. One of the greatest submarine gardens in the world is here, and a glass-bottomed boat provides the medium for a strange and interesting experience. If you can't be happy without fishing, the leaping tuna will give you any odds you ask and beat you. Mountain drives gridiron the island in every direction for the twenty miles of its length, with romantic reaches of a rockbound coast sweeping into the vision as the road meanders up hill and down dale to the drone of the motor. And when a gale comes howling up the coast, Catalina's cliffs rival those of Cornwall in majesty.

Catalina's greatest attraction—it was Mr. Wrigley's greatest pride—is a justly celebrated aviary of rare birds gathered from all over the world; in itself, it justifies a visit to the island. Possibly your introduction to Catalina may be as dramatic as mine. As I drew near the enclosure, a few minutes' drive from the pier, I was greeted with a clear, masculine whistle, followed by the remarkable salutation, in words as clearly enunciated and human as were ever spoken: "Oh, go wash your-

Santa Catalina and Palm Springs Canyon

self!" Suspecting some practical joke, I looked around for the speaker and found myself facing a small cage containing a coal-black Myna bird, an Asiatic species of starling, who, as I looked him in the eye, opened his beak to the fullest extent and cut loose with the following: "Oh, Oh, Oh, Oh, Oh, catch 'em!"—demonstrating what may happen to a perfectly respectable Myna bird when he is brought from India, taught to talk, and allowed to knock around with Mr. Wrigley's baseball players. I might say that, once you have heard a Myna bird talk Americanese, you'll never confound him with the parrot family. He's just a plain human being when it comes to speech. And his accent is nothing short of marvelous.

It isn't generally known that Santa Catalina is an archeological treasure-house. Excavations have been going on all over the island for many years, producing some rare finds for both the Smithsonian Institution and the Museum of the American Indian, New York. The most interesting discovery to date is the fact that a large restaurant in the port town of Avalon stands over the island's largest kitchen-midden, where centuries ago the natives barbecued fish in great pits. And the restaurateur is very much worried lest his landlord insists on buying him out for the purpose of ascertaining whether anything worth while is buried underneath. Only very recently a beautifully etched steatite bowl, estimated to be at least 500 years old, was unearthed in Avalon by workmen digging a sewer-trench. To the amateur photographer, however, Indian-face Rock, at Little Harbor, will prove more interesting than all the

Trails Through the Golden West

archeology on the island. It is a startling cliff formation easily seen with the naked eye, showing a mammoth profile of an Indian chief. And though your camera must be trained across the harbor about a quarter of a mile distant, an enlargement will bring out the lines of the face very clearly. Also, you will have to take the sail over to La Belle Avalon just to see how different it is from most seaside resorts.

Few visitors to California who grow enthusiastic over the ornamental palms that grace the boulevards and adorn private property realize that the origin of these picturesque trees is a hidden canyon in the Coast Range at Palm Springs, a hundred miles east of Los Angeles on the Southern Pacific Lines. When I visited this unique and lovely spot for the first time, many years ago, there were a few shacks in the vicinity to take care of the occasional visitor; nothing that approximated a hotel. Since then, however, fashion has set the pace from Los Angeles in that direction and beautiful estates have sprung to life out of desert sands, along with excellent hotels. How the residents of Los Angeles came to overlook this beautiful spot for so many years is a mystery. Its very singularity would justify a visit if there were no hostelry within a hundred miles. One would never dream that rugged, precipitous old Mount San Jacinto had carried such an altogether lovely secret in his granite heart for so many years. Watered by numerous sparkling springs, this exquisite tropical display welcomes the desert traveler with all its pristine freshness and Oriental setting. How far back into the depths of the mountain that winding bit of loveliness extends,

Santa Catalina and Palm Springs Canyon

I have no idea—possibly four or five miles. Who planted those lofty trees no one knows; perhaps some weary padre, assigned to Coronado's expedition, nearly 400 years ago, stumbled upon the place. You won't be much concerned, however, about the length of the canyon or the way the palms got there. You will be quite content just to bury your hot face in the cooling waters of those heavenly springs and try to remember how the Twenty-third Psalm runs. And you'll not leave that enchanted spot without training your camera on it. And such a background for a grove of palms you will see nowhere else in the United States. They tower into the air, straight as arrows, from 75 to 100 feet high, crowned with a great plume of bright green fan-shaped leaves, their trunks as smooth as one's hand; the pendent circular thatch of brownish, dead leaves immediately under the verdant crest is the deadline, as it were, where the old gives way to the new in its upward march. You'll want to tarry a while in that spot. That snow-laden breeze from the mountain-top, pushing its way down-stream to the very edge of the desert itself, will furnish you with an unanswerable argument for not hastening back to your hotel.

Yosemite Valley and the Big Trees

THE familiar phrase "Yosemite the Incomparable" expresses only the simple truth. For many years artists and writers have rhapsodized over this lovely place, and all of them have learned how inadequate is either paint or language to express its elusive charm. The intangible spirit of the High Sierra must be its own interpreter. That such immanent beauty could have been left behind by the barren and bleak Glacial Age is almost beyond comprehension. Here is the veritable "jewel in the lotus"—, the *multum in parvo* of all mountain scenery in the Western Hemisphere. Think of the vast extent of the High Sierra: 430 miles long, by 70 to 80 miles wide and 14,000 feet high—and then try to visualize this exquisite valley seven miles long by a scant mile wide, ensconced between mighty walls on either side, 3000 to 4000 feet high; completely hidden away, like a pearl of great price, in the granite mountain-side, 4000 feet above sea-level.

This matchless canyon is so ingeniously concealed that, when eighty years ago it was discovered by chance, the walls at the lower end had to be blasted

Yosemite Valley and the Big Trees

in order that a roadway might be constructed. In fact, the sole entrance to that sheltered shrine was by way of the singing mountain stream that had, throughout the ages, followed the pathway hewn by the mighty glacier which sculptured it. Today, however, the through trains of the Southern Pacific and the Santa Fé railways bring the traveler almost to the very gateway itself, and a comfortable motor ride of eight miles over well-built roads does the rest; and—what is of vital importance—does it with consummate good taste and in harmony with the plan of the Great Architect who conceived it.

To one who has never visited Yosemite, the overwhelming character of the entrance rarely fails of its effect. The motor, continuing the climb from El Portal railway station, glides so smoothly along the picturesque banks of the Merced River that the sophisticated tourist cannot possibly anticipate what lies ahead. One can almost read in that expressionless face the solemn determination to manifest no surprise over anything. But note the change as the picturesque view merges into one of supernal beauty and sublimity! Majestic Cathedral Rocks on the right project from the southern wall like a huge peninsula, cutting the valley width from a full mile to a half-mile and forming a magnificent gateway, whose seven-mile perspective terminates with gorgeous Half Dome at the far end. On the hither slope of the Rocks, 2000 feet below their summit, Bridal Veil Fall cascades over the granite lip of the 620-foot cliff that separates it from the floor of the valley, with such infinite delicacy that you may

Trails Through the Golden West

note the wind swaying it to one side as though it were sheer gossamer. This filmy cataract has a lateral play of twenty feet in that gentle breeze, so soft that it can hardly be felt. And daily, in the slanting rays of the descending sun, a lovely rainbow arches its lower courses like a brilliantly framed painting.

In bold relief against the sky, the three peaks of Bridal Veil's background rear a triple crown, each one loftier than the other and inclining towards the valley in a series of graceful genuflections. To the left and facing Bridal Veil stands one of the magnificent cliffs of the world: El Capitan. Towering in its tremendous bulk, it forms the left side of the gateway of the valley at its narrowest part. The artistic proportions of this overwhelming cliff, however, blind one to its great height. A variety of estimates have placed it all the way from 400 to 1500 feet. Very few have even approximated its correct altitude, 3604 feet—nearly three-quarters of a mile. More amazing still is the fact of its being one solid mass of granite.

As you stand there on the floor of the valley, from three to five thousand feet below the summits of those overwhelming masses, which rise perpendicularly for a distance of seven miles on either side, you will note a definite smoothness which could have been produced by nothing but rushing water and the chiseling effect of glacial action. For that is the way Yosemite was formed. Originally, the Merced River, antedating in its action the Ice Age, flowed approximately at the level of the cliffs which hem in the valley today, and started the excavation process which was continued during

Yosemite Valley and the Big Trees

the glacial period. This was followed by a cataclysmic geological fault in which the floor of the valley dropped 3000 feet. The Merced River and the Glacial Age completed the marvel. Let your imagination play around the fact that during that remote epoch a mammoth glacier, several miles in extent and a mile deep, plowed its inexorable way, inch by inch, foot by foot, across the western slopes of the Sierra and dug a three-way trench, roughly in the shape of the letter Y, through the eternal granite.

On the main summit of the Cathedral Rocks, 2680 feet above the valley floor, there are lying glacial boulders which prove that the ancient Yosemite Glacier at one time completely overwhelmed these tremendous rock masses. Another remarkable result of this glacial action is that it excavated three successive levels along the slopes of the range—a mammoth stairway, so to speak, leading to the upper reaches of the Sierra, with risers varying from one hundred to six hundred feet. These strange steps have resolved themselves into what the geologists call hanging valleys, the final drop or overshoot of which is the summit of the 2000- to 3500-foot cliffs which constitute the walls of the valley. For thousands upon thousands of years the melting ice and snow of the lofty Sierra glaciers have been released in rushing summer streams that have worn for themselves canyons from two to ten thousand feet deep in the slopes of the range, ending in the lofty and spectacular cataracts for which Yosemite is famous, and creating the Merced River which winds so gracefully between its towering walls.

Trails Through the Golden West

It is a little hard for the visitor to believe, as he stands on the valley floor, that he has already climbed 4000 feet above sea-level to reach it, and that he would have to climb nearly 7000 feet more, above the massive walls that shut him in, before he could reach the crest of the range. Another strange fact is that this area is so small and so securely hidden that there is no place outside from which it may be discovered—not even from an airplane. The mighty Sierra is so tremendous, the valley itself so diminutive that hunting for it would be like the proverbial search for a needle in a haystack.

The feature of the Yosemite that makes it pre-eminently beautiful in the eyes of world-travelers is its waterfalls. Of these the highest single fall is dainty, slender Ribbon Fall, which drops 1612 feet from its upland source. Being pent in, as it were, by the recess it has worn into the cliff during thousands of years, it rushes down its own chute rather than leaping clear of the cliff.

As one wanders about on the valley floor, with such an embarrassment of natural riches spread before his view, he cannot realize that there is almost an entirely different world above his head, completely hidden from the eye. He is so impressed by the magnificence of his surroundings that he cannot appreciate that Yosemite Valley, seven miles long by one mile wide, is an infinitesimally small part of Yosemite National Park, with its area of 1139 square miles or 728,825 acres. He has heard for years that Yosemite Falls are the highest in the world, and they are thus naturally

Yosemite Valley and the Big Trees

foremost in his mind. In order, then, to avoid anticlimax we will take the "back door" out of the valley, over a zigzag bridle path leading up the southern wall for a look-off from far-famed Glacier Point. Enroute we pass lovely Vernal Fall, breaking over its wide crest, like an immense curtain, into an emerald pool worn by the falling waters of ages, 320 feet below. When the sun is just right, it is the most scintillating cataract imaginable, with an iridescence that dazzles the eye.

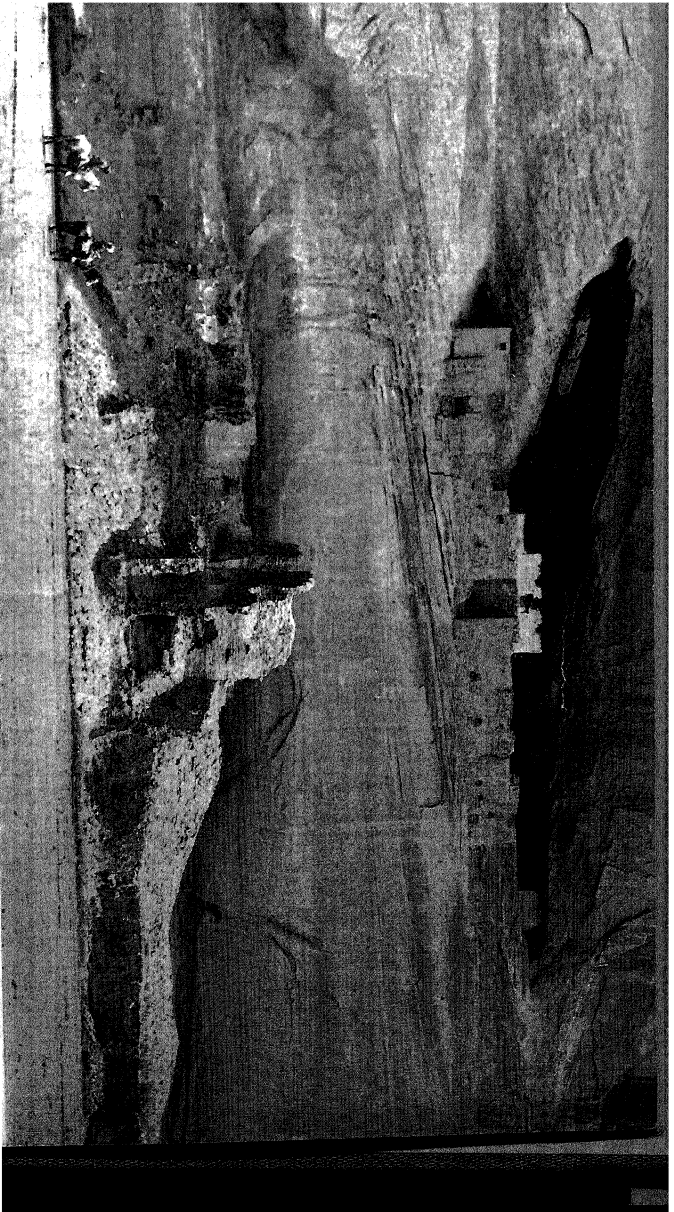
Farther on, as we emerge from the pine-tree and fir growth through which the trail runs, we come face to face with a mighty cataract that seems as if it might overwhelm us before we could get out of its way: Nevada Fall, the upper part of the Merced River where it breaks out of its awesome canyon into the light of day and takes its first leap over a precipice 600 feet high. Here the river is crowded into a water-worn chute thirty feet wide as it approaches the crest and fairly catapults itself with a defiant roar far over the edge like an unleashed monster. It is a sight for gods and men. Pure white water, the spray from which is blown by the wind over the bridle trail you are ascending. The ground trembles beneath your feet from the tremendous impact of the cataract on the rocks below. Rising to the summit of the cliff you cross the river on a small bridge and shortly top out at Glacier Point with the world spread at your feet. What a view!

Off to the south, the full sweep of the Sierra, dropping from its heights by that stately stairway which the glaciers hewed out of the mountain-side eons ago, thus giving birth to the Nevada and Vernal Falls which we have

Trails Through the Golden West

just left behind. Glinting in the sunshine, the turbulent Merced, having made a descent of over 1200 feet in its three steps in the course of half a mile, lies far below. Now we see what has constricted the rushing river at the crest of Nevada Fall: the narrow valley between "Liberty Cap" and Mount Broderick. From where we stand, however, it seems but a very little thing in the vast ensemble of mountain scenery that surrounds it, and the terrifying roar that shook us in our saddles as we slowly paced our way upwards beside it now rises like an echo from afar and is borne away by a change in the wind.

Far across the valley, the first sight that catches the eye in the brilliant sunshine is the glistening crest of Yosemite Fall as it breaks over the lip of its mighty cliff, 2600 feet above the valley floor. Take your binoculars and watch it as it gathers headway for its first breathless leap of 1430 feet, at the foot of which may be seen the hanging valley which interposes between the upper and lower fall. Surpassing all other falls in the world in height and splendor, Yosemite fascinates and enthralls the onlooker to such an extent that he returns again and again to catch its glorious view from every angle. Even at this distance the reverberations of that tremendous cataract subdue all other sounds just as its overwhelming roar dominates the valley floor. It is amazing to think that that first fall of 1430 feet is nine times higher than Niagara, the frightful force of which has worn a winding canyon into the rock covering a drop of 815 feet through which it rushes at break-neck speed before it reaches its second fall



The famous cliff dwellings in the Canyon De Chelly are built in the side of a sandstone wall that rises to a height of from eight hundred to a thousand feet.



This rocky promontory two thousand feet above the valley floor in Yosemite National Park is appropriately called "Inspiration Point."

Yosemite Valley and the Big Trees

over the sheer cliff 320 feet down to the valley floor. Riding across the valley for a close-up, one cannot approach the foot of the fall without taking a chance at getting drenched. The most advantageous spot for a photograph is from across the river, where a lovely reflection, both morning and evening, rewards the patient zealot; if he *is* patient, his reward will be all that he could wish. Nowhere else in the world could he photograph a 2600-foot cataract reflected in the glassy surface of a mountain stream.

There is a charming little lodge at Glacier Point, a few yards from the edge of the cliff, where one may settle down for a day or a week. The magnificence of the views from this lofty spot is beyond words. Spectacular Half-Dome—a 5000-foot granite peak split almost vertically in half, so close at hand that it would seem your voice should carry easily across the void; and odd-looking Liberty Cap, a 7000-foot mass whose summit is on a level with your eye—two immense upthrusts that have been worn so smooth by glacier action that it would almost seem possible to write on their sheer sides with a lead-pencil. Most overwhelming of all is Overhanging Rock, jutting out from the sheer edge of the cliff, whence you can drop a pebble 3200 feet down completely in the clear, and from which the valley below looks like a diminutive door-yard. One mile westward Sentinel Dome overlooks both the eastern and the western valley limits, with Yosemite Fall in the middle distance. Here also may be found growing in a cleft in the granite a beautiful, symmetrical, and solitary specimen of a stunted pine which has defied the wintry gales of untold centuries,

Trails Through the Golden West

still sturdy and unyielding, with its roots deep down in the eternal rock. No other vegetation in sight, and not enough earth on that wind-swept peak to fill a hat. Well worth a visit, that remarkable tree, not to mention a picture.

Every morning a motor-coach leaves Glacier Point for a day's ride through the "back-country" to the Mariposa Big-tree Grove: the world-famous gigantic Sequoia. In this land of the superlatives where, if one is going to stick to the truth, an understatement becomes an impossibility, one hesitates now and then from the sheer fear of being considered a romancer. The only reply possible to skepticism is: go and see for yourself. If you will "try anything once," one little journey into Nature's Wonderland of the Southwest and the High Sierra will make you marvel that you could have passed up these glories so long in favor of a European trip. One brief sojourn amongst the Big Trees and you won't question that "the groves were God's first temples."

Only reverence can be felt by any appreciative soul on approaching these age-old products of Nature's handiwork. You will ask but one privilege: to be left alone awhile and be spared the punishment of listening to any idle conversation. The Grizzly Giant, monster of the grove, is not less than 4000 years old, with a height of 204 feet, girth 93, diameter 36, the third largest tree in existence. The monarch of them all is the General Sherman in the Sequoia Grove, with a height of 274 feet, a girth of 63, and a diameter of 37½. Its first limbs are 150 feet above the ground and ten feet in di-

Yosemite Valley and the Big Trees

iameter. This tree is the oldest living thing in the world, majesty personified. At that, it is not the tallest. There are lots of these marvels, in the brawn of their youth, that exceed 300 feet in height—youth meaning somewhere in the neighborhood of 500 years of age. The only way one can get a satisfactory idea of their great height is to lie down on his back and look straight upwards. There seems to be no end to the vista. The "Wawona" is the celebrated tree through the base of which the highway runs, ample for the accommodation of a motor-coach. Others lying prone and hollow are wide enough to allow a horse and wagon to drive through for the greater part of their length.

Even when you are standing among these trees it is almost impossible to realize fully their size and their antiquity. You must take in the fact, for instance, that the tree you are looking at now was flourishing in this spot fifteen hundred years before the birth of Christ. You learn that it is 300 feet high; but before you can grasp the full significance of this you must recall that the Capitol at Washington is 287 feet high, that the length of an average city block is 240 feet. Remember, when you try to realize what 36 feet of diameter is, that the width of two city lots is 40 feet. John Muir counted 4000 rings in the trunk of one of these giants that had fallen, showing that it must have flourished during the age of the Pharaohs. Some of these trees have an ancestry that goes back into the mists of the Cretaceous Age. How they managed to survive the Glacial Epoch nobody knows. The principal characteristic that has contributed to their survival is their

Trails Through the Golden West

immunity to forest fires; the redwood contains no pitch and much water, and will not burn when green. Their greatest enemy has been the lumber industry. You can imagine how much solicitude a lumber magnate would have for the preservation of these giants when you realize that one of them will cut 100,000 feet, board measurement, of beautiful redwood.

Future generations of Nature-lovers will hardly appreciate how much they owe to that truly great President and conservationist Theodore Roosevelt, whose indomitable energy and determination were all that stood between the safety of the magnificent Sequoias and the conscienceless rapacity of the Pacific Coast lumber interests as frequently manifested through their representatives in the Congress. And here again the memory of Stephen T. Mather will be a precious heritage to all of us for years to come. As head of the National Parks System, he took up the work where President Roosevelt laid it down and continued it as long as he lived. Throughout the vast extent of our glorious West, wherever a national park or reservation has been established as a legacy for all time for "him who, in the love of Nature, holds communion with her visible forms," it may truthfully be said of each of these real public servants: "Would you see his monument? Look around you!"

It is a great comfort to know that these wonderful California Big Tree groves are still in their prime; that, contrary to the general idea, the Sequoia was never more widely distributed than now; that it is not a decaying species, and that no tree indigenous to the Sierra

Yosemite Valley and the Big Trees

Nevada and the Pacific Coast in general is more firmly established and in harmony with both climate and soil. It is an inspiration to realize that the national forest reserves of the United States today approximate 30,000,000 acres, and that at last it is recognized as "good form" for Senators and Congressmen to champion the cause of forest conservation. It is too bad that they are not alive to the crying necessity for a similar interest in our fast-disappearing wild life.

A night or two at Wawona Lodge in the Mariposa Grove, and you will be wending your way back to Yosemite, dropping down the 3000-foot elevation by easy grades to the floor of the valley. And here is where you are going to concede the appropriateness of the name of "Inspiration Point," the view from which, up the valley, is superb. Summon all the adjectives in your vocabulary—you can hardly overdo it. Such a panorama never was on sea or land. It is overpowering, an unbroken vista of magnificence that will take your breath away.

The days and weeks that could be spent ransacking the scenic treasures of this place! Hiking—horseback—motoring: any of these offers unlimited possibilities for a delightful summer in the Sierra. Up there in the hills there is an enormous area of lakes and streams, a wilderness of great charm, which would take you far more than even a whole summer to explore; trails and roads, too, that have been in use for half a century—though you would never suspect it unless somebody told you. The knowing ones have long loved this place. Old John Muir knew all its secrets, reveled in them, and wrote

Trails Through the Golden West

gloriously of them. But not one visitor in a thousand who goes to the Yosemite dreams that they exist.

In the whole Sierra Nevada there is nothing more wild and inspiring than the Grand Canyon of the Tuolumne River. To quote John Muir: "For miles the river is one wild, exulting, on-rushing mass of snowy, purple bloom, spreading over glacial waves of granite without any definite channel, gliding in magnificent silver plumes, dashing and foaming through huge boulder dams, leaping high in the air in wheel-like whirls, displaying glorious enthusiasm, tossing from side to side, doubling, glinting, singing in exuberance of mountain energy."

Take the motor-car run from the Yosemite and visit this place. See the "wheel-like whirls" that Muir mentions. They have recently been given a name—Water-wheel Falls—and in a few years they will be well known. Huge slabs of rock project upwards from the river bottom, and against them the rushing stream hurls itself with an impact that sends a graceful arc of green and white water, twenty to fifty feet high, whirling into a foamy whiteness as it falls back into the stream. Leading down to these extraordinary falls are foot and saddle trails, which pass into magnificent Muir Gorge. This latter, though quite different in its scenery from Yosemite, is just as wonderful. Not far away is beautiful Hetch Hetchy Valley with its \$100,000,000 water and power project for San Francisco.

The supreme motor trip of the whole Sierra today has been created by the rehabilitation of the old Tioga Trail, which connects all the lofty western mountain

Yosemite Valley and the Big Trees

roads in California with the eastern slope of the High Sierra. From here the motorist may make his way through famous Owens Valley eastward via Los Angeles, or northerly via the Nevada desert country into the Lake Tahoe region. Fifty years ago this Tioga Trail was constructed by Chinese labor to lead to a gold-mine on the western slopes which never panned out. A few years ago the late Stephen T. Mather gathered around him a group of public-spirited citizens who purchased the old road from the mine-owners and presented it to the Government. The construction of a first-class motor road followed, resulting in establishing a connection by the Southern Pacific Railway between its Lake Tahoe branch on the Overland Route and its Yosemite Valley Route through the Yosemite Valley motor-coach line. This is an extraordinary run of 206 miles, consuming two days and taking the passenger through some of the most magnificent mountain scenery in the country, without materially altering his itinerary. Briefly it represents a comparatively new step in co-operation between railroad and motor transportation instead of useless competition, and the traveler reaps the benefit.

Rounding the shoulder of mighty El Capitan to the general level of the lower Sierra, in itself, represents an elevation of 7000 feet above sea-level. This is the outlook to the north you enjoyed from Glacier Point and Sentinel Rock. Follows a fascinating drive through the famous Tuolumne Big Tree Grove, through forests of pine, fir, and juniper, pausing for luncheon on the shores of exquisite Lake Tenaya, encircled by the giant peaks and domes that constitute the head of Yosemite

Trails Through the Golden West

Valley. Rising steadily up the western slopes of the range, through Tuolumne Meadows and Lee Vining Canyon, you cross the summit at an elevation of 9941 feet above the sea. Dropping gently down the eastern face of the Sierra to mysterious Mono Lake in the Nevada desert, around the shoulders of mighty precipices, passing strange and menacing extinct craters and bottomless canyons, you arrive finally for a night's rest at Tioga Lodge.

Resuming your journey next morning, you speed along for miles through desert country somewhat resembling Death Valley, being burnt to a cinder by prehistoric volcanoes. The route hugs the eastern base of the High Sierra, recrosses the Nevada State line into California, and mounts the eastern slope of the range. Your night is spent at Tahoe Tavern, nestling amid lofty pines on the shore of lovely Lake Tahoe, universally conceded to be the most beautiful body of water in the United States and noted alike for its livableness and its accessibility. Here you may resume your journey east or west, or you may return to Yosemite—a fair example of the efforts being put forth these days by most transcontinental lines on behalf of the traveler.

Glittering, serrated peaks, snow-capped the year round—a dozen of them—ranging from 9000 to 11,000 feet above sea-level, surround Lake Tahoe. In some places green meadows slope gently down to the water's edge, fringing pebbly beaches; in others, tremendous masses of sheer granite rise from their reflections in the blue water like delicious pastels, while in every direction the lofty pines of the forest troop down the moun-

Yosemite Valley and the Big Trees

tain slopes like an army on the march. I have witnessed sunsets on Maggiore and Como that were lovely. But I can only hope this book will fall into the hands of one who has raved over Como and Maggiore but has never been west of the Rockies. I know what will happen.

Statistics show that Lake Tahoe is 23 miles long by 13 wide with an astounding depth of 1645 feet; that the steamer travels 67 miles in circumnavigating its shores; that it lies on the crest of the Sierras, midway between California and Nevada, over 6000 feet above sea-level. But the thing that defies description is its color. It is beyond words; it means something different to every person who looks at it. The nearest I can come to conveying its quality to you is to say that I cannot imagine where Maxfield Parrish got his blues and purples if it wasn't from Tahoe—either Tahoe or Crater Lake. As far as I know, their colors are to be found nowhere else. The story is told at Tahoe Tavern of a credulous tourist who having been told that the water from the lake was so blue that it could be used for writing, filled his fountain pen with it. He saw nothing in the story to excite disbelief. And when you see it for the first time, you won't be inclined to laugh at him.

I haven't said anything about the length of your stay at Lake Tahoe. Perhaps it will suffice to suggest that nine-pound Loch Leven trout are not uncommon on a fly rod, and that the Mackinaw variety of lake trout have been caught up to thirty-one pounds in weight while an abundance of rainbow and eastern brook trout may be landed from the Truckee River, Tahoe's outlet down the mountain-side which vanishes in the

Trails Through the Golden West

sands of the Nevada desert. If the time should come when you fancy a camping and fishing trip in the High Sierra, I suggest that you investigate the Mono Lake country on the eastern slopes. You can outfit with a pack-train and guides at any one of a half-dozen points and camp out all summer if you like, in a fascinating scenic and trout-fishing country, without ever once descending to the floor of ancient Owens Valley. That's where all the trout-sharks from Los Angeles and vicinity go for real sport. And, with a terrain of 400 miles along the slopes of that mighty range, there will be plenty of room for you and your party without crossing your cast with that of a competing sportsman. You can take your choice of Mono Lake, June, Mammoth, Hilton, Rock Creek, Bishop Creek, Cottonwood—canyon after canyon, with tributary streams—all on the eastern slope, not to mention the Yosemite Valley country over the range. You'll have all the room you want, and trout as well. That bunch of western trout-waddies in the Owens Lake country like nothing better than to show a "guy from the East" what real trout-fishing is. You'll never hear of a sportsman returning from that country with the report, "I had a lot of fun even if I didn't catch any fish." If you are really interested, a note to the secretary of the Chamber of Commerce of any one of the following Owens Valley towns in the Golden State will bring you detailed information: Lone Pine, Independence, Big Pine, Bishop, and Bridgeport.

Mount Shasta and Crater Lake

IN majesty of approach there isn't a mountain in the United States to compare with that magnificent extinct volcano, Shasta. It is also the only one of our truly great peaks that can be viewed in its entirety from a railway train. If there were nothing else to be seen from the car-window along the 771 miles from San Francisco to Portland over the Southern Pacific Route, Shasta would justify the trip. So immense is its area (the circumference measures 100 miles) that it almost dwarfs its great height—14,400 feet above sea-level. Springing from a cluster of a hundred diminutive volcanoes, this extinct monster rises in lonely grandeur from a broad volcanic plain, part forest, part grassy meadows, hundreds of square miles in extent, as the one undisputed landmark of the Pacific Coast.

It companions the traveler who is taking his scenery "on the run" for five hours of uninterrupted delight, along a distance of ninety-seven miles from where it first breaks on the sight, at the little town of Castella, to the summit of the Siskiyou. No mountain in the world affords the traveler such an opportunity for

Trails Through the Golden West

close acquaintance from so many different points of view. Barring such a sight as might be had from an airplane, the moving train brings the mighty pile before the eye in its complete magnificence—a moving picture, as it were. And by the time you have had your last glimpse of that glacier-capped dome, and the train is winding its way down the northerly slopes of the Siskiyou Range, Shasta will have made a friend of you for life.

Of the two great peaks that dominate the mountain systems of the Pacific Coast—Shasta in California and Rainier in Washington, both the same height—Shasta's supremacy lies in the fact that the view of it is unobstructed from base to summit; and this not only from the railway but for a distance of over 100 miles, as the crow flies, from the Klamath Lakes to the north and from the Chico plains on the south. For all its solitary grandeur and immensity, there is a certain friendliness about it that never fails to attract the traveler. From its perpetual glaciers, the turbulent Sacramento River has gathered the power that for ages has plowed the somber canyon beside which the railway winds its northerly course. Thousands of years of melting snows, accompanied by the sediment deposited by the grinding glaciers, have clothed the vast lava-flows on its slopes with dense forest growth and verdure, while from its base innumerable springs and copious streams have created the fertile valleys by which it is surrounded.

There has been a marked increase in the number of travelers in recent years who have stopped off for a better acquaintance with this friendly monster, as well

Mount Shasta and Crater Lake

as for their introduction to the rudiments of mountain-climbing, which is very simple on Shasta's slopes and can be undertaken without risk to life or limb. The train sets you down at Mount Shasta City station, in lovely Strawberry Valley. This is about twelve miles from the summit and is the point from which the finest view is to be had of the two great extinct craters which form Shasta's double peak. Twenty-three beautiful mountain lakes in the vicinity, all fed by Shasta's melting snows, add to the attractions of this lovely spot. Horses and guides for exploring, hunting, or mountain-climbing are always available.

Bearing in mind that Shasta rests on a vast plain 3000 feet above sea-level, you have just that much less distance to climb on your way to its lofty summit. It is a most inspiring eight-mile trail that leads through the dense forest-growth up to the edge of timber-line where you camp for the night. Your mountain horse, your comfortable Mexican saddle, your guide, and a pack-horse carrying your blankets and enough grub for a couple of days—these will offer you an expedition which, for all you know, may be the starting point for an entirely new life. Can you picture yourself in camp at an elevation of 8000 feet on the slopes of one of the most magnificent mountains in this hemisphere, sitting beside a campfire, with the Great Bear stalking across the skies immediately overhead, so brilliant that you can count the stars in his trail? All in a silence so deep that you can almost hear the Pleiades singing?

Shasta has two craters. A view of one will suffice, not only for Shasta himself but for any other mountain

Trails Through the Golden West

you are likely to climb. A glance into that awesome crater, a mile in diameter by a thousand feet deep, will give you all the thrills you will want for the rest of your life. You will find it reassuring to realize that it is an extinct crater. Precipitous slopes, covered with tremendous masses of shattered lava shrouded in snow, terminate at the bottom of the pit in a smaller crater a few hundred feet high, indicating its final volcanic activity. And paradoxical as it may seem, at the lowest point, beside the smaller crater, lies a diminutive lake frozen over with a veritable pall of black ice. Extinction personified! A terrific scene.

To the north rises the great snow-capped cone of the mountain. Intervening yawns an immense canyon through which a huge, serpentine glacier winds like some Dantesque monster endowed with life. Dotted here and there with tremendous masses of lava which have been dislodged from the lofty precipices above, and criss-crossed by innumerable bottomless crevasses in whose icy depths may be descried gleaming tints of green and blue, it is a daunting and never-to-be-forgotten sight. One is thankful for the cheering sunlight overhead. The unspeakable glory of the sunshine over Shasta suggests a word of advice: defer your return to the plain till the forenoon of the day following your climb to the summit. It will repay you a thousand times to remain upon those sublime heights until darkness falls. "Sunset and evening star" on Shasta are beautiful beyond words and well worth another night in camp.

If you will take the time to circumnavigate old Shasta, it will leave memories that may never be blotted

Mount Shasta and Crater Lake

out. Who ever heard of a good road 100 miles long, extending completely around a mountain? If such a thing exists anywhere else in the United States I don't know where it is. Maybe you'll elect to go on horse-back, and give about two weeks to it. Doubtless the motor-car is on the job these days. I haven't had the nerve to inquire. But if you catch the "feel" of a mountain horse's gait going up Shasta's flanks, it may be you'll turn your virtuous back on the motor and stay by the cayuse. You may get a thrill out of following for a considerable distance the old Emigrant Road, lying on the east side of the mountain. The ruts of the emigrants' "prairie schooners" are yet to be seen in the pass about 5000 feet above the floor of the valley. Even before their time, during the period from 1842 to 1847, Kit Carson, the famous scout whose exploits you read of during your school days, conducted the Frémont "Pathfinder" Expedition over this same route, to Sacramento and return to the Columbia River.

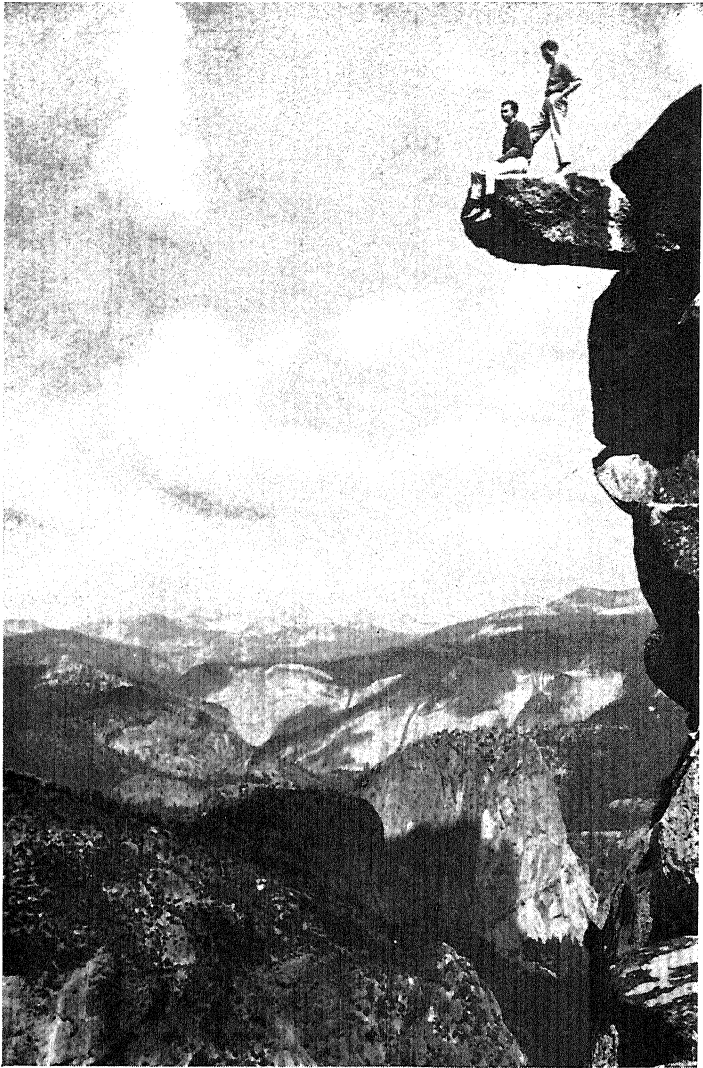
Those were the days when California was Mexican territory, and war with Mexico was on when Frémont won his way over the Cascades. He was so far away from Washington, however, that he knew nothing of the war and was astonished when the Spanish General Castro, at Monterey, of whom he undertook to purchase supplies, met his request with an order to leave the country *pronto*. Frémont, with forty mountain men, replied by throwing up fortifications on a hill overlooking the town and defied Castro to do his worst. Inasmuch as Castro had only 300 soldiers, it seemed the part of wisdom not to irritate forty U. S. rangers unneces-

Trails Through the Golden West

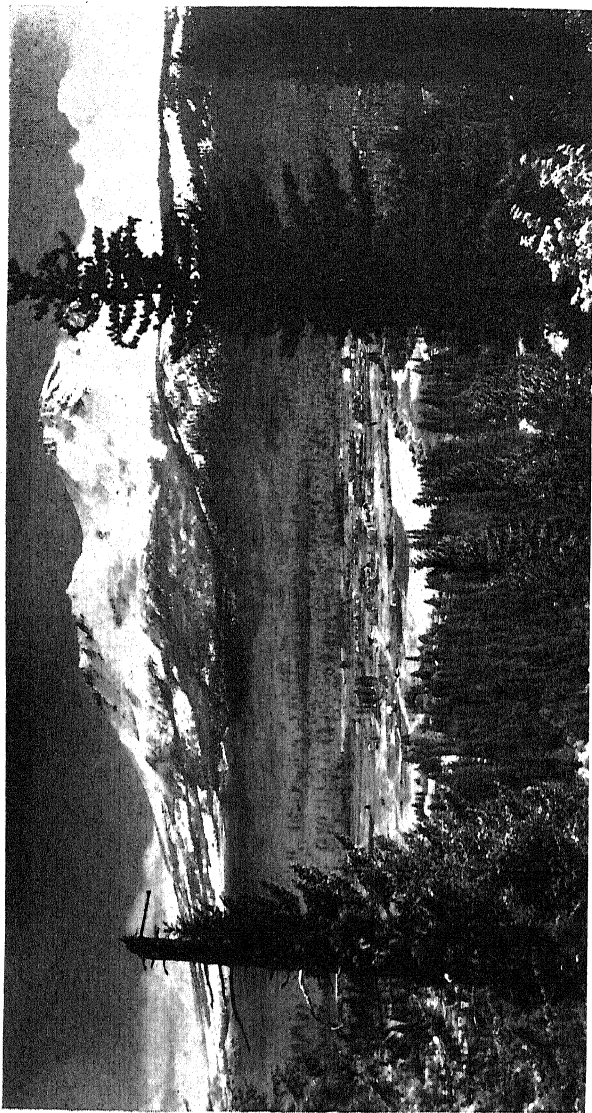
sarily. By the time Frémont got back east in 1848, California had been annexed to the United States.

While you are on this side-trip through historic country it may be worth your time to journey forty miles farther northwards to Tulé Lake for a visit to the famous lava beds, from which "Captain Jack" and his Modoc braves successfully defied the U. S. Army troops for months in 1872. It is interesting to see how admirably a fiendish lava-flow lent itself to the formation of an impregnable fortress and how clever the Modoc Indians were in taking advantage of it. The uneven subsidence of the lava created a number of redoubts, full of natural loop holes, some of which are open and others covered. All of them are connected by a number of corridors opening into spacious chambers, one of which was occupied by the bloodthirsty Captain Jack himself. They were finally dislodged from their position by shells from a cannon which had been mounted on a raft and pushed out into the lake within range of the stronghold. The capture and hanging of Captain Jack and three of his "bad-men" followed. But lying below a 500-foot cliff of black lava, the crude little graveyard with thirty mounds and rough headboards, the epitaphs on which have become illegible with the years, tell a melancholy story of the cost of the campaign—a cost that included the death of General Canby, who was treacherously slain under a flag of truce while trying to bring about a peaceful conclusion.

The passing of sixty years makes little difference in the appearance of lava, and the plan of attack and defense is as clear to the eye today as though it had taken



Overhanging Rock, nearly four thousand feet above the valley, offers one of the most spectacular views in Yosemite National Park.



The huge, snow-clad dome of Mt. Shasta is one of the most impressive spectacles of the Northwest. Actually Mt. Shasta is an extinct volcano. Its height is over fourteen thousand feet.

Mount Shasta and Crater Lake

place within the last fortnight. You needn't visit Herculaneum and Pompeii in order to see the devastating effect of lava. There is a much more theatric setting in the vicinity of Mount Shasta. And when you recall that the level of those vast plains round about its base is 3000 feet above the sea and that they are covered with lava cinders and pumice to great depths, you may imagine the volcanic activities of this giant in earlier days. Glorious Shasta, serene and immutable, its silvery dome silhouetted against the deep blue of a California sky, is a mute challenge to man's pettiness and an appropriate sentinel for the most spectacular body of water in all the world, whither we are bound: Crater Lake.

The most impressive characteristic of the West's natural wonders is the individuality of each of them. In that vast panorama that spreads out from Arizona to the Golden Gate and from the Mexican border to the Canadian line, we would expect to come occasionally on something like repetition or duplication, but we never do. And each of us, as he goes from one breathtaking sight to another, will find that some of them are staying in his memory as his favorites. Speaking for myself, the glory of Shasta throws into the shadow every other mountain the country over. To me that snow-crowned monarch, raising his massive head in splendid isolation, is the scenic lode-star of the Pacific Coast, in a class by himself, superbly unique and so accessible as to inspire a feeling of intimacy. For the traveler's sake, however, we will include him as the leader of a peerless trio, in the order given: Shasta, Crater Lake and the Redwood Empire Drive, all closely knit

Trails Through the Golden West

and easily reached. You can visit two out of three with perfect convenience while bound in one direction: Shasta and Crater Lake, or the Redwood Drive and Crater Lake.

You may proceed on your way north from Shasta either by the Cascade or by the Siskiyou lines of the "Shasta Route" of the Southern Pacific, and enter Crater Lake National Park by motor-coach either from Klamath Falls on the Cascade line to the east of the park, leaving it at Medford on the west and proceeding thence to Portland, or vice versa—that is, entering at Medford and leaving at Klamath Falls. Either way you traverse the section without retracing your steps or adding to the time consumed. From Klamath Falls the motor ride is sixty-two miles; from Medford, eighty. The roads are perfect and the scenery sufficiently wild and beautiful to justify the ride even if there were no Crater Lake awaiting your arrival at the other end.

Crater Lake is not only the most amazing body of water in the world—it is one of the wonders of the world itself. It has no equal in depth, in the astounding brilliance of its color or in its terrific setting, either in the western or the eastern hemisphere. The story of its origin is so staggering that, were it not for the actual presence of the lake itself—*prima facie* evidence of the scientific facts set forth—there would be every reason for doubt. In brief, it is almost too much for the mind to assimilate.

Ever since the purely accidental discovery of Crater Lake, nearly eighty years ago, scientists have been

Mount Shasta and Crater Lake

speculating as to the cause of its formation without arriving at a definite conclusion. This astounding "gem of purest ray serene" lies in the very heart of the Cascade Range in southern Oregon, lodged in a mountain top. Imagine yourself one of the exploring party that in 1853 went in search of a mythical gold-mine in that particular section of the Cascades. All day long you have been climbing a stiff grade, common in mountainous country, far above sea-level, with no more expectation of running on to a body of water than you would have of encountering an active volcano. The country opens out as you rise, and there is nothing especially noteworthy in the sky-line above, which, so far as you know, may constitute a divide in this vast, unexplored region. That is something to determine, and you maintain your more or less commonplace progress upwards until you attain to the height of land with the expectation of a fairly clear view down the other side.

Instead of having topped out on the summit of a divide, you find yourself on the crest of a tremendous and apparently limitless circular rampart of sheer precipice, with an almost vertical drop of from one to two thousand feet; a huge cup, as it were, with perpendicular sides. And the first thought that comes into your mind is that it would prove a fearful prison-house for any mortal unlucky enough to be caught in it! You can hardly appreciate what a drop of one or two thousand feet means until you look way down to the lake at the bottom of this mighty crater, six miles in diameter and nearly twenty in circumference. To quote the words of John Hillman, the leader of the party that discovered

Trails Through the Golden West

the lake in just the fashion above described: "Not until my mule stopped within a few feet of the rim did I look down, and if I had been riding a blind mule I firmly believe I would have ridden over the edge to certain death."

There it lies—a lake of an indescribably brilliant indigo blue, so startling in its color as to create the impression of artificial impregnation, filling the crater of an extinct volcano, 6177 feet above the level of the sea and having the remarkable depth of 1996 feet. As you look around, you may discover the marks of the fire remaining on those mighty walls—slashes of reds, browns, yellows, and grays, which, in combination with the unearthly blue of the water in which they are reflected, present an ensemble without a parallel in the world. The precipitous character of the crater may be gathered from the fact that there is but one trail down to the water, in all the twenty miles of its circumference. A boat-ride along the edge of the lake enables one to view close at hand some of the remarkable and contorted lava formations left behind from the tremendous cataclysm that created this beautiful spot. Make a visit also to the Phantom Ship and Wizard Island. The latter is a spectacular cinder cone rising nearly 800 feet above the water-level and is supposed to have been the only vent left after the terrific explosion that shattered the original peak. As may be surmised, it rises from the very depths of the great crater itself and has its own diminutive crater, over 100 feet deep by 500 in diameter. The Phantom Ship is a craggy island lying near the southern shore, whose outline suggests an old-time sailing vessel and which, when viewed in certain lights

Mount Shasta and Crater Lake

against the background of the cliffs, disappears from sight; hence the name. Both of these islands may be visited from the boat, and offer a timely invitation to the ambitious climber to view the surrounding scenery from their limited heights.

The supposed origin of Crater Lake is, in retrospect, fully as interesting as the lake itself and casts an illuminating sidelight on the prehistoric volcanic activities of the Pacific Coast. In that dim period long before the advent of man, the western extent of the North American continent was dotted with active volcanoes, all the way from Mount Baker on the north to Lassen on the south: Mounts Rainier, St. Helens, Adams, Hood, Jefferson, Three Sisters, McLoughlin, and Shasta. All of these have been extinct for untold centuries, with the exception of Mount Lassen, who still "smokes his pipe" occasionally.

Among these monster fire-eaters is known to have been an eleventh peak, supposedly of greater altitude than any of the rest, upon which the scientists have bestowed the posthumous name of Mazama, and whose mighty vent is now occupied by Crater Lake. It has been estimated from the configuration of the heights surrounding the lake, that Mount Mazama pushed his belching peak fully 16,000 feet into the air, "riding herd" on all his satellites north and south. Four times loftier than Vesuvius, was this mighty spouter—far greater than Mauna Loa in the Hawaiian islands and half as high again as famed Mount Etna. He is supposed to have survived the Glacial Epoch. Precisely how the end came is what has puzzled the scientists. Some be-

Trails Through the Golden West

lieve that there is every evidence of the internal collapse of Mazama's cone—that the flow of lava down the slopes of what is left of the mountain indicates that it was a case of lava breaking through the walls instead of the characteristic eruption. But considering that that whole stretch of country from Mount Lassen north, including California, Oregon, and Washington, is covered with volcanic ashes to unknown depths, and that the sides of Shasta and Rainier are practically as deep in lava-flow as Mazama, this theory has its opponents. In any case, it is clear that on the day when Mount Mazama lifted up his voice for the last time, he either blew off his head to the tune of a section nearly 10,000 feet high by twenty miles in circumference, or else he swallowed it. Then followed what no scientist has ever undertaken to explain: the seeping in of that amazing lake of blue water. Where it comes from, nobody knows. How it manages to maintain, year after year, a level of over 6000 feet above the sea, and that appalling depth of 2000 feet, is equally mysterious. There are no springs at that elevation that could possibly fill a crater six miles wide and 2000 feet deep. If the supply is subterranean, minus any apparent inlet or outlet, and if, as we know, water always seeks its level, what is the strange conduit or siphon employed by Nature, and what the source of supply that always keeps this inexpressibly beautiful and pure body of water at a uniform level in that vast crater? From time immemorial the Indians have asked these questions, and that fact incidentally explains why they have always avoided the spot with superstitious fear and long disclaimed any knowledge

Mount Shasta and Crater Lake

of it though actually they had known of it for years.

In order that you may enter into a complete enjoyment of this apparently never-to-be-explained marvel, the Government has constructed a thirty-five-mile motor road around the crater where you may park your car and exercise your camera to your heart's content—morning, noon, or night—in the dawn and sunset changes. You will find they all differ, and you will have difficulty in deciding which you like best. While the National Parks System has provided a luxurious lodge on the rim overlooking the lake, with an abundance of camp-grounds in all directions, the railroad has wisely made all tickets north and south on the Shasta Route interchangeable for the benefit of visitors.

When you arrive at Portland you may spend one glorious day in a sixty-five-mile motor ride out the Columbia River Highway, going around Mount Hood over a fine mountain road. Lovely Multnomah Falls will make your camera hand tingle. And nearby is a narrow canyon leading through the mountain walls, where—if you don't mind risking wet feet—you will come upon a lovely cataract in a setting of bright green. Your driver will know where it is. Probably it has a name, but I have forgotten it.

If you are planning to go on to Seattle, and have a couple of days to spare, a motor run of fifty-seven miles out to Mount Rainier will be amply justified. It will necessitate a stop-over for at least one night. Rainier—"the mountain that was God," as it has always been called by the Indians—is another monster that blew off his peak in the dawn of time. The ride through Para-

Trails Through the Golden West

dise Valley under lofty branches of pine, cedar, and hemlock, with a distant view of the Tatoosh Range and possibly a bit of a walk up the lower slopes of the mountain itself, will provide memories for a long time. On a bright day, the summit of Rainier may be seen for 150 miles, and it is a glorious sight from Seattle. The only difficulty with this magnificent mountain is that he hides himself, and so does not convey that feeling of intimacy that is characteristic of Shasta. Unless you are an experienced mountain-climber, do not attempt Rainier.

If your plan is to retrace your steps southward after looking around Portland, this is your opportunity for taking that very well worth-while drive through the Redwoods, along the Oregon coast. A night's ride will bring you to Grant's Pass on the Southern Pacific, where a roomy motor-coach awaits your arrival; and you are off for 176 miles of a highly picturesque detour. Ascending the Siskiyou Range, at whose summit, 2500 feet above sea-level, you cross the State line into California, you descend by easy stages over a magnificent roadway, through miles and miles of the loftiest and most gigantic of the famous Redwoods, some of which attain a height of 375 feet. In and out you go, up hill and down dale, past roaring mountain streams where you could "snake 'em out" in five minutes if you had your rod with you; through endless cathedral aisles of trees meeting overhead, with luxuriant growths of fern about their bases. The sunshine streams through the tree-tops and dapples the roadway—though sometimes the tree-tops are so thick that the sun doesn't come

Mount Shasta and Crater Lake

through at all. The coach has windows in the roof and whatever there is to be seen overhead is yours for a glance. Emerging from the Redwoods, the road winds along the coast-line, about 150 feet above the sea, and here the roar of the Pacific breakers drowns that of the motor. This constitutes one of the most delightful motor-coach rides that are to be found in the West, and it covers the distance in only a few hours more than are required to go by train.

Glacier National Park

TO ATTEMPT to tell the marvelous story of Glacier National Park without some reference to geology would be comparable to performing *Hamlet* without the Dane. So I am going to assume that you know as little about this amazing "Backbone of the World" as I did on my first visit—as little, indeed, as do most of the thousands of tourists who make a brief sojourn in this haunt of mystery and beauty every year without really appreciating its wonders.

Know, then, that Glacier National Park is the most prodigious exhibit in the world of what is known as a "fault." Geologically speaking, a fault is a crack or a fold in the earth's surface, where the land on one side rises or sinks while that on the other remains stationary. This is what causes earthquakes. Such a fault is just as likely to take place on the bottom of the ocean as on a mountain ridge. It sometimes happens that the pressure exerted in the bowels of the earth, which causes the fault, results in the rising land being thrust laterally over that on the other side of the crack or fold, thus creating what is known as an overthrust.

Glacier National Park

This is what happened in that portion of the Rocky Mountains that lies in the State of Montana just south of the Canadian line. This territory of over 1500 square miles was set apart by the National Government in 1910 as Glacier National Park, and thus there was thrown open to the traveler some of the most magnificent mountain scenery in the world. The commencement of this tremendous overthrust, according to the scientists, dates back millions upon millions of years. Unlike an earthquake, the process was so gradual that the land rose at the rate of approximately an inch a year. Infinitely slow though this upthrust was, on the western side of the fault, there was a terrific relentlessness about it that appalls the imagination. The beautifully tinted rocks in red, green, buff, brown, and orange, lying in the upper strata of the mountain peaks by which you are surrounded in the park, are Algonkian in character (next to the Archean the oldest known) and were laid down as ooze and sediment at the bottom of prehistoric seas in the very dawn of Time.

As the rocky crust of the earth was thrust upward from the depths, the consequent overthrust of this tremendous mass was distributed in the form of mountainous rocky ridges, extending thirty to sixty miles away and lying atop the prairie lands of today which constitute the eastern extent of the park itself. And here we have another wonderful paradox, in that this tremendous outpouring of rocks is superimposed upon a foundation that is millions of years younger than the overthrust itself. Here is in very truth an epic drama of Nature's marvels that is entirely without parallel.

Trails Through the Golden West

To find on a mountain-top, 5000 feet above sea-level, rocks and fossils of the earliest forms of life which originated, eons and eons ago, at the bottom of a prehistoric ocean thousands of feet below the surface—it is this singular phenomenon that puts Glacier National Park in a class by itself.

The coming of the Glacial Age pyramided the natural wonders of this earth in the making, as they were manifested in the vicinity of this overthrust. Imagine great accumulations of ice filling the valleys of this spacious hinterland and grinding out the mountain-sides into immense cirques thousands of feet deep, by miles in length and breadth; gargantuan "pot-holes," in which the ice has been replaced by beautiful lakes of heavenly blue, topped by glistening glaciers, now thousands of feet overhead, the unearthly brilliance of which led the Indians to name the place the Land of Shining Mountains.

Think of the prodigality with which Nature has distributed her gifts. Here in this incomparable display of rugged grandeur there are ninety glaciers, nineteen principal valleys, three hundred mountains, two hundred and fifty known lakes, forty rivers and creeks, with trails, passes, and waterfalls unnumbered. And this vast aggregation is the result of that overwhelming fault and overthrust which, in the course of untold millions of years, came steadily up from the bowels of the earth and veritably cascaded over the eastern portion of the mountain range to the plains below. It is these features that impart that appearance of immeasurable age to this corner of the West. With all its beauty, its stun-

Glacier National Park

ning magnificence, its towering glaciers gleaming from their lofty perches on the mountain slopes, its lofty passes, and bewilderingly blue lakes, we feel the strong impression driven in on us that Time has been turned backwards; that in some mystical and inexplicable manner we have reverted to the very beginning of things. It is an awe-inspiring impression, as if we had been admitted into the very sanctum sanctorum of the Great Architect himself. The traveler who approaches reverently the pathway to such immanent glories departs with infinitely greater rewards than he does who is wholly materialistic.

This never-to-be-exhausted Rocky Mountain land of adventure lies astraddle of the "backbone of the world" on the main range of the Rockies in Montana, stretching out to the eastward and the westward from the height of land which before long will be crossed by the excellent motor road now in construction by the National Parks Service. The traveler may approach from either the east, at Glacier Park station on the Great Northern Railway, a ride of thirty hours from St. Paul, or from Belton station on the west, a twenty-hour ride from Seattle. For the visitor who has a fixed itinerary, comprehensive trips by motor-cars and lake launches have been planned on both sides of the Continental Divide, taking from one to four days each, and excellent hotels and chalets await him at the end of each day's jaunt. Supplementing this mode of travel are saddle-horse trips of from one to five days for those who prefer them.

The attractive feature of both these methods of travel is that they may be extended indefinitely for

Trails Through the Golden West

those who have the time to spare, from any one of the various points of arrival and departure. When the motor road across the divide is completed it will be possible for the traveler to enter the park from the east at Glacier Park station, on a widely inclusive detour and leave it at Belton on the west, or vice versa.

Among all these possibilities of joyful wandering there is one outstanding experience that no traveler with sufficient leisure and appreciation of a good saddle-horse should overlook: a ride along the crest of the divide from which he may view the endless panorama both east and west. At certain places along this lofty pathway the glaciers of olden time, located in close juxtaposition on either side of the divide, carried on their grinding operations to the point of nearly breaking through the rocky walls that separated them, and here the width of the trail is a matter of a few feet. In other spots the break was actually made, creating some of the most awe-inspiring mountain-passes in all the Rocky Mountain system. This is another of those remarkable features that differentiate Glacier Park from all other mountain scenery in the United States.

But these places can be approached only on horseback. Out of the seventy-thousand-odd tourists who visited this place in 1930, there must have been a good many who had the time and the ability to make a pack-train trip into those gorgeous upper reaches of the range and who neglected their opportunity. Indeed you can pay altogether too high a price for the hum of a motor and lose what Nature has to offer you. And again, if only you could know how many great areas are re-

Glacier National Park

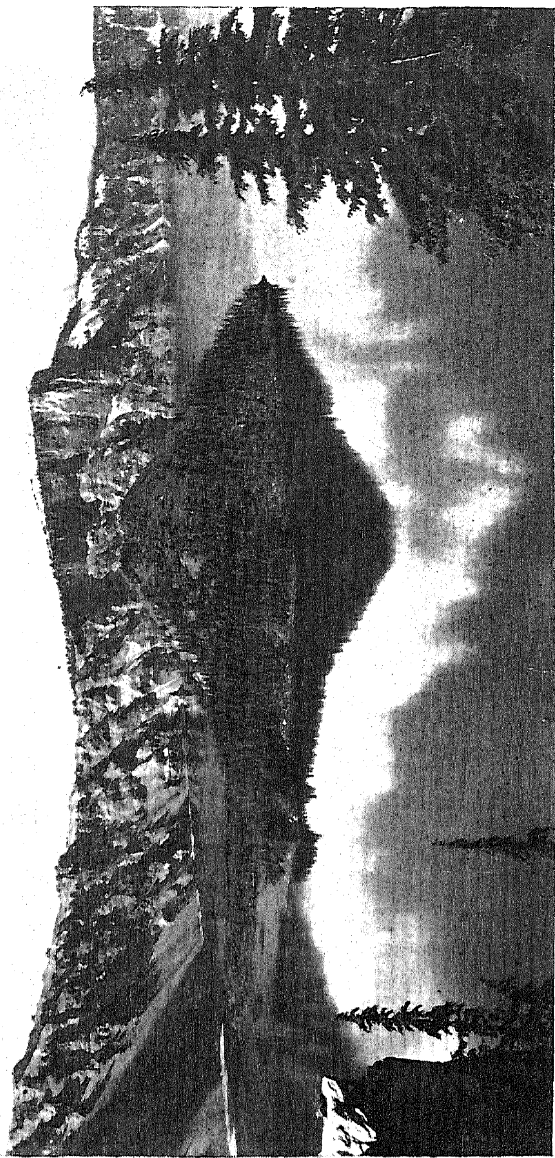
served by the National Parks Service from the intrusion of main-traveled highways, and thus are peculiarly attractive to travelers afoot or on horseback, you and your camera would set off for some of these fine sky-trails, where it is sometimes possible to induce a mountain goat or a Rocky Mountain big-horn to pose for his picture. Do not think for a moment, however, that I am depreciating the real advantages of a fine motor highway through such a sanctuary; it represents a splendid introductory move, one that makes it possible for many more persons to enjoy travel in the wilderness. But the real lover of Nature will hardly be content with that mode of travel when finer ones are offered to his more energetic moods.

Owing to the widely distributed and inexhaustible supply of water from the numerous glaciers in the park, this section of Montana has from time immemorial been one of our notable haunts of big game—mountain sheep, goat, elk, moose, black and white-tailed deer, grizzly and black bear; as well as lesser animals such as lynx, beaver, otter, marten, mink, whistling marmot, and porcupine. This is why it was always regarded as a precious heritage by the Blackfeet Indians, from whom the National Government purchased it for the handsome sum of \$1,500,000, and who still maintain their tribal home in the vicinity although their hunting days within park limits are over. With 1500 square miles of sanctuary, the four-footed wilderness folk, having nothing worse than the camera to face, are fast becoming accustomed to the presence of their two-footed brother, Man. And I can assure the amateur photographer that there is

Trails Through the Golden West

a greater thrill in stalking these wary wild animals with the camera than there is in doing it with a rifle—though pot-shooting them with a camera from an automobile on a traveled highway would, of course, hardly rank as big-game photography. If, however, you make camp in the upper reaches of the hills and settle down quietly for a few days, until the animals lose their shyness, you will get results that will thrill your soul. Fortunately, these upper reaches are not to be approached by motor-car. Indeed, if you could get to them by that method, the gasoline odor would quickly depopulate the neighborhood. Monoxide gas doesn't mix very well with mountain air in a big-horn's carburetor, and he will put the Continental Divide between himself and you so fast that you won't get even a glimpse of him—let alone photograph him.

The beauty spots of this gem of the wilderness are so numerous and so varied as to render a detailed description out of the question. There are a select few, however, which the National Parks management has linked in a most highly satisfactory combination of motor highways and lake transportation; a gorgeous succession of glacier-studded peaks, surrounding sapphire-blue lakes like celestial diadems; vast valleys stretching away into the blue haze of distance; trails that lead from the water's edge over lofty passes from which one gets a perspective so exquisitely soft and tender as to defy description. It seems almost impossible to imagine that such supernal glory of mountain peak, lake, and canyon could have resulted from the terrible rigors and life-destroying onslaughts of the



Crater Lake occupies the abyss formed by an extinct volcano. It is over five miles in diameter and more than a mile above sea level.



Hileman

Glacier National Park has over two hundred mountain lakes, all of them of extraordinary beauty, shot with sapphire blue and diamond fires when the sun is at its zenith.

Glacier National Park

Glacial Age. All the more reason for a trip to the summit of the divide. It is the only spot from which an all-inclusive view may be added to your store of memories. Then you will see what fine engineering discrimination has been exercised in making it possible for you to cover so much of this virginal beauty in a few days.

Off to the west lies lovely Lake McDonald in the hollow of the Belton Hills, not far from the railway, with its tumbling inlet reaching back to the Glacier Wall beneath your feet and its excellent hostelry awaiting your arrival. To the south, Gunsight Lake nestles at the foot of its lofty mountain pass of the same name. Sweeping northwesterly, crest after crest of transverse ridges divide as many valleys, each containing its own lovely lakes, gleaming like snowdrops in the morning light: Logging Lake, Quartz Lake, Bowman Lake, gorgeous Kintla Lake and Glacier; while to the north, across the Canadian border, Waterton Lakes lie glittering in the sun.

Turning to the east with that indescribable "greater glory" penetrating your whole being, your eyes fill, your throat tightens, your heartbeats quicken, as you realize what all the inspired descriptive writing in the world could not convey to you: the apotheosis of natural beauty as revealed in the combination of shimmering blue lakes lying in the laps of verdant valleys and surrounded by flame-tinted, forest-clad mountain ranges, with a cloud-flecked sky of sapphire over it all. If you have been one of the travelers whose steps turned toward Europe before you made the acquaintance of the natural wonders in your own country, you will ask your-

Trails Through the Golden West

self, "How *could* I have done it?" Never mind. The unearthly loveliness of Two Medicine Lake and St. Mary's faces you, Swiftcurrent lies at your feet, and you are at home at last.

Visitors who have seen the park have often asked me which spot in it I liked best of all. The query is in itself a tribute to the place. When a place has so many lovely spots that one has to stop and think which he likes better than all the others, that's a testimonial. And it is a hard question to answer, because each of them is the loveliest by turn, depending on the time of day, weather conditions, and other factors. A glacier lake, for instance, changes its aspect under the ever-varying movements of light and cloud—it is one thing in the morning, another at noon, and something quite different when twilight comes on. The casual visitor seldom gets more than two views of any spot: when he arrives, and when he leaves. But however brief his contact is, he is bound to see some of the places at their best moments, and to carry away from them a precious and ineffaceable memory-picture.

Artists are particularly delighted by the gigantic mountains of deep red argillite, which in the brilliant sunshine yield a dozen varying tints, accompanied by the blue of the sky and the greenish glint of icy glaciers, reflected in a jewel of a lake at their feet. Imagine Swiftcurrent Lake, surrounded by six towering glacier-clad mountains from 3200 to 4700 feet above its surface, all striped with jade-green and gray. Try to picture the close of day, with the rays of the setting sun slanting through ragged holes in lofty crags worn

Glacier National Park

through by the attrition of the elements during thousands of years.

From a seat on the veranda of Many Glacier Hotel see how many glaciers you can count without changing your position. Then take your camera and wander up the slopes until you reach a point that will approximate a horizon line of 180 degrees, and note what your finder reveals. Journey to the foot of Two Medicine Lake, an hour's ride from the Glacier Park Hotel, and feast your eyes on one of the noblest peaks on the continent, in a setting regal beyond words—lordly Mount Rockwell, monarch of the landscape. Then back off sufficiently to include those boulders along the lakeshore in your foreground, and you will get a photograph to be proud of. Take the boat trip on Upper St. Mary's and try to visualize yourself in the birthplace of the mammoth glacier that hewed out that amazing gorge for the benefit of posterity, and be thankful that you are part of that posterity.

If you are fond of perspective in a mountain and lake view, don't fail to visit the north end of Waterton Lakes and train your camera down the middle of it, just between "wind and water." If you like a bit of civilized stuff in a wilderness picture move around to the end of the lake, far enough from the shore to include the highway and admit the Prince of Wales hotel into the view; it will improve your composition. Then move down to the southern end of the lake and pay your respects to royal Mount Cleveland, the tallest peak in the park. I tell you emphatically that if you are an artist with your camera—or even a neophyte, for that matter—you will

Trails Through the Golden West

get unimagined thrills out of the various combinations of pigmented rocky peaks, laving their feet in blue lakes. Grinnell Lake and Glacier offer an opportunity for a close enough approach to study glacial action without undue risk. These two gems lie within seven miles of Many Glacier Hotel, and experienced guides, equipped with ropes and axes, are furnished for the trip. Grinnell Glacier is a sort of epitome of the whole glacial system of the park; and while the climb is strenuous, it will amply repay you in delight and interest.

Glacier Park has some picturesque Indian nomenclature. Think of a glorious mountain peak being named "Going-to-the-Sun"! When you look upon it for the first time, you will understand why the imaginative Blackfoot gave it such an eloquent title. You can almost see the spirit of the great peak spreading its wings and rising to high heaven, disdaining earthly things. You will feel humble enough as you follow the awful lines of that spectacular peak from the jewel-like lake at its foot to the sky-piercing pinnacle above.

Plan to visit Iceberg Lake before you leave. It is indisputably Glacier's wildest and most impressive view. An appalling cirque, horseshoe in outline, encircled by sheer cliffs 2700 to 3500 feet high, with gleaming glaciers hanging to their flanks, which feed a steady, daily diet of diminutive icebergs to the sapphire lake at its foot. Such enchanting views are rare, even among the highest peaks. Some years ago I traveled three days off the trail to see a similar sight, and I felt well repaid for my effort. But what I saw didn't compare with Iceberg Lake. You can make the trip in a few hours.

Yellowstone Park, Our Great Wild-Animal Sanctuary

IN ITS triple appeal to various kinds of persons Yellowstone, oldest and probably most famous of our national parks, stands alone, unmatched. "Rather a large order!" some sophisticated globe-trotter may comment; "sounds like the opening sentence of a high-power advertisement." Granted—and as much more than that as you feel like adding.

For those who seek the purely spectacular there is the greatest display of geysers in the world;—there are more of them here than there are altogether in the rest of the world.

For the lovers of the beautiful and majestic in Nature there are Yellowstone's gorgeously painted canyon, its splendid cataracts, its unparalleled approaches; exquisite Tower Falls, Teton Mountains, and Jackson Lake; and the views from the Continental Divide and from the summit of Mount Washburn.

For the lovers of wild animals in sanctuary—animals that have forgotten what fear means—there are ante-

Trails Through the Golden West

lope, elk, moose, deer, grizzly and black bear, and the shy Rocky Mountain big-horn.

If you doubt whether there are three such distinct classes of people to whom Yellowstone appeals, start a little conversation with some friend who has just returned from a visit to this composite wonderland and note what particular feature comes to the front. If he mentions all three at the outset, that simply proves the existence of a fourth class.

As a nation we have come a long way since the discovery, in 1810, of the Yellowstone hot springs, by John Colter, a guide with "Pathfinder" Frémont and the first white man to set foot in that territory; since the finding of the geysers in 1830 by that redoubtable old trapper-scout, Jim Bridger; since Firehole Geysers Basin was reported in 1840 by Warren Ferris, a clerk in the employ of the American Fur Company—discoveries, all of them, that resulted in their finders' being definitely branded as good-natured romancers. In fact, it was not until the publication of the report of the Washburn-Langford expedition in 1870 that the truth of these earlier statements, dating back sixty, forty, and thirty years respectively, was established to the satisfaction of our officials in Washington. The consequence was the creation of Yellowstone as a national park in March, 1872. A later extension of its boundaries authorized by the Congress in March, 1929, has made Yellowstone the largest of the national parks, with an area of 3426 square miles or 2,192,640 acres.

Yellowstone Park is located in northwestern Wyoming and extends into Idaho and Montana. Generally

Yellowstone Park

speaking, it is an immense plateau, volcanic in character, and lies 8000 to 8500 feet above sea-level. Of its fifty-six well-known mountain peaks, thirty-eight are over 10,000 feet above the sea. These and its forty-two lakes, one hundred and sixty streams, twenty-six waterfalls, and sixty-five geysers—most of which are playing all the time—offer the visitor the greatest “continuous performance” to be found on any natural stage in the world. To these add several thousand elk, more than a thousand buffalo, innumerable deer, several hundred moose (steadily on the increase); numerous herds of the big-horn sheep, hundreds of antelope, and grizzly and black bears galore—and we have a zoölogical garden without parallel.

There are six distinct geyser basins, in which the crust is so thin in places as to be unequal to the weight of a man, indicating what a narrow margin lies between the danger of actual volcanic conditions and safety; pathways have been constructed over them for the benefit of the visitor. These basins are spouting steam and hot water continuously and suggest a vast submerged steam-plant with a thousand vents to relieve the high pressure. Some of the “blow-holes” are terror-striking, with their menacing roar and rush that threatens momentarily to rend the whole landscape.

Six hundred and fifty miles of excellent motor highways connect these geyser basins and the picturesque lake and mountain spots that lie between them. To see them all requires four and a half days of an itinerary broken only by the time the traveler spends in bed. But he can prolong this indefinitely by stop-overs at

Trails Through the Golden West

fixed points whence nearly 900 miles of horseback trails lead to the summits of a dozen lofty peaks. And this is about the only way in which he can get more than a passing view of the wild animals that roam so fearlessly over this sanctuary; for the bear is the only member of the Yellowstone family who is found frequently around the hotels and near the motor roads, his keen nose telling him where he is most likely to find food. But even if a bear does approach your car, begging for food, don't imagine that this experience is what is meant by seeing the wild life of the Yellowstone. It is among the upper reaches of the mountains that you will find the mountain sheep, the shy antelope, all the deer family, and the less sophisticated bears. Here they are not pestered by the odor of gasoline or by the attentions of the peanut-offering tourist. Many persons mistakenly believe that feeding a bear will make him friendly. On the contrary, if he likes the food you give him he is sure to want more, and when that is not forthcoming he is quite likely to go after it—he has been known to maul the contents of the car in his search, frightening the passengers and sometimes even wounding them. No—this is anything but a sure method of making friends with a bear, and the traveler will do well to heed the warning that is everywhere displayed: **Don't Feed the Bears**. Those who have ignored it have sometimes landed in the hospital.

The real charm of closer intimacy with these denizens of the wilderness lies in getting near enough to photograph them in their natural haunts—not on a garbage-heap nor smelling around an automobile on a

Yellowstone Park

macadamized road. And, with patience, this can be done. It is amazing how absolutely fearless of man the wild animals grow when in sanctuary, if the effort to make friends is not overdone. All the wild folk are shy and nervous and ready to jump at the slightest invasion of their vested rights. If you don't force matters by being in too much of a hurry, you can approach within twenty-five feet of a mountain sheep, his massive, curling horns forming an ideal frame for his inquisitive and beautiful eyes. If it happens that the wind is blowing from him towards you and he therefore isn't obliged to continue sniffing the menacing odor thrown off by the animal Man, so much the better. Also, the less you move, the sooner he will lose his nervous unrest. If you will have the patience to sit down under a tree, with your handkerchief suspended from a branch, you may have a caller before the day has passed. For your own personal re-assurance, I may say that I am but relating some of my own experiences, which are not remarkable at all. Any one can have the same kind, with a little patience.

The behavior of wild animals in sanctuary is a subject of never-failing interest. In Yellowstone the boundary of their vast retreat is a double row of blazed trees. You can imagine how far-flung that "fence" must be to encircle 3426 square miles. And yet all of them know when they have stepped across that invisible boundary that spells protection. In addition, the hunter who approaches within two miles of the Park limits is quite likely to run into one of the rangers, with a chance of a jail sentence of thirty or

Trails Through the Golden West

sixty days. The law also prevents the removal, by the hunter, of any animal which, having been wounded outside the Park limits, met death within them. Let that hunter beware who, pursuing his game in far-distant spots, thinks he can follow it across the line. A ranger with a pair of binoculars glued to his eyes is just as likely to be hidden on a remote mountain-side as in more frequented territory—indeed, more so.

The same instinct that leads the wild animals to recognize sanctuary in any section of the Park brings them down from the mountains in droves to the immediate vicinity of Park headquarters, rangers' cabins, and outlying ranches for hay in winter when their natural forage is buried beneath deep drifts of snow on the slopes, thereby saving themselves from starvation. You wouldn't think there could be men so base as to slaughter the lordly elk for his teeth in such circumstances. Yet it is only in the last few years that the Park rangers have finally driven out the heartless and inhuman poachers who frequented various out-of-the-way sections of the Park during the winter for that sole purpose.

To those who may wonder why I devote so much emphasis to the preservation of the Park's wild life, let me say that the time is not far distant when it will be impossible for us to see such animals as these anywhere throughout the West except inside of our national parks. Man's thoughtless destructiveness and commercial rapacity, expanding year by year with our increasing population, have decreed their extermination beyond all question. If the National Parks Service

Yellowstone Park

has accomplished nothing more than the creation of sanctuaries for our rapidly disappearing wild life, it has earned the eternal gratitude of every right-thinking man and woman in the United States. For you may be sure that, outside of the Park confines, your children's children will see very few of them, if any at all.

It would be difficult to imagine a more fitting introduction to the natural wonders of the Park than the brilliant, symmetrical, and gorgeously colored Mammoth Hot Springs, reached from Livingston, Montana, on the Northern Pacific Railroad, over a winding and highly picturesque roadway which rises 600 feet in the mile and a half from Gardiner Gateway to the Mammoth entrance. Enroute you will note an immense stream of boiling hot water rushing from a rocky cleft not far from the road and flowing into the Gardiner River. This is the accumulated discharge from the Hot Springs which finds its outlet through subterranean channels. Take note of the spot—it will afford an adequate idea of the voluminous outpouring of these spectacular blue springs, which flow over the edges of their exquisitely tinted and fluted terraces like a filmy veil. Throughout unnumbered ages these terraces have superimposed themselves, one above the other, in calcareous deposits, until today the whole stands 300 feet above the level of the ground. There is nothing quite like them in the world, and the absolute transparency of the hot water so definitely takes to itself the blue of the sky that it would seem to be impregnated.

It is a trifle uncanny to realize that sufficient volcanic heat lies close to the surface in this marvelous area to

Trails Through the Golden West

maintain at a boiling point a tremendous volume of water that materially heightens the temperature of the Gardiner River, into which the Springs flow. So it is all through the Park. All the geysers, the hot springs, the sputtering "paint pots" and boiling mud holes are just so many vents that allow for the escape of a volume of superheated steam which, if confined, would doubtless manifest itself in some gigantic eruption.

The fact can scarcely be credited, but it is true that the alabaster-like character of the lips of these immaculate terraces, occasionally exposed, arouse in a certain breed of tourist the irresistible desire to inscribe his name or initials on them. The Park authorities have devised an effective method of dealing with these morons which, at least, renders a second offense exceedingly unlikely. They establish his identity from the hotel register and despatch a ranger after him. He may be caught midway through the Park or just leaving from one of the established gateways; wherever it may be, he (or she!) is apprehended and brought back to the scene of his folly. There he is furnished with a pail of water, a scrubbing brush, and soap, and told to remove the offending inscription—or take a brief term in the calaboose as a public nuisance. Usually he plies the soap and brush, and when he has finished, he is allowed to proceed on his way.

For the special benefit of those visitors who observe the regular schedule, there is a small buffalo herd kept during the summer season, within a half-mile of Mammoth Springs. Think of a small herd of buffalo constituting a museum attraction to present-day travelers,

Yellowstone Park

and then recall that between fifty and seventy-five years ago, they were roaming over our great western prairies by the hundreds of thousands. Yes, we have learned wisdom just in time and now realize that the conservation of our wild life—even though belated—is far better than extermination.

The twenty-mile run from Mammoth Hot Springs to Norris Geyser Basin—the first stretch of the first day's trip—contains two outstanding features: Obsidian Cliff and Roaring Mountain. The first is composed of a sort of volcanic glass, black as coal. In the earlier days, the Indians gathered here to make arrowheads and other implements of war from this flint-like substance. Also you may be interested to know that the original roadway over which the car bowls along at the foot of the cliff was itself made from obsidian. It was built way back in the '70's by one of the Park's early superintendents, P. W. Norris, who distinguished himself as a builder of obsidian roads by heating the foot of the cliff with great bonfires and then dashing water upon it. Shortly after leaving Obsidian Cliff, your ears will be assailed by a deep roar, which increases in intensity as you approach a bleak, denuded mountain on your left hand: Roaring Mountain, in the peak of which there is a fearsome crater, from which a volume of steam escapes with a resounding roar that can be heard a mile distant. Up to 1902 this mountain was covered with a magnificent pine forest. Look at its naked slopes now, and see what may be accomplished by internal volcanic heat in the destruction of timber growth.

You must watch your step and hold your nose in

Trails Through the Golden West

Norris Geyser Basin. If you stray from the board walk, you will probably break through the brittle crust and have a pair of scalded legs as a result. The sulphur-laden atmosphere may be somewhat offensive to the over-fastidious traveler, but you will doubtless see it through. In comparison with the Firehole Geyser Basin toward which you are bound it is of minor importance, but it serves adequately as an introduction. Small geysers and various springs abound in every direction. Two remarkable steam vents, the Black Growler and the Hurricane, are continually changing their schedules with the years, owing doubtless to certain stoppages; these eventually clear up and the display returns to the old stand. That these geyser basins are anything but stationary is one of their attractions. A geyser that has been spouting regularly for years suddenly ceases, and a new one breaks out somewhere else.

Prominent among such is the Imperial Geyser, with its huge crater which, after years of inactivity, started to play with tremendous force in the summer of 1928, and maintained its prodigious flow for somewhat over a year. Every twelve to fifteen hours old Imperial would burst forth with a roar and spout to a height of 100 to 125 feet for periods of from four to five hours, throwing out 500,000 to 2,000,000 gallons of hot water at a single eruption. Not far from Imperial you come upon three of the big features of the Midway Geyser Basin: Excelsior Geyser, Prismatic Spring, and Turquoise Pool. Excelsior blew its head off in 1888, since when it has ceased to play. Its crater is now one of the largest hot springs in the world. No one knows, how-

Yellowstone Park

ever—the day may come when Excelsior will resume operations. To look at its crater, one would scarcely think that it could ever have been the vent of a geyser; it resembles a steaming lake more than anything else today.

Apart from the spectacular and tremendous eruptions of these various geysers, their real artistic attraction lies in their beautiful craters. That of the Great Fountain, for instance, in the Norris Basin, is in the shape of a two-foot-high pedestal composed of silicious deposit. Around the central pool on the surface of this broad pedestal are numerous smaller pools, filled with beautifully tinted hot water. The margins of these smaller pools are ornamented in a variety rivaling that of the Mammoth Springs. When the Great Fountain stirs itself, its stream reaches a height sometimes exceeding a hundred feet. This is one geyser that should not be overlooked by the traveler, and let us hope it may be spouting during your visit.

There are too many of these geysers to try to describe them all, and your own interest in this one or that, when you visit the Park, will naturally depend on which ones are active at the time. And this brings us to the consideration of the dominant attraction of the Upper Geyser Basin—everybody's favorite—Old Faithful, known the world over for its unfailing regularity year in and year out, ever since the discovery of the Park. Every sixty-five minutes, almost to the second, Old Faithful breaks forth with a subdued *swish* somewhat like the sound of water issuing under high pressure from a hose; at the outset with apparent effort, and

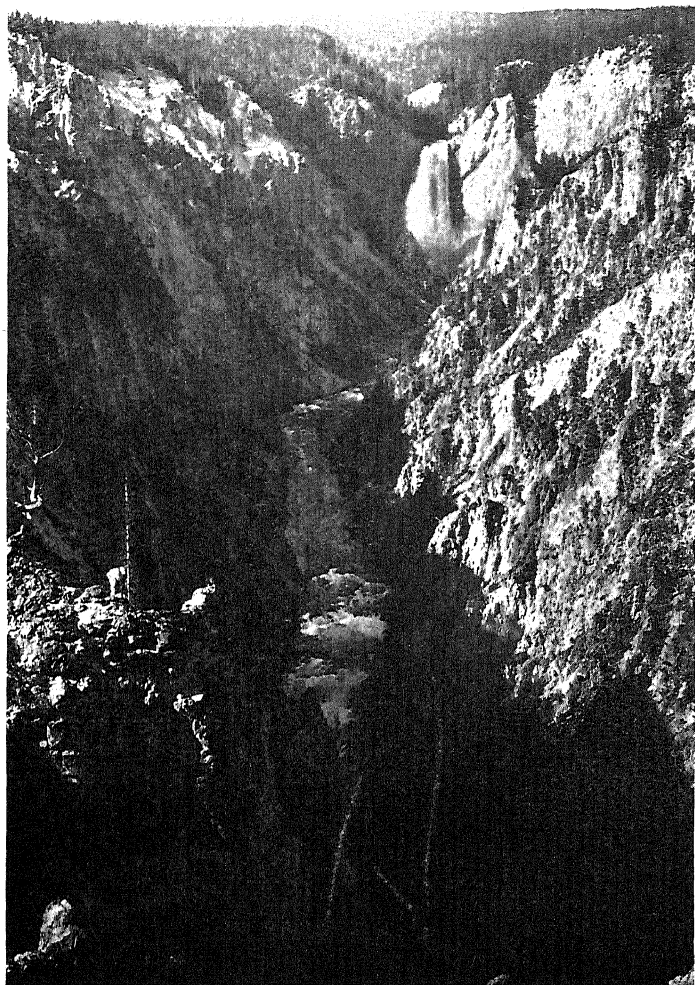
Trails Through the Golden West

then—just as if it had struck its stride—it lifts that scintillating stream high, from 100 to 150 feet, with a fascinating ease and grace. You can almost hear it say: “Thought I couldn’t do it, eh? Why, this is the easiest thing in the world!” And you feel like applauding.

You will wander around and admire the other great geysers, some of them monsters: Giant, throwing a stream that is the highest of any in the world—200 to 250 feet; Grand, Castle, Grotto, Beehive, Rocket, Giantess, Splendid, Riverside. But when you have seen all these you will return to Old Faithful for one last view before you depart. And no wonder. It is one of Nature’s sublime mysteries. No scientist can tell you when Old Faithful began to spout, though it certainly reckons its life by the thousands of years. It was the first geyser to welcome the white man to Yellowstone, and to our certain knowledge it has been raising its pellucid stream into the air every sixty-five minutes for more than a hundred and twenty years. In such circumstances even an inanimate thing can acquire a personality, even inspire something like affection—and so it has been with Old Faithful.

Exquisite gems of beauty, in various parts of the geyser basins, will be found in those indescribably brilliant springs, such as Prismatic, Turquoise, Sapphire, Morning Glory, and Punch Bowl—all with daintily fretted and beautifully painted borders enclosing blue and green waters of amazing resplendence. You will want to linger by them all, knowing that you can never see anything so divinely lovely anywhere else.

When you leave the geysers your route takes you



Northern Pacific Ry.

The Grand Canyon and the Great Falls are two of the most beautiful wonders of Yellowstone. The enclosing cliffs are colored with the most brilliant shades of red, orange, yellow and purple.



The forest rangers must constantly supervise enforcement of the game laws, the upkeep of roads, bridges and telephone lines, and the directing of fire patrol measures.

Yellowstone Park

to the summit of the Continental Divide, 8262 feet above sea-level, and from this outlook you get your first glimpse of Yellowstone Lake at your feet and the lofty peaks of the Teton Mountains on the distant horizon. If you possibly can, make a side trip to the Tetons and Jackson Lake at their feet. This "Jackson's Hole" country, as it has been familiarly called for many years, contains some of the most impressive scenery in all the Rocky Mountain system. Jackson Lake, in whose placid surface the lofty peaks of the Grand Tetons are gloriously reflected, is Golconda for the amateur photographer. These towering peaks, the highest of which has an altitude of 13,747 feet above sea-level, can be clearly seen from the Continental Divide seventy miles distant. It was the height of the Grand Teton and the ease with which it may be identified that made it a landmark for the trappers as far back as 1830. It is one of the most difficult mountains to climb of which there is any record.

The Government's action in setting aside the "Grand Teton National Park and Jackson's Hole" in 1929 meant that a good motor road would shortly follow. The mountain is but twenty-seven miles outside Yellowstone's limits and can be reached in a couple of hours. Many artists regard this remarkable view as second only to the Grand Canyon of the Yellowstone itself. During the "Winning of the West" the rugged character of this country made it an ideal hiding-out place for various criminals; hence the name Jackson's Hole, which it has borne for years and years. In addition to its natural attractions, it is the home range of the larg-

Trails Through the Golden West

est herd of elk in the United States, approximating 35,000. Excellent accommodations for visitors are available at Teton Lodge and Jackson Lake Lodge, near the shores of the lake. This is a richly worth-while side trip and should not be neglected by any one who can possibly manage it.

Yellowstone Lake, with a shore line of 100 miles, a depth of 300 feet, and an area of 139 square miles, and lying 7740 feet above sea-level, is next to the highest body of water in the world, its only rival being Lake Titicaca in the Peruvian Andes. It is fitting that such a magnificent body of fresh water should be separated from the Park geyser basins by a mountain range. Having said good-bye to the spectacular volcanic manifestations, you will, from now on, be drinking in all the lovely aspects of Nature in her gentler moods. An interesting perversity, however, interrupts a complete change of scene. As you round the lake, you pass one of those freakish volcanic vents, an odd survival in these sylvan surroundings and the only one in the vicinity. Its crater emerges from the surface of the lake a few feet from the shore. Here, if so inclined, you may hook a trout from the cold waters of the lake and, without changing your position, drop him while still on the hook into the boiling water of the crater and cook him. I have seen the thing done, but I never stayed long enough to test the flavor of a fish cooked under such conditions.

The day finishes at the Lake Hotel, near the outlet, where the far-famed Yellowstone River has its source. Trout-fishing galore here, boat-trips in all directions.

Yellowstone Park

But we are going on for a day or two at Yellowstone Falls and the Grand Canyon. The highway meanders for fourteen miles through beautiful and pastoral Hayden Valley, where you may espy a herd of elk or spot a bear snuffing along some stream in search of a fish. Now and then the river comes into view, and it isn't long before you hear the roar of the rapids mingled with that of the Upper Falls. You will wish to descend the steps leading down to the crest and see how that tremendous volume of water, having been compressed into a channel fifty feet in width, instead of flowing over the brink for its 118-foot drop leaps far out with a roar and a velocity that creates the impression of a rocky inclined plane underneath instead of a perpendicular cliff.

A ride of a few hundred yards brings you to the crest of the Lower Fall, revealing a magnificent vista—three marvelous features: the tremendous cataract at your feet, the flaming canyon walls beyond, and the rushing river below. Grandeur is the word for it—and yet you can take it in, in one view, practically in its entirety. The perspective is perfect. The river channel has widened out somewhat since leaving the Upper Fall, and the turmoil of constricted water has given way to a sweeping sublimity of approach that lays hold on the imagination. As you stand beside the mighty brink and look down into that deafening tumult 310 feet below, enveloped in clouds of spray that rise a hundred feet or more, your spirit is subdued and you fall silent.

Every color in the spectrum has a place on the walls of that overwhelming canyon. It is the despair of

Trails Through the Golden West

writers, painters, and photographers. Compared with other famous canyons its dimensions are not impressive: 2000 feet wide at the crest, 200 at the bottom, and 1200 feet deep. But measurements mean absolutely nothing here. What is impressive is the gorgeous, overpowering color unbroken from top to bottom by vegetation of any kind—a vast Persian rug, gleaming and scintillating, subject to momentary change as the sun travels across the sky and the fleecy clouds intervene to intensify or soften its kaleidoscopic mutations.

The ideal way out of the Park is over Mount Washburn, from whose lofty summit—10,317 feet high—you may take a comprehensive farewell of Yellowstone. From here you go on to hidden Tower Falls, with its sequestered canyon, and then a hundred miles to the Cody (Wyoming) entrance, through Soda Butte Canyon with its remarkable examples of erosion, and past herds of antelope. Your exit will lead you through stupendous Shoshone Canyon with its famous reclamation dam, which cost \$1,356,585 in 1908 and whose impounded waters have since that time made possible the raising of \$18,250,000 worth of crops.

As you skirt beautiful Shoshone Lake, just remember that the gorge at the head, now blocked by the celebrated dam, was worn through by the rushing waters of its prehistoric progenitor thousands of years ago. Strange that the hand of man should restore what Nature destroyed! The tunneling of the mountain into which the dam is built, in order to provide an exit through impressive Shoshone Gorge, was one of the dreams of Buffalo Bill when he founded the little town

Yellowstone Park

of Cody that lies a few miles beyond the dam. You will enjoy looking around this unspoiled town, with its atmosphere of the departed West. Perhaps Cody will be celebrating its annual rodeo at the time; if so it would be greatly worth your while to stay over a day and see the cowboys do their stunts. The road passes the magnificent statue of Buffalo Bill executed by the well-known sculptor Mrs. Harry Payne Whitney, on the way to the Burlington Route station. The little town has taken on a new lease of life since the completion of the Cody Highway into the Park and the consequent gratifying increase in the number of visitors to Cody, who use the Shoshone Lake route as an entrance and leave by way of Mammoth Hot Springs. Incidentally Deer Creek Pass, which is only fifty miles from Cody, is the entrance to that part of Wyoming where elk-hunting is at its best.

Zion Park and Bryce Canyon

AMONG all the brilliant color effects and all the curiosities of erosion in our scenic Southwest, there are few sights to surpass the glories of Zion and Bryce Canyons, upon which the National Parks Service has already expended over \$2,000,000 in rendering them accessible to the traveling public. These two national parks, situated in the state of Utah 215 miles south of Salt Lake City, constitute a portion of the sedimentary deposit left by a tremendous prehistoric lake—Bonneville by name—dating back to the Glacial Age millions of years ago. This lake included the western half of Utah and a portion of eastern Nevada and southern Idaho. It was about the size of Lake Huron and covered an area of 20,000 square miles, with a shore line of over 2500 miles and a maximum depth of over 1000 feet. The well-defined wave-cut cliffs and terraces on the slopes of the Wasatch Mountain Range, 1000 feet above the level of Great Salt Lake (which is the shrunken remnant of it), afford an idea of the size of this ancient inland sea, which poured its surplus

Zion Park and Bryce Canyon

waters into the Columbia River and was eventually dissipated by evaporation.

In the course of time there followed one of those great faults in the earth's crust. It is known as the Hurricane Ledge, and it resulted in the subsidence of over 2000 feet of a vast territory, leaving to the east a lofty plateau with ragged edges. This plateau, formerly the bottom of the great lake, displayed—as though on a magnificent canvas—exposed strata that were brilliantly colored with broad sweeps of bright red, the white of limestone, mauves, browns, greens and grays, superimposed on each other. And then the Mukuntuweap River began its work, cutting its way from the top of the plateau, like a huge band-saw, down through the cliff until it reached the level of the sunken portion of the fault to the west. Thus, Zion Canyon was hewed out in much the same way in which the Grand Canyon was dug by the Colorado River. The geologists tell us that this denuding process will unquestionably continue for ages to come, until the whole vast plateau of which Zion and Bryce Canyons are an integral part will be literally swept away.

Such is the picture that greets the eye of the visitor as he arrives by motor-coach after a fifty-mile ride from Cedar City through country that runs both of these stunning canyons a close second in point of unusual attractions. During the trip the highway has dropped 2000 feet from the level of the plateau to the foot of Hurricane Ledge towering overhead. You can scarcely realize, as you take in that blinding sweep of color, that the erosion of the general level of that

Trails Through the Golden West

lofty plateau has been keeping pace with the incessant gnawing of the river in dividing it into sections. There was a time when the summit of that 2000-foot uplift was anywhere from 2500 to 5000 feet higher than it is today. And in proportion to the amount of detritus swept from the upper level, the lower one has been increased in height. During the motor run one passes through many of the little Mormon farms, splendidly productive, with their rich soil and abundant irrigation. As the road turns to the north from the Virgin River Canyon, it enters a veritable Hell's Kitchen of extinct volcanic craters and vents, black and forbidding with ominous lava flows that look as if they might have been active within the year. A strange interlude, indeed, between the verdant greenery of the Mormon farms and the startling barrage of color that awaits your first view of Zion Canyon. Two great masses of stratified rock constitute the gateway to this remarkable spot: The Watchman, 2500 feet high, to the right; and the magnificent West Temple of the Virgin, a thousand feet higher, to the left—both afire with the sun's rays.

Farther to the north, closely grouped, rise four sightly peaks known as the "Four Towers of the Virgin," one of which is spectacularly capped with white limestone brilliantly stained with crimson, almost startling in its intensity and aptly named the Altar of Sacrifice. Contemplating the canyon from where you stand: seven miles long by a half-mile wide at the bottom and double that at the top, flaming walls on either side, with an elevation of 3000 feet, you will ap-

Zion Park and Bryce Canyon

preciate why Brigham Young, famous Mormon leader, came to name it "Little Zion."

(Anticipating a possible Indian invasion which might drive his people out of Salt Lake City, the redoubtable Brigham selected this hidden spot as a refuge capable of comparatively easy defense: a diminutive "City of God," so to speak. And you will concede that there is ample justification for the sacred atmosphere with which the Mormons invested it. It is indeed "Beautiful Zion," without exaggeration.

On the left as we enter the canyon, the wondrously eroded red walls are streaked with white. This odd combination is the famous Vermilion Cliff, which stretches away over the desert for a hundred miles, with a limestone deposit at this particular point. Spectacular indeed, two thousand feet of radiant red sandstone as a foundation for a thousand feet of white limestone. Such is the general color scheme throughout the canyon, which differentiates it from all others. Across the river on the opposite side, the Mountain-of-the-Sun rises in lordly splendor—the first peak to catch the rays of the rising sun, and the last to reflect its setting. Close at hand are the Twin Brothers and majestic East Temple, with its massive truncated peak winged on either side by a cone-shaped peak and an elongated pyramid of lesser altitude—an impressive mass of exquisite proportions. Opposite and still farther up, the canyon widens somewhat, forming the Court of the Patriarchs, dominated by a trio of jagged summits in red and white, somewhat suggestive of the famous Three

Trails Through the Golden West

Brothers in Yosemite Valley. They rear their lofty crests more than 2000 feet above the canyon floor.

Two miles beyond stands in lonely majesty the most striking and gorgeous peak of the whole region: The Great White Throne—a mighty truncated uplift of limestone 2500 feet in height, with a palisade-like base of blood-red sandstone, around the foot of which both the Mukuntuweap River and the roadway make a wide and impressive sweep. The contrast in colors is startling. It is the grand sentinel of the valley and seems to say: "Thus far shalt thou go and no farther." Across the river Angels Landing, almost as large but not so impressive, completes a magnificent pageant. From the gateway below, up to this point, Nature has staged a march of splendor that attains its climax in these two phenomenal peaks. There she conducts you around the great bend of the Mukuntuweap and past a projecting rock formation known as the Great Organ—a name whose aptness will be immediately apparent—and ushers you into the mystic Temple of Sinawava.

Here is an amphitheater of verdant loveliness, hedged in by walls that seem to close behind as you proceed. Contrasted with the stark beauty of desert rock with its unforgettable hues, this Eden-like spot is a distinct relief. Not that the colors of the encircling walls are less lustrous, but that they are softened by the reposeful green of deciduous trees and accompanying vegetation with which the floor of the enclosure is covered. In the center of this lovely open-air temple stand two massive stone pillars, the larger of which is called the Altar and the smaller one the Pulpit. You will note

Zion Park and Bryce Canyon

on one side of the Altar a remarkable human face in profile, known as the Guardian of the Temple, which undergoes various changes in expression as you draw near. Here the motor highway ends: a fitting close to a wonderful experience. The canyon continues, however, with steadily narrowing walls, through which a foot-path has been constructed beside the river for a mile farther, to a point where the stream fills the space between the vertical walls and further progress can be made only on horseback.

(Up to this time, you understand, you have been on the floor of the canyon, looking up 2000-odd feet. A survey having established the feasibility of trails on the plateau above so that the traveler might have a bird's eye view of this gorgeous hinterland, the building of one of the most remarkable motor roads in the United States followed in which some stupendous difficulties were overcome. This road has multiplied the pleasure of a trip to Zion Park a thousandfold. It is known as the Zion-Mount Carmel Highway, and its twenty-four miles cost the National Government the sum of \$1,500,000. The great engineering problem in the construction of this road was getting it up to and through the lofty cliffs overlooking the canyon. From its start on the floor of Pine Creek Canyon it ascends the shale slope in a series of six switchbacks, constituting three and a half miles of roadway and occupying an area a mile long by a half-mile wide.

At the summit of the zigzags the highway enters a tunnel a mile in length which closely follows the face of the cliff, through which six window galleries have been

Trails Through the Golden West

cut, opening on wonderful views of the heights across the canyon and the depths below. This Zion-Mount Carmel road forms a connecting link between the Arrowhead Trail and U. S. Highway No. 89 leading south from Salt Lake City, and enables the motorist to visit Zion and Bryce canyons successively, whether traveling north or south and without having to take the round-about way that was unavoidable before the road was constructed. It may also be reached from the southeast via Lee's Ferry Bridge over the Grand Canyon, passing through Fredonia and Kanab. By rail Zion is reached from either Cedar City (Utah) on the Union Pacific, or Marysvale, (Utah) on the Denver & Rio Grande Western Railway. Three lodges in the canyon are ample for the accommodation of visitors, for either a short or an extended stay.

Indicative of the scenic wonders of these two remarkable canyons and their surroundings, it is interesting to note that 190 miles of motor roads have been constructed, extending from Cedar City completely around Zion and including all that tremendously eroded country lying between the Pink Cliffs on the north (of which Bryce is a part) and the Vermilion Cliffs on the south. In between is an extensive territory containing several plateaus as spectacular as Hurricane Ledge, with a network of practically inaccessible canyons created by the same agency that wrought Zion. In the vicinity have been discovered a petrified forest, a number of cliff-dwellings, and some great arches, the most imposing of which is situated in Pine Creek Canyon in Zion Park—720 feet long by 580 feet high, cut like an in-

Zion Park and Bryce Canyon

taglio, ninety feet into the great cliff of which it is a part. In brief, the motor roads from Cedar City pass through a series of natural spectacles which are nearly as important as Zion itself and form a most fitting introduction to that diminutive gem.

In contrast with these purely desert conditions, Dixie National Forest, through which the motor road passes to the north, offers a restful change to the eye. Here we find a combination of pigmented rock and amazing fertility, rolling hills where pines and cedars flourish, and a plenitude of arable land that will produce almost anything a farmer could desire, including cotton. This country was settled by the Mormons in the '60's, since when it has changed but little. Many of these peculiar folk are still active on their diminutive farms that are kept alive by irrigation. Some of them have never seen a railway train. To them "Little Zion" still carries its religious flavor, and their lives are as completely dominated by the Mormon church today as they were sixty years ago. From the heights of Cedar Breaks, a vast amphitheater 2000 feet deep and covering sixty square miles, edged by the forest, to Bryce on the north or Zion on the south, the traveler passes through scenery so kaleidoscopic in character as to keep both mind and eyes concentrated on the passing show. He will have covered so much ground that the modest sixteen miles of motor roads within the limits of Zion itself will seem not very impressive. What that little jewel of a canyon lacks in road mileage, however, it makes up for in twenty-six miles of thrilling horseback trails and footpaths.

Trails Through the Golden West

It will be remembered that this general section of Utah lies from five to ten thousand feet above sea-level and that the most memorable sensations are to be had when we get up high on the peaks and plateaus and look off and down, instead of being pent within the limits of a canyon where—no matter how beautiful it is—we have to look up for the most part. It may therefore be said that in traversing Zion Canyon's seven miles and a half in a car, our sight-seeing has only just begun. In that vast Vermilion Cliff in the vicinity of Zion Canyon, there have been eroded eight other canyons, of great beauty, as a result of the Hurricane Ledge fault, some of them ranking a close second to Zion itself. And while there might possibly be a sameness in visiting them all on the same general level, there is no such possibility from a lofty view 2000 feet higher, among the peaks and the high trails where the erosion originally began hundreds of thousands of years ago.

Riding the horseback trail up to the West Rim, which leaves the canyon floor at Angels Landing, is a thrilling experience. Hewn in the face of almost sheer cliffs, winding through deep and awesome gorges in behind the canyon walls, it trails along over sandstone formation for two miles before it finds a suitable place to make its final ascent to the rim. I shall make no attempt to describe the view further than to say the traveler who limits himself to what may be seen from the motor-coach, on the floor of the canyon, can have no conception of what he is missing—rugged grandeur of mountain peak and erosion in the most brilliant and colorful setting imaginable. The East Rim Trail is not less in-

Zion Park and Bryce Canyon

spiring and affords the best view of the canyon itself from Observation Point. One of the footpaths, leading to the summit of Mount Zion, the highest accessible point on the West Rim, consists of 1400 steps cut in the rock and has a 2000-foot cable balustrade. No other government in the world has done so much for the traveling public as ours in bringing these hitherto hidden corners of amazing beauty within reach. And the steady increase in the annual number of visitors in the last ten years shows that the average American traveler is rising to his opportunity.

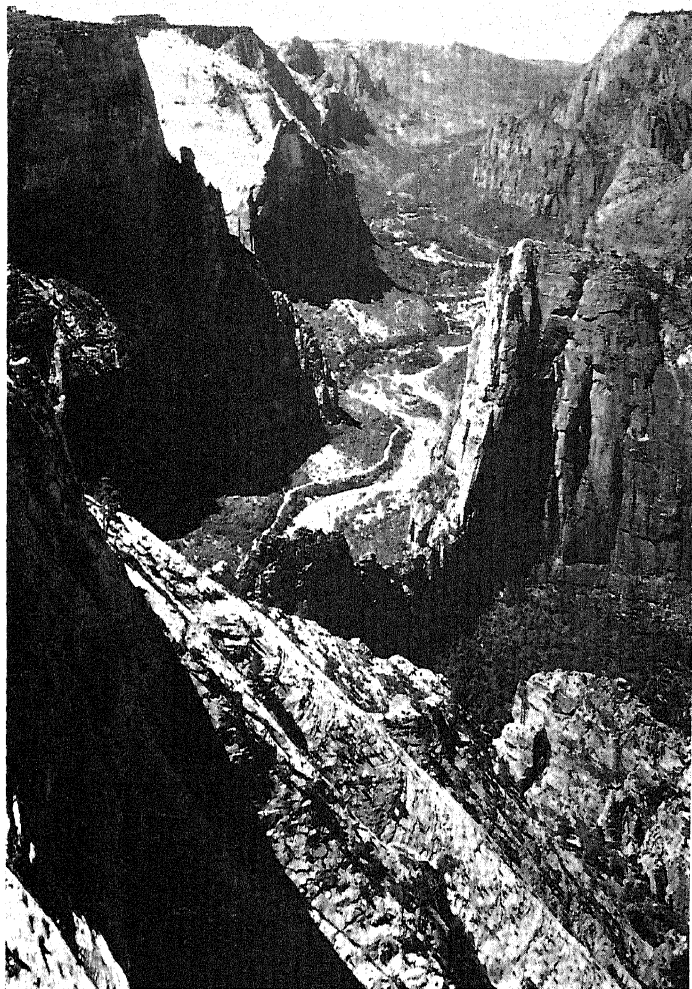
He is a venturesome writer who attempts a description of Bryce Canyon. Actually, Bryce is not a canyon, but an amphitheater three miles by two in extent, shaped like a huge bowl 1000 feet deep and filled with thousands upon thousands of intricately and delicately eroded figures: castles, spires, monuments, peaks, domes, fortresses, palisades, turrets, human figures, faces—every imaginable formation that the elements might have fashioned out of brilliant red sandstone and white limestone over tens of thousands of years. And such color! As a spectacle, I know of nothing with which to compare it. Strange to say, there are none of the hobgoblin forms so frequently seen in other examples of erosion. Here everything is beautiful—nothing disturbs the exquisite symmetry and loveliness of Nature's chiseling.

The softest combinations of bright reds, pinks and creams dominate the whole magnificent display. A superb cathedral, suggestive of Notre Dame in Paris, fills the eye in one direction. A life-like effigy of Queen

Trails Through the Golden West

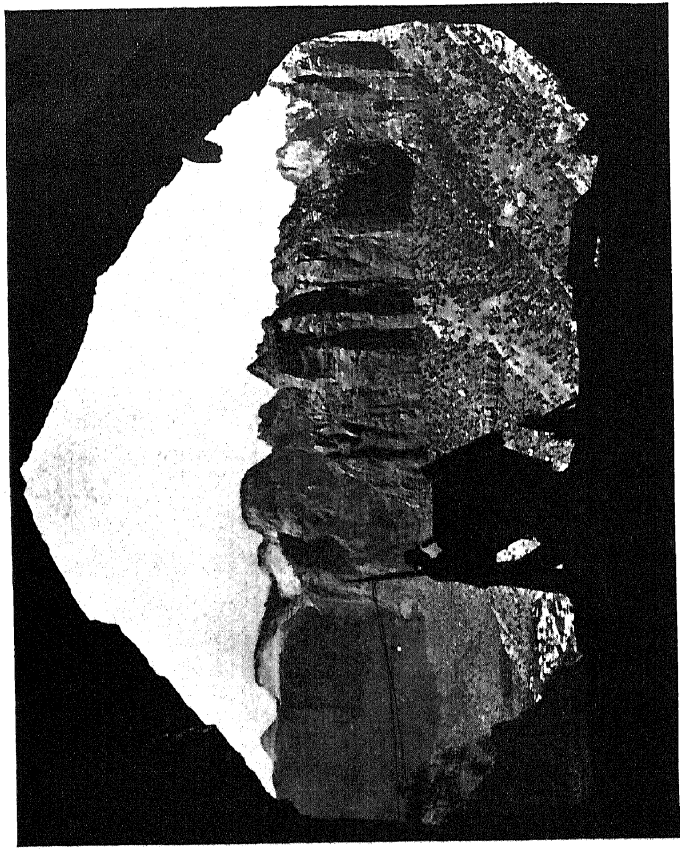
Victoria, mounted upon a rocky pedestal compels instant recognition in another. Weather-worn holes in lofty cliffs suggest oriel windows. Fascinating, elusive beauty of line and tint. From the gorgeous perspective of that fretted rim, nothing has any solidity—it is more suggestive of a luminous painting thrown upon a screen, which might fade at any moment. If St. John, in his Apocalyptic vision on Patmos Isle, had witnessed such splendor as this, he could have declared with equal fervor: "I saw a new heaven and a new earth." If you are one of those who dislike anticlimax, leave Bryce Canyon for your final view and then close your eyes until you are well beyond the limits of that enchanted spot.

Here again the National Park Service has distinguished itself in the carrying out of a series of horseback and foot trails down the slopes of the amphitheater where the visitor may study these amazing formations close at hand—and he should not leave the place until he does. There is an intensity about this radiant desert scenery, accompanied by great heights and depths, blazing color, and the curiosities of age-old erosion, that leaves one breathless. And the warning must be repeated that the traveler must not overdo it, must not try to see too much in a short time, or staleness will be the penalty. Take your time, look on these wonders with the eye of the spirit as well as the physical eye, and Nature will reveal herself to you.



The great red and white gorge of Zion Canyon is about fourteen miles long, varying in width from about a mile to the reach of a man's outstretched arms.

Galleries built in the tunnel on the Zion-Mt. Carmel Highway open onto the Canyon and offer a series of frames for magnificent pictures.



The Painted Desert Country

“**E**L PINTADO DESIERTO” is the name that Coronado and his swashbuckling *conquistadores* gave this country nearly 400 years ago. It comprises more or less the northern middle portion of the State of Arizona, including the Navajo and the Hopi Indian Reservations, and is bounded on the west by the Grand Canyon of the Colorado. Broadly speaking, however, it might be said to embrace that tremendous expanse of country extending from the lower half of the State of Colorado on the north to the northerly portion of Mexico on the south, involving all of New Mexico, Arizona, Utah, Nevada, and a goodly section of California. In brief it is that vast territory which, owing to the prehistoric buckling of the earth’s crust, subsided about 10,000 feet and lay quiescent for a few millions of years at the bottom of an inland sea, which rushed in to fill the depression. Subsequently, as was said in an earlier chapter, the action was reversed and the sunken territory with its thousands of feet of varicolored sediment was gradually forced upwards over a mile above the surface and solidified into rock. Further

Trails Through the Golden West

internal disturbance followed, which accounts for the great number of extinct volcanoes and extensive lava-flows throughout the district.

To the traveler who takes his scenery from the car-window this enormous spread of desert country looks like a plain. As a matter of fact it is an immense plateau from 6000 to 8000 feet high, dominated by lofty mountains and ripped open by superb canyons; scarred by dry gullies and the beds of intermittent streams; varied with sunken deserts, wide-spreading shallow basins, immeasurable levels of unspeakable dreariness; bold, rocky headlands slashed with a variety of colors, fantastic buttes, picturesque mesas, and bits of verdant valley here and there. Water and wind erosion and millions of years of weathering have brought an astonishing array of colors to the surface—the red, blue, brown, yellow, purple, and white that are characteristic of the Grand Canyon, Rainbow Natural Bridge, the Petrified Forests, and Monument Valley. It is this coloring that has given the name "Painted Desert" to the region.

When we were exploring the Rainbow Bridge country, earlier in this book, we saw something of the cliff-dwellings. Here we find many more of these curious abodes, homes of the First Americans, with the same characteristics. The cliff-dweller built in the sheer sides of precipitous canyon walls, in caves, or on the summits of almost inaccessible mesas and promontories, and finally in pueblos or community houses on the valley floors when he no longer feared invasion by hostile tribes. He owes his survival to the grim fact that he owned nothing that the white man coveted. Otherwise

The Painted Desert Country

he would have been driven out years ago, along with his brethren of the desirable prairie country farther north, and been confined—like them—on reservations, with the doubtful advantages of education, tuberculosis, and eventual extinction. This is not a pretty picture, but it tells the truth about the Indian's fate. Hardly a man today would care to father General Phil Sheridan's genial bon mot to the effect that the only good Indian is a dead Indian. It would lack point in our day, anyhow; except in the Southwest there aren't enough Indians left to give anybody serious concern. Only here are they now to be found living under natural conditions. There are approximately 10,000 Hopis, Havasupais, and Wallapais, in addition to 35,000 Navajos who are nomadic in character and whose deserted wicki-ups or "hogans" are almost as numerous as the cliff-dwellings.

The countless thousands of these cliff-dwellings found all over this colorful country suggest that the homes of these people had no more permanence than an Arab's tent. For years it has been asked, "What became of these people?" Their disappearance has been accounted for by some wiseacres on the theory of extermination by enemy tribes; others think that they were wiped out by pestilence. As has been said earlier, it is plain that they lived in continual fear of attack—this is proved by the virtual inaccessibility of the eyries in which they built.

Of the large pueblos or community buildings, which evidently belong to the period after they had ceased to fear such attacks, we may learn more now that we

Trails Through the Golden West

are back again in this neighborhood. These great houses, from two to six stories in height and elliptical in shape, were located in irrigable valleys beneath the lofty cliffs that had formerly served this people for homes and that might once more serve as refuge in emergency. The pueblo was built around a spacious plaza or patio, and had but one doorway and no windows facing outward. The only openings were peepholes or embrasures through which arrows might be shot at the enemy. Entrance was always from the patio by means of portable ladders leading from roof to roof, and each story was "staggered" toward the front, its roof containing a hole or trapdoor so that a ladder could be lowered into the interior. At night the outside ladders were all hauled up. A final point in the defensive character of these buildings was the ingenious nature of the doorways that connected the various rooms: the lintels were too low for anyone to pass under except by stooping, and the sill too high to step over easily—the doorway thus consisted merely of a vertical opening just wide enough for a person to get through by putting one leg across at a time, meanwhile having to bend almost double. Certainly any invader had his work cut out for him; such doorways could almost be guarded by a child.

These features make it worth the traveler's while to visit any one of the twenty-odd pueblos that are to be seen, still inhabited, in the Painted Desert country. Some of them antedate the Spanish occupation, others are later in construction; but architecturally they are all alike. Of the twoscore the most famous, perhaps,

The Painted Desert Country

is Oraibi in Hopiland. Here, from time immemorial, the annual snake dance has attracted visitors from all over the world. There are eight of these Hopi towns, all located in the vast Navajo Reservation which comprises 25,000 square miles in northeastern Arizona. The remainder consists of those musically named places in New Mexico, which we have been familiar with since childhood but which few have ever seen because they are so far off the beaten track and so difficult to reach: Acoma, "City of the Sky"; Zuñi, one of the mythical "Seven Cities of Cibola," whose fabulous riches tempted the Spanish *conquistadores* of the sixteenth century: Isleta, San Domingo, and Taos to the north. In this vicinity also lies the famous Enchanted Mesa, a flat, circular promontory rising 430 feet from the level of the desert and practically unscalable.

According to folklore the inhabitants of Acoma formerly had their pueblos on the summit of the Enchanted Mesa, which in that long-ago time was accessible. One day when the whole tribe, except an old woman and a couple of children, was down on the plains harvesting, a terrible storm arose that continued for several days, and it undermined the only approach to the sheer cliffs of the mesa—two great rock slabs which, having been dislodged from above, had fallen against the foot of the cliffs in such a way as to create a footpath to a cleft in the rock that led to the top. The result was that the old woman and the children perished, and the tribe found a new home on the summit of Acoma, where it has now lived for several centuries.

Whether or not the story is true, it is a well-estab-

Trails Through the Golden West

lished fact that the pueblo of Acoma is the oldest continuously inhabited town in the United States. It is supposed to be accessible, and—to a native—it may be; but the visitor's endurance will be severely tested by the 350-foot climb up Acoma's sandy footpath, where one sinks nearly to his ankles at every step and then has to scramble hand-over-hand up a steep, rocky ledge that contains only some prehistoric hand- and toe-holds. If he manages to reach the summit, however, he will probably decide that it was worth the effort. It will make his blood run cold to see youngsters making their way up this dangerous trail with the surefootedness of a cat. For himself he will wish that somebody were posted ahead of him to pull, and somebody else behind to push, with still a third down below holding a feather-bed in case of accident!

The summit, which is about ten acres in area, is devoid of either trees or grass. Its principal features are three great blocks of dwellings, each about a thousand feet long, accommodating a population of some six hundred souls, and a gaunt and grim church on the very edge of the overhanging precipice. This church was built in the middle of the seventeenth century and is more like an ancient fortress than a house of prayer. It is sixty feet high, with adobe walls ten feet thick, and is surmounted by two squat towers. That there might be burials according to the Church's rites, the zealous priests of that early day caused the natives to carry to the top of the mesa sufficient earth from the desert below to make a burying ground 200 feet square in front of the church; its farthest end falls away to a

The Painted Desert Country

depth of sixty feet, and this was duly filled in and a retaining wall laid up to hold it. All of this "holy ground" was laboriously borne upon the backs of both men and women up that terrible trail, together with the massive timbers, forty feet long by fourteen inches square, which were brought by man-power alone from the slopes of Mount San Mateo twenty miles away.

According to tradition, affairs have not always moved smoothly between the padres and the Acomans. The story is told of a certain Baltazar Montoya who was a priest on the great mesa in the early 1700's; a tyrannical despot who ruled his charges with a rod of iron and exacted a burdensome tribute in the way of labor. One night, after he had treated one of his house servants with unusual brutality, a body of natives took him from his quarters and threw him over the cliff. For many years after this, Acoma was without a priest. Since it is generally realized all through the Southwest, however, that neither the white man nor the Mexican understands the workings of the Indian mind, the incident caused no recriminations of any sort.

You will be interested to note that in this place the conditions of daily life are quite unchanged from what they were nearly four hundred years ago. For example, although there are springs on the desert within a couple of miles of the pueblo, all the drinking water for the Acomans is brought from a picturesque sandstone reservoir of pure rain water located on the southern end of the mesa, which is really separated from the main upthrust by an impassable gorge. This necessi-

Trails Through the Golden West

tates a daily descent of that fearsome trail to the desert level, a climb to the summit of the adjoining mesa, and return—all of which is done by the women. For all other domestic purposes water is supplied by natural reservoirs close by, consisting of great hollows worn in the rock into which rainwater drains.

Despite any normal obstacles, Acoma and its nearby neighbor the Enchanted Mesa, together with the pueblos of Isleta and San Ildefonso on the famous Black Mesa, and a score of equally interesting points in the vast district of the Painted Desert are worth visiting if for nothing more than the subjects that they offer for your camera. The greatest obstacle of all, insurmountable for years by the average traveler, has been overcome by the establishment of a far-reaching motor-coach detour service in connection with the Santa Fé Railway, which has brought all those hitherto difficult points within easy reach. That before that time they were practically inaccessible was not always due to distance; in many cases the journey to them demanded a complex expedition with a special equipment of horses, wagons, and supplies, as well as experienced men to handle it. Sometimes there were roads, sometimes not. Water might be found at a well-known water-hole, or it might be dry. Such trips were more or less hazardous and were out of the question for the ordinary tourist. Today, that is all changed; the introduction of desert motoring has annihilated greater difficulties than distance. For the average traveler, however, even the motor journey must be combined with railway transportation. One of the signal accomplish-

The Painted Desert Country

ments of this co-operation is the discovery of the vast extent of the Painted Desert. For this region is notable for the variety of the rewards it offers to the exploring visitor, and for the many curious contrasts presented by its scenery. There are those canyon rivers that sometimes run dry suddenly, without giving notice; the cloudbursts that in twenty-four hours will convert a normal stream into a torrent and turn a roadway into a quicksand; and the deep blue sky in which clouds are seen so rarely that the natives call them "lost children."

Even more remarkable than the natural wonders of this strange land are the aborigines who inhabit it. Under conquest by the sword four centuries ago, this people embraced the Christian religion, built churches under compulsion, and scrupulously observed Christian forms. But from that day to this they have never ceased to practise their native pagan worship; they still practise polygamy on the quiet and punish marital infidelity with mutilation and sometimes death. They have scientifically irrigated their lands for centuries, and yet they still believe in the efficacy of cutting off a mule's ears to keep him from stealing grain. They maintain fraternal organizations with lodge rooms, signs and pass words as significant as any in modern times. They marry by the Christian ceremony; they have their children baptized by a Christian priest and christened with Spanish names—and then follow up both ceremonies with pagan rites. Their repulsive and loathsome snake dance is an annual religious observance of the most solemn character. They propitiate the powers of

Trails Through the Golden West

darkness, regard a written letter as sorcery, never look at their mothers-in-law, and regard it as an almost unpardonable sin for a son to smoke in the presence of his father. And they will defend their beloved padre to the death just so long as he lets them follow their own sweet will.

Nor may we forget those utterly degraded Mexican Penitentes who scourge themselves with fiendish cactus thorns, slash themselves with knives, bear tremendous crosses in heathenish processions until they faint from the burden, and then offer themselves as voluntary sacrifices for crucifixion thereon, with all the accompaniments of the ancient punishment including the nails—all for the acquirement of sufficient "merit" to balance a dissolute life for the remainder of the twelve-month. Such are some of the contradictions that characterize these ancient tribes and make their lives and dwellings interesting to the traveler.

The inauguration of the motor-coach detours a few years ago has meant first of all, the conversion of certain desert trails into good roads—crisscrossing this great country in every direction and bringing into close touch various attractive points that formerly were practically cut off from the traveler and from each other as well: Indian trading posts and government agencies and schools, which used to be visited only as necessity required. The ancient city of Santa Fé, in itself worthy of a visit, is the point from which most of these detours radiate; they extend as far east as the New Mexico line and as far west as the Grand Canyon of the Colorado, and one of them leads to the famous

The Painted Desert Country

Mesa Verde National Park in southwestern Colorado, where there are some of the finest specimens of cliff-dwellings known. These trips require anywhere from two to eight days, according to the itinerary involved. They have been more effective than any other agency in bringing the hidden glories of the great Southwest within reach of the tourist. No longer is it necessary for the traveler through what was once *terra incognita* to take all his scenery through the Pullman window. With a comparatively small expenditure of money and time he can find his way into the very heart of it under ideal conditions. Some of the "high spots" in those motor-coach detours may be mentioned.

For picturesqueness, beauty of location, and measureless antiquity, El Rito de los Frijoles, or the Creek of the Beans, is unrivaled. It is known today as the Bandelier National Monument, in honor of the late Adolf F. Bandelier, the great historian-archeologist of the Southwest, who discovered it. This age-old, secret place, colored with all the gorgeous volcanic brilliance characteristic of the lofty and spectacular Jemez plateau, lies at an approximate elevation of 8000 feet above the sea, forty-odd miles distant from Santa Fé and 2000 feet above it. In the canyon below are the remains of a magnificent pueblo, one of the few whose history has come down to us, handed down by word of mouth by the old men of each succeeding generation of the tribe of Cochiti. No explorer would have ever thought of looking for "Tyu-on-yi" far up on the bleak Jemez uplands any more than he would have expected to find a canyon concealing it from prying eyes. Its

Trails Through the Golden West

ancient history was known, however, to old José Hilario Montoya, one of the Cochiteño *principales*, or chiefs, and related by him to his "brother" Adolf Banelier, and thus it was brought to light. The great age and individuality of the pueblo led to its being adopted, so to speak, by the School of American Research, which maintains a summer school of archeology in the canyon, in charge of the well-known Dr. Edgar L. Hewett of Santa Fé, through whose unselfish efforts a slow but steady restoration is proceeding. Tyuonyi, as a canyon, is but six miles long by a quarter of a mile wide and 500 feet deep. The pueblo lies a few hundred yards above the point where the canyon enters the gorge of the Rio Grande. Into this gorge flows the "Creek of the Beans," which once constituted the water supply for what is estimated to have been a village of from 1500 to 2000 souls. It has a 500 foot wall of almost white tufa or pumice stone, and in this the builders hewed a series of cave-dwellings about two miles long and one, two, and three tiers deep, to which they added their community house or pueblo, on the canyon floor below and a long line of three-story terraced houses at the base of the cliff. Thus it would seem that these tribesmen built for all time. But it has been established to the satisfaction of the archeologist that probably in a war with the progenitors of the hostile Apache or Navajo, they destroyed Tyuonyi with their own hands. At any rate, since that ancient period they have made four different migrations and built as many new pueblos in the same general vicinity. The latest of these is the present village of Cuapa, twelve miles

The Painted Desert Country

northwest of Tyuonyi. Whatever the reasons for these migrations, they cast an interesting light on the numerous prehistoric dwellings all over the Southwest which, it is generally conceded, do not necessarily argue a correspondingly numerous population.

The ride from Santa Fé to Tyuonyi will provide all the thrills you can conveniently stand in the course of two or three hours. Out of the city through the valley of Pojoaque, past primitive Mexican settlements to the pueblo of San Ildefonso, and across the Rio Grande. From here you begin a 2000-foot climb up Otowi Canyon over the highly scenic Culebra Hill road, through a magnificently forested country to the rim of Tyuonyi. Gazing down into that enchanting valley, with the rays of the sun burnishing the blood-red slashes in the white tufa, you will note thousands of diminutive doorways, and the holes where the ends of beams hewn out with a stone axe were thrust through to support the tufa houses at the base of the cliff. Here and there will be seen the crude hand- and toe-holds that enabled those sturdy folk to climb the fifty to two hundred feet up the face of the cliff to their "apartments." You will want to go down and undertake a bit of a climb, yourself. The U. S. Forest Service has built an excellent foot and horseback trail down the slopes of the canyon at its shallowest point. You may take your time both going and coming.

In all the Southwest there is no other place exactly like this. All that its builders had with which to excavate those hundreds of rooms were stone axes and obsidian knives, and these served also to hew out the slabs

Trails Through the Golden West

of tufa with which they built the tiers of dwellings at the foot of the cliff. If you investigate, you will find that those "ground-floor" rooms were not only built on the outside but that they extended into the face of the cliff itself. It is, without question, one of the most prodigious exhibits of primitive building industry known, beside which the making of bricks without straw by the ancient Israelites seems mere child's play. If you look closely while investigating those dark little rooms, you will find holes in the floor of each, made in order that the great Earth Spirit might find his way in and out without hindrance, and the family be accordingly blessed.

About 200 feet up the cliff may be found the ceremonial cave, or estufa, which has been restored through the work of the summer school. Also you will enjoy a leisurely walk down through the canyon, under the lofty pines and beside the singing stream, which later becomes a brawling rapid as it rushes through the narrowing walls of the canyon until it leaps over the edge of a dizzy fall to the Rio Grande below. When you visit Tyuonyi, the mellowing spirit of the place will slow down your unconscionable desire to hurry on. Let it have its way.

Off to the north from Rito de los Frijoles and on the same lofty upland of the Jemez plateau lie the ruins of Pu-yé, another prehistoric city of cave-dwellers, differing from Tyuonyi in being practically on a mountain top while Tyuonyi is buried in a canyon. Both of these places were dug out of the semi-soft volcanic tufa or pumice. Pu-yé is virtually a promontory of tufa 250

The Painted Desert Country

feet high, all that is left of a volcanic deposit of that thickness which in prehistoric times covered the whole of the Jemez upland. A forest of royal pines has taken the place of the vast stretches of pumice that have been swept away by erosion in the passing eons, creating a beautiful setting for this old relic, whose sheer walls are honeycombed in the same fashion as Tyuonyi. The scenery on the motor road is exceptionally beautiful as it rises from the grandeur of the Pajarito plateau, coming to an end at the foot of the crannied cliffs. Trails so ancient that they have been worn three feet deep in the volcanic pumice by the tread of countless generations lead up to the summit of the mesa, whence an all-inclusive view, north, south, east and west, indescribable in its magnificence, greets the eye.

To the north, across the canyon formed by the beginnings of the Santa Clara River, lies "Shu-fin-né," another cave-city like Pu-yé, which flourished at the same period of time. The remains of great community houses overtop both these sightly spots. The Pu-yé site has been excavated by the School of American Research, disclosing a ground-plan of 218 by 80 feet, containing 1600 rooms. Who can say that the antiquity of Karnak and Palmyra rivals that of these vast eyries? One thing is certain: Tyuonyi and Pu-yé can be visited with great satisfaction in two days from Santa Fé.

Having duly oriented yourself in Tyuonyi and Pu-yé, you will enter upon a trip to beautiful Taos, a combination of past and present, with much more appreciation than if the conditions were reversed. Taos lies away up in the hills, 75 miles from Santa Fé, in

Trails Through the Golden West

an exquisite setting. Its fame has gone out through the world at large and has attracted artists and writers by the hundreds, both at home and abroad. Its superb pueblo, five stories high, divided in half by the spring-clear, serenely flowing Taos River, with a background of heavily forested mountains, 12,000 feet in altitude, distinguishes it markedly from the other hill towns of the Southwest. Its ancient Mission, the progenitor of the more modern San Geronimo de Taos, dates back to the Spanish occupation in 1540—an antiquity that seems a trifle blurred by the close proximity of the modern artists' studios.

In no other place do the ancient traditions of the Indians blend more completely with their church observances than here. Their old-time rites and ceremonies, to which no white man is ever admitted, are never questioned by priest or Government official. Here is one place where the Indian "makes and keeps his self-made laws." If you go about it with proper regard for his individuality, he will admit you to the pueblo and let you see how he lives. He cares nothing for your opinion and he appreciates the significance of a patronizing and complacent smile. In short, he is nobody's fool.

Even if there were no Taos to see, however, the beautiful ride would satisfy your soul. For twenty miles it follows the canyon of the Rio Grande and that of the Taos rivers. If you arrive on a day when the after-glow bathes the heavens with a primrose tint that no émigré of an artist has ever succeeded in reproducing, or when the deep purple of the mountain peaks gives

The Painted Desert Country

way to an evanescent lavender, you may call yourself fortunate. Perhaps you will have time to drive up the Arroyo Hondo and take a peep at the degraded Penitentes—a peep is about all you'll get, but it will be enough. The old home of the famous scout Kit Carson, which he occupied from the middle 1850's to 1868, is now doing duty as an artist's studio, with a magnificent view over the river, while his bones lie in the little cemetery of Don Fernando. Past and present mixed with a vengeance! Never mind—the inexpressible natural loveliness of the Taos Valley will stay in your memory. Incidentally, you will find it exceedingly interesting to stop at Chimayo enroute and watch the Indians weaving their lovely rugs. There's no question but that you will leave a piece of money behind you in exchange for a souvenir that will gladden your eye for many a day.

Travelers who find their way into this ancient country should linger long enough to let the indescribable beauty of the Sangre del Cristo mountains seep into their souls. You may be sure that that title, "Blood of Christ," was bestowed by some highly imaginative and emotional spirit among the Spanish explorers. At any rate, when you see that celestial range glowing in the rays of the setting sun, you will understand how he must have felt, and any disposition to criticize his nomenclature will vanish. The impressiveness of New Mexico's amazing natural color scheme does not stop with the Painted Desert; it only begins there. As the sun-rays slant from a cloudless sky the colors slowly billow up the mountain-sides to the high peaks and rise

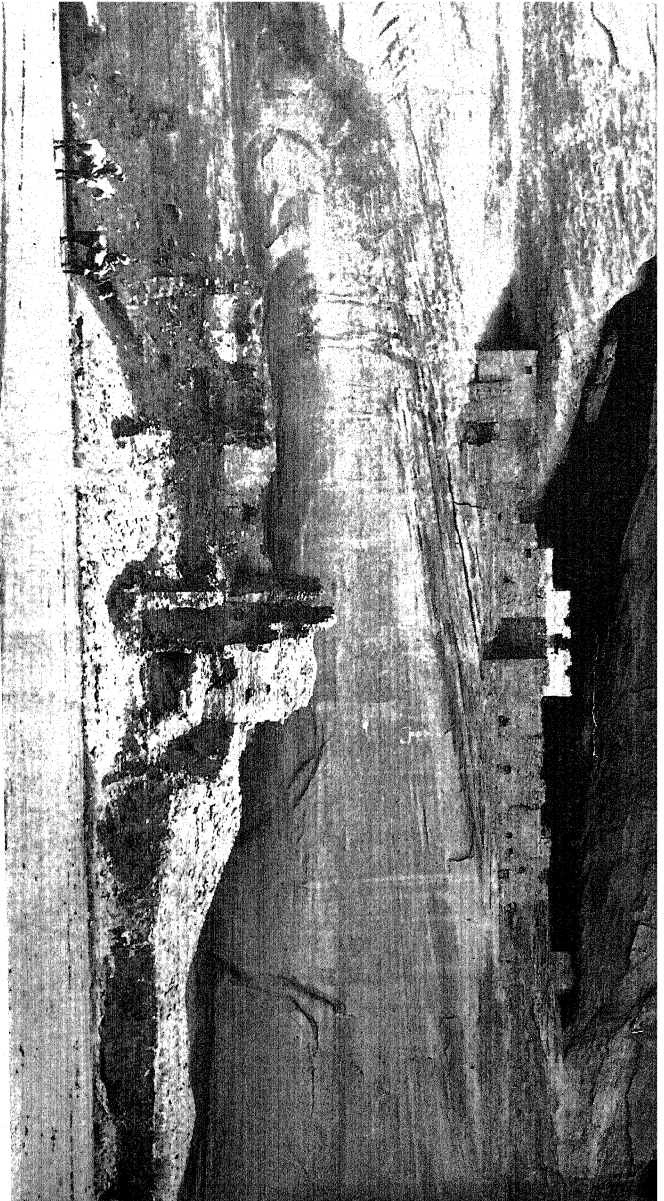
Trails Through the Golden West

majestically toward the zenith with an intensity that is overwhelming. At other times you imagine that you can see their material embodiment reaching the top-most ridge and rolling down the other side.

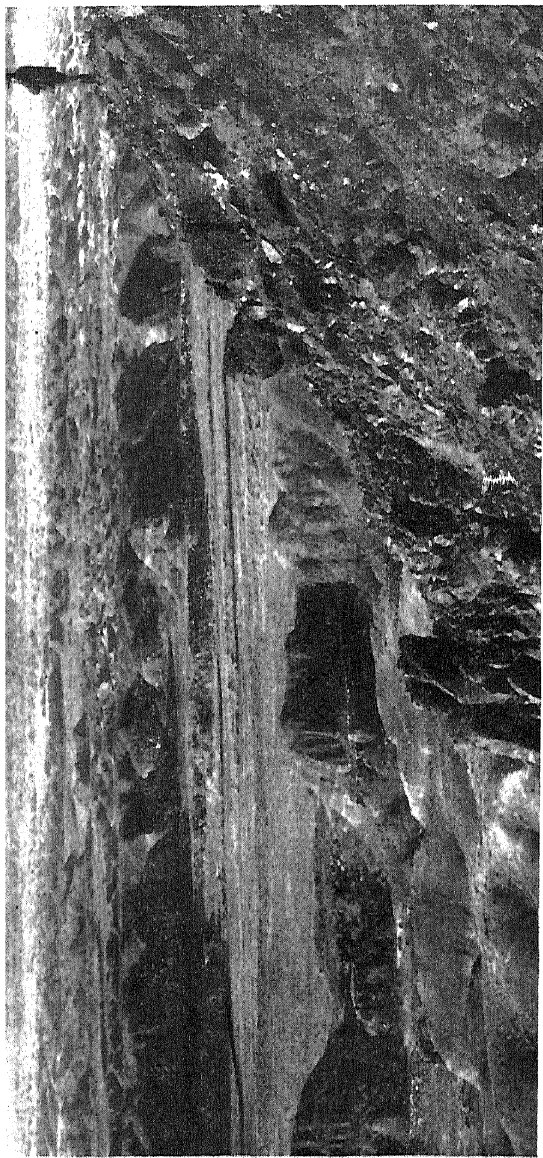
Only four days have thus been spent in a detour that includes Tyuonyi, Pu-yé, and Taos, three of the most interesting spots in this expanse of mountain and desert—places that otherwise could hardly be reached in less than two weeks. Remember that there have been, in past years, thousands of travelers who have been content to make these trips on muleback and in springless wagons and would gladly do it again if there were no other method of transportation. And in the same easy way you can make other worth-while trips in half a dozen different directions from Santa Fé. An example is Carlsbad Cavern to the south.

From a hole in the side of a mountain, peopled by millions of bats for millions of years and valued solely for its guano deposit, to a natural attraction which registered nearly 90,000 pilgrims in 1930—such is the brief record of the spectacular Carlsbad Cavern, in the Guadalupe Range in New Mexico, since its discovery in 1923 and opening to the public two years later.

This is one of the youngest of our National Parks, and one of the most promising because of what are believed to be its unlimited possibilities. The cavern, which is of tremendous size, has already been explored for a distance of nearly thirty miles and a depth of over 1000 feet—and the end is not yet. The late Dr. Willis T. Lee, of the U. S. Geological Survey, the first scientist to investigate this underground wonder, and the man who



The famous cliff dwellings in the Canyon De Chelly are built in the side of a sandstone wall that rises to a height of from eight hundred to a thousand feet.



A world of rolling, multi-colored hills, reaching like the waves of the sea to the distant horizon, the Painted Desert is one of the most brilliant spectacles in the Southwest.

The Painted Desert Country

penetrated its depths farther than anybody else, was of the opinion that its limits would not be reached for years, if at all. That there is an outlet is proved by the purity and freshness of the atmosphere in its deepest and most Stygian parts.

The entrance gives no slightest hint of the marvels below. It consists in an immense, vaulted passageway that winds downward for over half a mile. Powerful electric lights send their rays into the deep shadow overhead, so that any conception of probable dimensions is impossible. It is only when you reach what might be termed the first level, where you can both see and touch, that you appreciate the amazing beauties of the innumerable stalactites and stalagmites and of the delicate incrustations formed by the eternal dripping of the miracle-working water. The National Park authorities realized at the outset that ordinary electric lighting would prove only an exasperation in a place like this—it would be like trying to light up the sky with a hand-torch. Flood-lighting was the only method that would insure adequate illumination of the glories of the place; and everything that could enhance their mystic wonder has been done.

Such barbaric and Oriental ornamentation as has been created by the constant movement of water charged with carbonate of calcium, from the vaulted roof down the sides of the limestone walls, over huge mushroom-like deposits, is not to be seen in any other caves in the world. Delicate and dainty crystalline stalactites, met halfway down by ascending stalagmites surmounted by filigreed cups that give out a musical,

Trails Through the Golden West

bell-like ring when struck. Gorgeous curtains of luminous flowstone, over which the light plays with ineffable tenderness. Every imaginable formation of the most exquisite onyx, drenched in various colors. Filmy veils and stone "icicles" by the millions overhead, buttressed by deeply etched pillars that weigh thousands of tons and rise from the floor like huge trees—the construction of which has been going forward for millions upon millions of years.

When you visit this mysterious fairyland, try to forget that geology has had anything to do with it. Leave all your scientific explanations behind you, and if there happens to be a talkative savant in your party, pledge him to silence or make him travel by himself. All you will need for a guide is Aladdin with his Lamp, and all that you need carry is a letter of introduction to Sindbad the Sailor. Waiting for you in this Wonderland will be Alice and the March Hare.—Assume such an attitude as this and you will be ready to enjoy the cavern to the fullest.

This is particularly true of your visit to the Big Room. The place is so huge that those who named it were baffled—and so they just called it by those two ordinary words. It will probably prove to be the most astonishing room you ever saw. Lying a mile and a half from the entrance, it is cut out of the solid limestone, three-quarters of a mile long, with a maximum width of 625 feet and a ceiling 300 feet high. Or rather, there was a ceiling there once, unquestionably, many millions of years ago; now it is covered with thousands upon thousands of icicle-like pendants, dainty and

The Painted Desert Country

fragile things, some no thicker than a pipestem, from which the electric light is reflected at every angle. Huge bosses of onyx-like monster candelabra are ranged side by side with these stony tendrils, while from below rise enormous fluted and fretted columns like totem-poles, whose tops are lost in the shadows overhead. Except for its temperature the place is more like a huge ice-cave than anything else, for the thermometer here maintains a registration of 56 degrees the year round.

On all sides you will see statuary of the most ornate carving, and will find yourself trying to follow its designs under the brilliance of the electric lights, only to note that they elude you in puzzling fashion. In the floor are the basins of prehistoric springs. Some of these springs are gone dry; others, artistically encrusted with pink and white onyx, contain crystal-clear water; still others reflect the turquoise-blue, jade-green, shell-pink, and cream tints of the surrounding formations. Fantastic proscenium arches have filmy, translucent drop-curtains through which may be descried shadowy actors about to appear upon the stage. Indeed, the traveler with an active imagination may find almost anything he looks for in this titanic gallery, conceived and executed in unbroken darkness by a master hand throughout untold ages and brought to light by electricity. Other rooms there are which vie with the Big Room in every feature except size. The entire sight-seeing circuit covers six miles, out of the thirty-five miles of intricate trails that have been explored but are not open to the public.

The visitor who spends the early evening at the

Trails Through the Golden West

Cavern will behold a sight which is as curious in its way as the Cavern itself: the daily flight of the bats. In sections remote from the scenic portions the bat colony has made its home since prehistoric times. Every summer evening, at an hour that does not vary from year to year, they issue from the entrance in countless millions, like an ascending spiral of smoke, bound on their nightly foraging. The flight consumes two hours, almost to the very minute. Returning in the early morning, they hole up for the day. With the arrival of cold weather they hibernate for the winter. It was the discovery of the bats and the tremendous guano deposits, of which over 100,000 tons have been removed in the last forty years, that led to the disclosure of the Cavern itself. The pioneer in this exploration was Jim White, a rancher with a liking for investigation; what time he could spare from excavating guano, he devoted to penetrating that limitless labyrinth with guiding strings, wire ladders, a miner's lamp, and innumerable balls of twine. White builded better than he knew, for it was wholly on the basis of his findings that Dr. Lee made the first scientific exploration. The Cavern may be reached by taxi from the city of Carlsbad, New Mexico, on the Santa Fé Route; by the Santa Fé Detours from Santa Fé; or by motor-coach from El Paso on the Southern Pacific.

A northerly trip that can be made from either Santa Fé, Gallup, or Winslow, may include that monumental masterpiece among cliff-dwellings, Mesa Verde National Park in the southwestern corner of Colorado, 8000 feet up in the mountains; spectacular Shiprock, one

The Painted Desert Country

of those gorgeously colored left-overs from the pre-historic sea that once covered this terrain, whose outlines resemble a full-rigged ship when the angle of the sun's rays is right; Monument Valley, not far from Wetherill's trading post at Kayenta, Arizona, which might be classified as a whole fleet of "Shiprocks"—tremendous pink cliffs from 500 to 1200 feet high, eroded into a thousand bizarre shapes that you will want to photograph; and Chaco Canyon, with the wonderful remains of "Pueblo Bonito," which is believed to represent the highest achievement of those ancient builders. Pueblo Bonito is a building 1300 feet in circumference and five stories high, with retaining walls 48 feet in height. This mammoth dwelling contained at least 1200 rooms and 27 ceremonial kivas or estufas from 10 to 50 feet in diameter, affording an idea of the number of people it housed—estimated at some 3500.

About fifty miles south of Gallup, New Mexico, stands the oldest and most historically important landmark in this hemisphere: "Inscription Rock." Majestically dominating the desert like a towering fingerpointer of pink sandstone, it shoots skyward two hundred and twenty feet, guarding the age-old Indian trail between Zuñi Pueblo and the Rio Grande. Owing to its resemblance to a battlemented castle, the Spaniards gave it the name of El Morro at the time of its discovery in 1600. My old friend "Don Carlos," otherwise the late Charles F. Lummis, now blazing new trails in the Elysian Fields, and to whom the scenic Southwest

Trails Through the Golden West

owes more than to any other man, called it the Stone Autograph Album.

On the smooth sides of both the north and south exposures of this vast monolith may be found the picturesque autographs and records of a score of those hardy Spanish adventurers who followed Coronado in his search of the "Seven Cities of Cibola" nearly three and a half centuries ago. Think of training your camera on the most ancient and most permanent record of any historical event in the New World, three hundred and twenty-seven years after it was made.

There, on the side of titanic El Morro, under a bit of rocky overhang which has protected it from weathering, will be found the autograph of Don Juan de Oñate, founder and first Governor of what is today the State of New Mexico. An autograph indeed, traced by the point of the doughty Spaniard's dagger, recording an event in which he took no small degree of personal pride:

*"Pasó por aqui el Adelantado
don Juan de Oñate del
descubrimiento de la mar
del Sur a 16 de Abril
Ao 1605"*

of which a literal translation may be rendered thus:

Passed by here the Commander
Don Juan de Oñate from the

The Painted Desert Country

discovery of the sea of the
South on the 16th of April,
year 1605.

What Don Juan de Oñate had accomplished in that early day that occasioned so much pardonable pride was a march across five hundred miles of waterless desert to the Gulf of California and return to Santa Fé, which city he founded that same year. A little jaunt of a thousand miles, in which he was accompanied by an "army" consisting of two padres and thirty footmen. He completed the journey in ninety days, during which he visited the Zuñi and Moqui Pueblos, just as you may do today on this detour trip. The chances are you will find them unchanged.

Close by Don Juan de Oñate's autograph will be found that of Don Diego de Vargas, the General who "pacified" New Mexico after the Puéblo Indian outbreak in 1680, the record having been made in 1692. A variety of inscriptions in quaint Spanish will be found on these pink walls bearing dates all the way from 1605 to 1736, not to mention a number of unworthy "John Smiths" of more recent times, some of whom did not balk at scratching out the names of their Spanish betters to make room for their own. Since the Government converted El Morro into a National Monument, with a custodian in charge, these offenses have ceased. The first Americans to set eyes on this ancient landmark were Lieutenant J. H. Simpson of the U. S. Army and an artist by the name of R. H. Kern. They visited El Morro September 17, 1849, made copies of

Trails Through the Golden West

the inscriptions and left their own record etched on the face of the rock.

By all means take the trail to the Stone Autograph Album, bearing in mind that this highway through Zuñi Canyon is older than colonial history, antedating the exploits of Coronado's swashbucklers in the early 1500's. It might heighten your interest to recall that the next important American historical event after Don Juan inscribed his autograph on the rocky face of El Morro, was the landing of the Pilgrims at Plymouth Rock, fifteen years later. As you follow the centuries-old highway in a high-powered motor-car, the incongruity of the situation will steal over you for a moment. It will but enhance your pleasure, however, to realize that otherwise you might never have cast an eye on this most precious antiquity of the Southwest. And when you reach the base of that lofty pile, you may find it worth while to avail yourself of the prehistoric foot-holes in the rock to climb the summit where you will find the remains of two pueblos facing each other across a fearsome chasm. And you will wonder which is the older, the pueblos or the gorge that separates them.

These detours have brought within easy access, also, two of the most famous and brilliant canyons in northwestern Arizona, which have probably been the goal of more pack-train expeditions than any other one spot: Canyon de Chelly with its twenty-four miles of blazing beauty, and Canyon del Muerto—two amazing gorges that join each other. From their great walls of

The Painted Desert Country

red sandstone, 800 to 1000 feet high, project enormous pinnacles, buttresses, and towers, so beautiful as to create the effect of a well-defined plan, rather than the work of erosion. Through the center runs a stream that gives the Indians all the water they need for irrigation. Overhead, anywhere from 300 to 500 feet, set on ledges not more than three feet wide—allowing just room enough for a footpath—may be seen diminutive cliff-houses clinging to recesses in the walls. Few of these houses exceed a dozen feet in length, eight or ten feet in depth, and five to seven feet in height, outside measurements. Only a dwarf could stand erect in them. This does not, however, prove that their tenants were dwarfs; it was doubtless just another means of making entrance more difficult for invading enemies. These old-time builders were among the earliest exponents of the doctrine of Safety First, and the difficulties that they surmounted in locating and constructing their homes constituted their guarantee that the invader would find it hard to get in. Of these tiny houses lining the cliffs on both sides of Canyon de Chelly the most interesting and attractive is known as the White House, owing to the amount of lime in the adobe of which it is built. Here Kit Carson won a bloody fight with the Indians. Canyon del Muerto—Valley of Death—is so called because of the number of Indians killed on this spot during that same sanguinary period, when the length of a white man's life depended largely on his ability to outguess his enemy. Today, however, the well-irrigated floor of Canyon de Chelly is covered with the chili, corn, alfalfa, and melon patches of the

Trails Through the Golden West

Navajos. The savage rides on his raids no more. But whether he sows or reaps, whether the white man comes or goes, the Indian's tribal gods will not cease to beckon from the blood-red, sun-washed, towering crags of mighty Chelly, and the Indian will be at peace.

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