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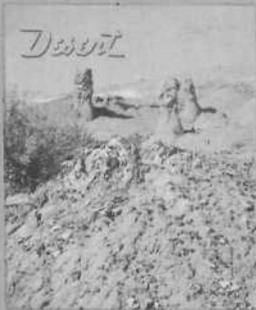
Volume 36, Number 4

APRIL, 1973

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THE COVER.

Unusual photo of petrified trees. The "giant" in the foreground has weathered into a pile of chips. Photo by Jerry Strong, Valeremo, Calif. See related article on page 28.

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A Peek in the Publisher's Poke

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Despite the inferences in the article in the November, 1972 issue of *Desert Magazine* entitled "A Look At Lookout" (Page 18) by Mike Engle, the property is not "abandoned" nor is it public land.

Lookout Mountain and the Modoc Mine are property encompassed in six patented mines located in the North 1/2 of Section 33, Township 19 South, Range 42 East, Mount Diablo Meridian, Inyo County, California. The lands and mines are mapped in the Inyo County Assessor's Map Book 32, Page 27. The Assessor's Parcel Number is 32-270-01 in Code Area 67-000.

It is the request of the owner, Donald I. Segerstrom, P. O. Box 787, Sonora, California 95370, that readers of *Desert Magazine* please not trespass on the private property, do not dig for or remove artifacts and souvenirs in or near Lookout Mountain and remain strictly away from the adits and shafts of the Modoc mine and its adjacent workings and prospects. For their own personal safety, readers of *Desert Magazine* should stay strictly away from the Modoc Mine and Lookout Mountain as the laws of trespass will hereafter be enforced to their fullest extent.

William Koenig

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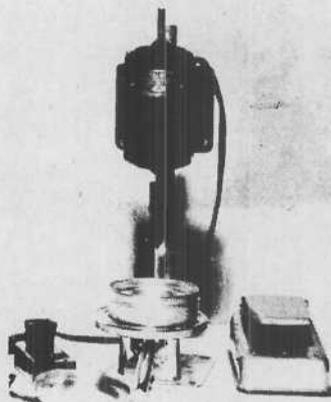
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THE NEVADA DESERT

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In addition to providing information on Nevada's state parks, historical monuments, recreational areas and suggestions for safe and comfortable travel in the more remote sections of the desert, the author has utilized old journals, microfilm copies of early newspapers, emigrant journals and memories of living persons in an effort to give the reader a small portion of the exciting history of the Nevada desert.

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April, 1973



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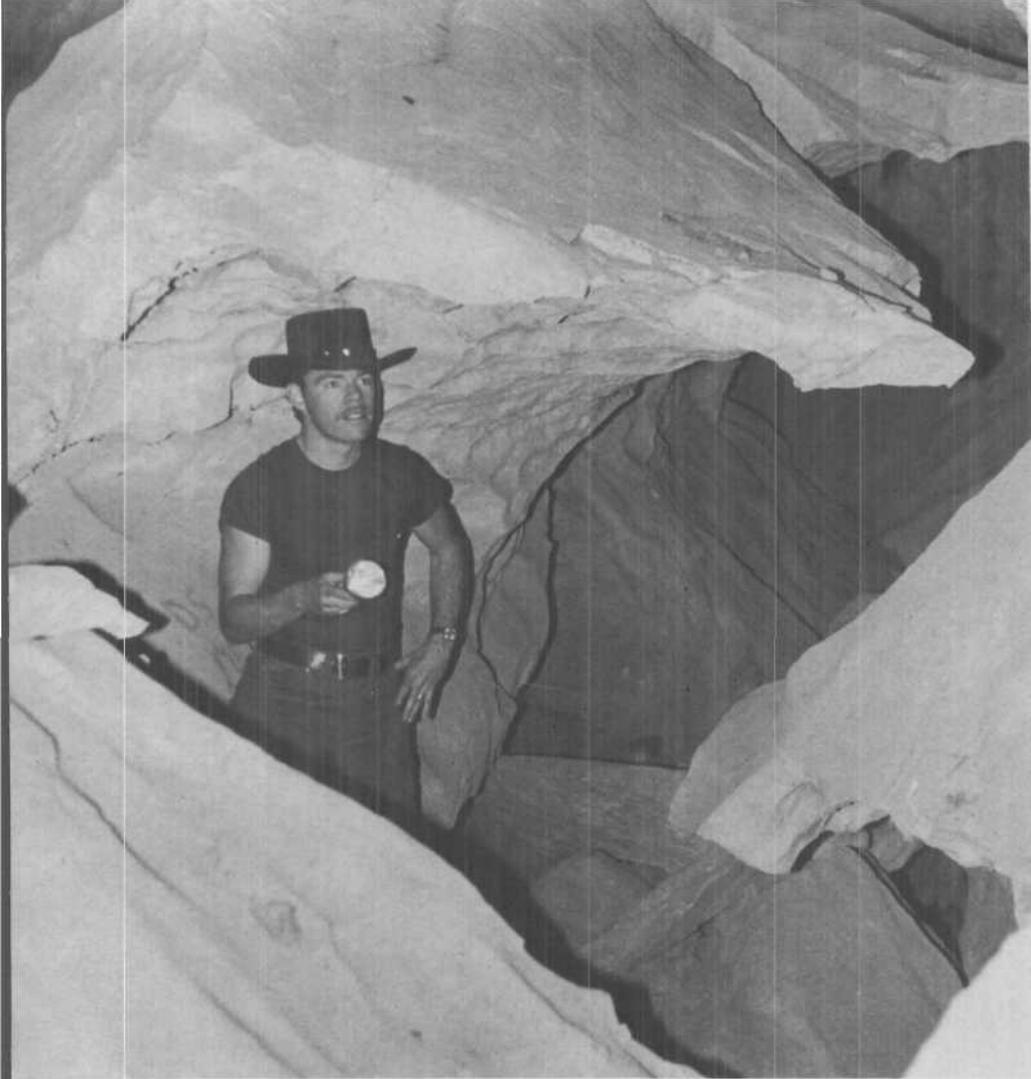
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Author (above) examines weird formations in a limestone cave, supposedly a hideout for renegade Indian Cochise, in days long past.

IN ARIZONA'S

by Ernie Cowan

SOUTHERN ARIZONA, the land of saguaro cactus, Gila monsters, sandy washes and little water, right? Well, how about pine trees, bears, parrots, limestone caves and snow-capped mountains with ghost towns tucked in the canyons?

Most people wouldn't guess it's in Southern Arizona, but this outdoor recreation area is the Huachuca Mountains, about 60 miles southeast of Tucson. Pronounced Wa-chew-ka, these mountains straddle two counties and their southern tip touches the Mexican border. Not

only are they a historic focal point, but they offer the nature lover some unique plant and animal species, some found nowhere else in the nation.

The Huachuca mountain environment is an extension of the mountains of Mexico and they offer a haven to many animals found commonly deeper in the interior of Mexico. For this reason, exotic species such as jaguar, parrots and jaguarundi cats are occasionally seen here. Seventeen of the 23 known species of hummingbirds are found at various times in these mountains, more than in any other place in the nation.

The Huachucas extend for about 20 miles within the Coronado National Forest and they are surrounded by roads good enough for the passenger car to travel in good weather. Many trails cross the range, offering the hiker the chance for a more intimate look at this interesting area.

The Huachucas are part of the Patagonia District of Coronado National Forest and an excellent forest map of the area can be picked up at the Forest Service headquarters in Tucson, or at the district ranger station in Patagonia.

Although I have spent many enjoy-



The old schoolhouse (left) still stands at Sunnyside. Limestone cave (above) with 20-foot ceiling is fun for exploring.

HUACHUCAS

able days hiking and driving through these mountains, on a recent vacation we spent a day making a loop trip around the Huachucas. You can easily make this same trip, seeing the sights we discovered and finding your own.

Our trip began in Sierra Vista, home of U. S. Army Fort Huachuca. Now an important army communications center, the fort was once an outpost in a wilderness ruled by the Apache. Sierra Vista is a fast growing community with all the modern facilities.

Heading east for three miles from Sierra Vista on State 90, we turned south

on State 92. After about 15 miles we turned onto State 83, following the signs to Coronado National Memorial.

This road climbs out of the flats and into the mountains. The first point of interest will be the visitor center of the memorial. Here, an interesting display tells the story of the explorer Coronado and the first major exploration by Europeans into the American Southwest in 1540-42. It was near this point that Coronado crossed into what is now the United States in his search for the fabled Seven Cities of Cibola.

The country here is a beautiful blend

of oak, pinyon and cactus. Wildlife abounds and it's not uncommon to see whitetail deer, coati mundi or javelina near the memorial.

A short distance up the road from the memorial headquarters, we were told there was a limestone cave reported to have been a hideout for the famed renegade Indian, Cochise. The cave is about a half mile up a hill to the west of the road, so check with them before starting out to find it.

We were surprised at the size of the cave when we crawled inside. The entrance is only a few feet wide, but the

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main room is 20 feet high and has a floor area of several hundred yards. Vandals have done a fair job of destroying what little natural beauty there was here, but the cave still offers the traveler a chance to explore a "lost tunnel."

After exploring the cave, we drove the few miles up Montezuma Canyon to Montezuma Pass where we enjoyed the magnificent view and lunch. The 6,600-foot pass offers a clear view south into Mexico and north across the San Pedro River valley. The road to the pass turns to dirt about half way up the mountain and the majority of the trip ahead will be over unpaved roads.

After lunch we dropped down the southeast side of the Huachucas. This is the wild side of the mountain range and one of the most beautiful areas I have ever seen. Without the use of poetry this area is hard to describe. On a sunny day the blue sky, yellow grass and green trees blend into poetic harmony. You can see forever over rolling hills of Emory oaks, pinyons and juniper.

This southern side of the mountains is still wild. Civilization is not lapping against the mountain slopes like an incoming tide. But there was a fair amount of civilization here in past years. Gold and copper were sought in the Huachucas and traces of these efforts have been left behind in many forms.

While hiking on old trail through the mountains one February, we noticed a small hole in the hillside, no larger than a foot across. We began digging the hole out and it opened into an old mine tunnel. Inside we found a rusted ore car sitting on tracks leading to the closed entrance of the mine. Standing against the wall were rusted tools, long ago left behind.

We couldn't help but wonder what had happened to the men who had worked this digging. Had they closed the mine to keep it secret and never returned? Had they become the victims of the Apache? The answers may never be known.

There are other bits of the past in these mountains. The remains of an interesting little-known ghost town are also located on this wild side of the Huachucas, about 15 miles beyond Montezuma Pass. The town was known as Sunnyside and was founded in 1898 by a man named Samuel Donnelly. (See *Desert Magazine*, Oct. 1971.)

Donnelly and a group of about 50 people founded the town as a religious colony and they began working a nearby copper mine known as Donnellites, or Copper Glance Christians. Sunnyside is a well preserved old town because a man named John McIntyre lives there with his wife and cares for the old buildings. He was there when the town was founded and can give the visitor inside

information about the life and times of Sunnyside.

Continuing to the northwest on State 83 from Sunnyside, you will come to Parker Canyon Lake after about three miles. This scenic little lake is a popular recreation spot for Tucson residents. There are cabins and trailer spaces available and boats can be rented for fishing. This man-made lake offers excellent fishing.

At Parker Lake you now have several options open to you. If you want to return to Sierra Vista it is about equal distance to continue ahead or backtrack, but time-wise, it's quicker to go back the way you came.

If you are not pressed for time, however, continue northwest on State 83 to Canelo. Here you can either stay on 82 to Sonoita, or take a more northerly route to Elgin for a shortcut back to Sierra Vista. You can also turn right at Canelo and return to Sierra Vista through Fort Huachuca, but this route is sometimes closed by locked gates. A good oil company road map shows the roads of this area, so be sure to have one before you start out.

For those with more time, the series of hiking trails that cross the Huachucas are a backpacker's delight. The mountains reach elevations of 9,000 feet and as the slopes climb the vegetation changes from pinyon-juniper to fine stands of pine and fir. There are several old mines in the canyons at higher elevations and there are a few remains of the ghost town of Hamberg in Ramsey Canyon. The Forest Service map of the area is the best trail guide for the hiker.

There's a strange peace about the Huachucas that I think you'll detect once you have visited there. This timeless land has just been walked over by great explorers, famous Indian chiefs, blue-jacketed cavalry, prospectors and simple folks in search of dreams and goals of varying magnitude. They have added dignity to this wildland realm and many have left their mark upon the land. But the wilderness persists and is still master. Enjoy your wanderings through Arizona's Huachuca Mountains. □

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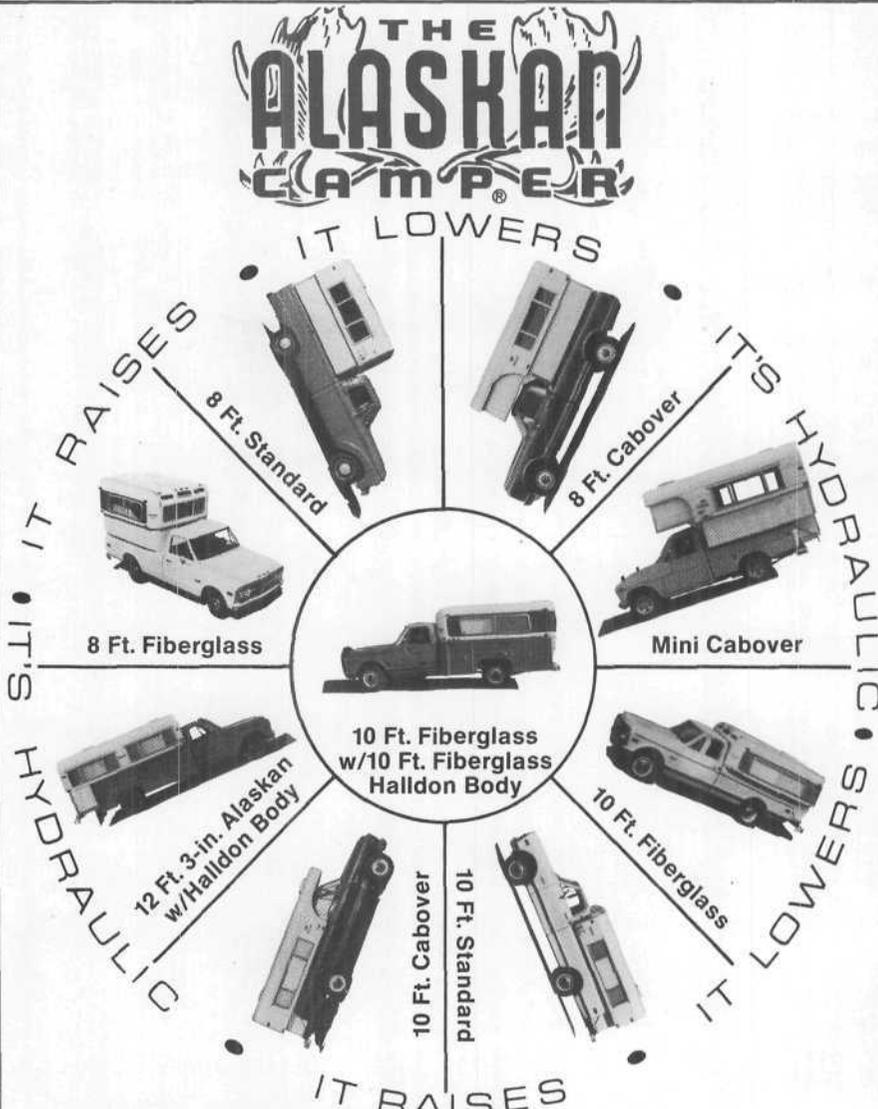
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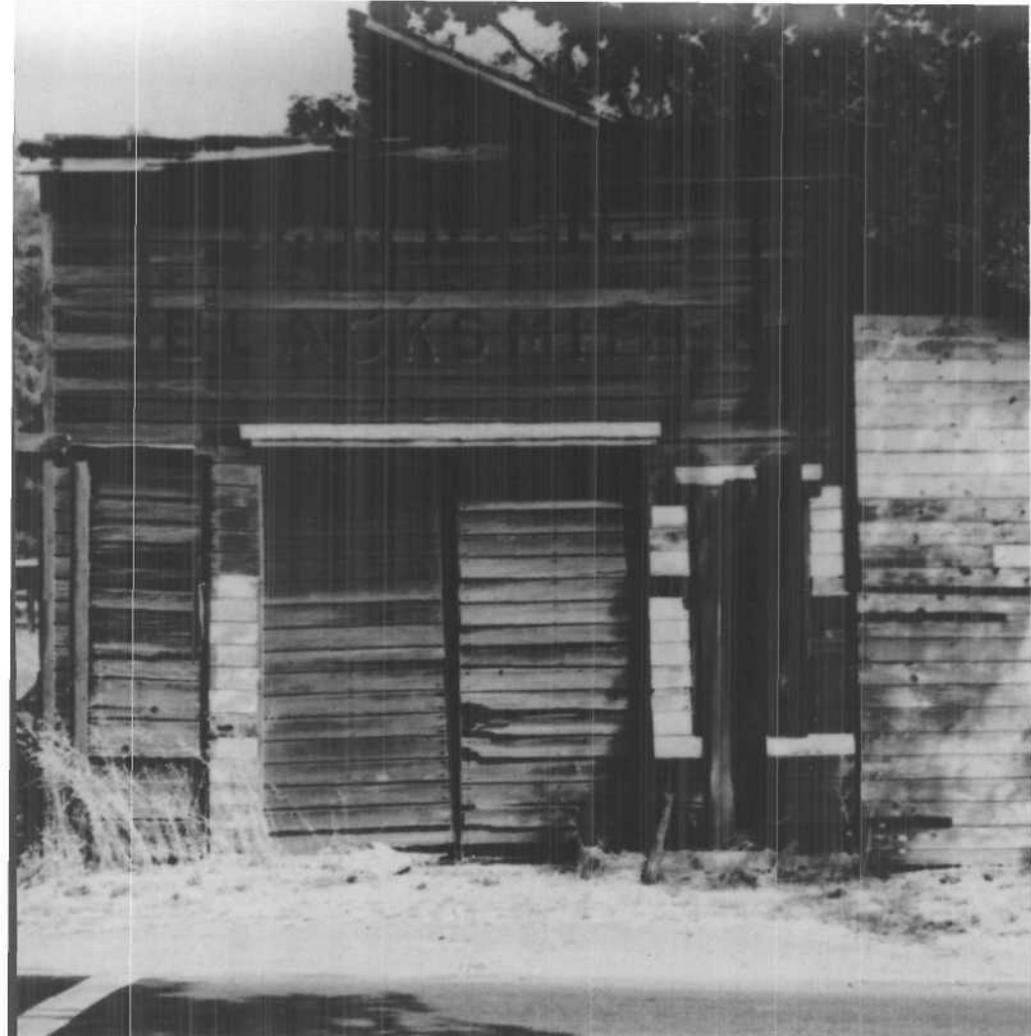
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FAMOUS AS one of the most productive centers in California history is the town of Grass Valley, located on State 49 about twenty-three miles north of Auburn. It became the most important gold mining center in the state, boosting the economy steadily for over 100 years. During the great depression of the 1930s, Grass Valley experienced no lull in activities.

Situated amid gently rolling hills in a pleasant countryside, at an altitude of 2500 feet and with a population of 5,000, Grass Valley offers an ideal headquarters, with modern accommodations for those exploring the many interesting and historic old camps and towns in the nearby vicinity.

Grassy areas of the valley provided forage for livestock of the wagon trains which had crossed the Sierra and descended the western slope in search of suitable campsites and resting places for both men and animals overworked from the

The old Tiffin blacksmith shop (left) in Rough and Ready, Calif., as it appeared in 1972.

GRASS VALLEY LOOP TRIP

by Al
Waterman



strenuous journey. Soon, the early settlement of Grass Valley was formed.

Gold placer deposits along the streams of the region were yielding good returns to early settlers in 1849, but the real excitement was triggered in October, 1850 when George McKnight unearthed a chunk of golden-laden quartz on a hillside near Boston Ravine. It was said he was tracking down a wandering cow at the time. A rich vein was opened here, but for some time production lagged due to inexperience of California miners at hard-rock or lode mining in separating gold from quartz.

Excitement rose to fever pitch and many claims were located in the surrounding region. Numerous mining operations were attempted only to find that the crude methods used in those early days of quartz mining were uneconomical. Many claims were sold or abandoned when it was realized that capital expenditure, machinery and know-how now were necessary.

The 30-foot Pelton wheel (right) at the old North Star Mine in Grass Valley. The home (below) of Lola Montez, one of Grass Valley's famous residents.



Over a period of years, from 1850, most of the claims and mines at Grass Valley were absorbed and consolidated with the resultant big three major operating companies, The North Star, Idaho-Maryland and Empire. Large sums were expended in the purchase of new machinery, deep mining techniques developed by meticulous engineering and the aid of experienced Cornish miners, plus considerable experimental work and use of new methods. Some of the richest and deepest gold mines in the world resulted from these efforts.

The three mining companies operated

from 1850 to 1851, the Empire being the oldest, until 1956 with some changes in ownership from time to time. The Empire, having purchased the North Star, later known as the Empire-Star, over a period of 105 years produced a total of \$120,000,000, according to a plaque on the front of the mine office building. Some difference of opinion on this total exists, but as tight secrecy cloaked production figures over the years, this total could be accurate.

A drive up Empire Street at the edge of town brings the visitor to the impres-

Continued on Page 43





MEMBER OF the royal family of big cats, the mountain lion, known also as the cougar or puma, is indeed the fitting ruler of the High Desert . . . a kingdom wild and remote, of rocky heights and plateaus, slashed by deep and shadowy canyons. His throne is a ledge in a sheer cliff where, lying in regal splendor, he can survey his domain in all its magnificent vistas that stretch so far away to the very edge of the world. Proud of bearing, this big golden cat is supremely confident in his powerful strength and his sure knowledge of his desert kingdom.

True enough, much of his regal attribute came by grace of God via the proper genes and what not that go to make a cat a cat and not a mouse, and a big cat at that. But it must be said that while his powerful body was handed down to him by his ancestors, as well as certain instincts in the right direction, his confidence and knowledge were not among the free gifts. These had to be earned, and it took a lot of hard work on his part. He even had to go to school, a school whose curriculum was a tough one, and whose teacher was mighty handy with her cuffing paw if he failed to pay attention.

Today, His Royal Feline Highness is, in short, a sterling example of what good family upbringing and higher education can do for a fellow.

His success story began, although he didn't know it, when he and two sisters arrived on a July day in the royal nursery tucked into a shallow cave in the high country—a site selected by their mother for shelter from heat and cold, and for utmost safety, since she must leave them unprotected for long periods to go hunting. Although new to the world, the spotted and ringtailed kittens were far from puny, already weighing about a pound, and what dining on rich milk and being pampered and cared for by a doting mother, had added another pound by the time their eyes opened in about 10 days.

At eight weeks the kittens were a lusty nine pounds and in addition to their milk diet were eating fresh meat brought to them by their mother. Soon they were ready for kindergarten when, instead of having food delivered, they were taken to the kill site to pull the meat off for themselves. First grade lessons began when they started to accom-

pany their mother on the actual hunt, disciplined to stay quiet and watch proceedings. And here the ancient knowhow of whisper-quiet walking, of standard whisker-still for minutes, both instinctive with the cat tribe, gave them a good start in school. But woe to the kitten who forgot and played pounce with a passing butterfly at the hunt's critical moment! The forthcoming maternal box on the ear sent the culprit sprawling, underscoring the lost dinner lesson of the day.

Weighing some 35-40 lbs., at six months, and being considerably smarter, the grade school lion kittens were doing some hunting for themselves but catching only small prey and, because of their big need for food, were still dependent

KING CAT

by K. L. Boynton
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on their mother. Even as yearlings they were still not ready to fend for themselves for although they might now weight 60-80 lbs., and were fair hunters, they did not have the mature strength to tackle big game, nor indeed did they have the required skill. Hunting game, mountain lion style, requires great alertness, infinite patience, split-second timing, swift power and exceedingly skillful killing technique.

New venison is the main item on the lion's grocery list, and this immediately complicates matters, for members of the deer tribe are by no means stupid, being sharp-eyed, keen-nosed and funnel-eared. They are also very, very fast on their feet. Furthermore, they, *too*, have been going to school, learning from fawns up all the tricks developed through the ages by the deer tribe to stay off the mountain lion menus. Lastly, there well may be the herd stag on guard, a stag who got the chief's job because of his warlike disposi-

tion and his exceedingly efficient use of his sharp, spiked headgear.

Against odds like these, a surprise attack is the lion's only chance for his success, for he has neither the running set-up nor the wind for a long chase. Hence his hunting style is built on ambush and a silent stalk to within a few feet, both requiring sustained muscular control and fine coordination. At exactly the right moment, there's a final swift rush and a single leap onto the deer's back, the force and weight of the heavy cat striking like a thunderbolt. Digging in with his hooked claws, the cat bears the deer down. A mortal bite to the base of the skull, and all is over.

Such a successful hunt means a full belly, and food for another meal as well, for the lion covers his kill with leaves, dirt or sticks, thus keeping off the flies and retarding spoilage, as well as hiding the meat from spying magpies and ravens. Anything left when the lion is finally through is quickly disposed of by smaller and less particular members of the local hunting brotherhood—little cousin bobcats and coyotes — who are always around hoping.

It may take even the most skillful hunter three or four tries to make his deer kill or he may fail completely for days on end. Hence porcupine becomes an important item. Protected by a spikey coat and a muscular tail for driving needle-sharp quills deeply into flesh, the porcupine, slow as he is, is a formidable prey. Only his unprotected belly is vulnerable. Practice alone can teach the adolescent lion how to flick out that lightning-fast paw and flick the heavy porcupine over without connecting with that quill-wielding tail. Bad timing means that each quill must be pulled out, leaving a sore and painful foot that can put the kabosh on hunting anything at all for days. Yet porcupine may have to account for 15 percent of the lion's food, being second only to deer as a source.

By and large, however, deer furnish more food than all other prey species combined and the average kill per adult lion is about one deer every 10 days. Thus the fate of the big cats and that of their principal prey are bound closely together. Studying the food habits of mountain lions in Utah and Nevada, Biologists Leslie Robinette, Jay S. Gashwiler and Owen Morris found that more deer were

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killed in summer than winter, for while mountain lions breed the year around, more kittens were born in June and July and so the females, with growing kittens to feed, had to hunt oftener. There were also potential second meals lost because of heat spoilage.

The easiest deer to capture are the weaker and less alert, the healthiest and quickest animals escaping. Hence mountain lion feeding culls a deer herd, the survivors being the best fitted to carry on their line with vigor. Zoologist Frank Hibben's study in the Southwest noted, for instance, that 11 of 74 deer killed by lions were in obvious off-condition, already marked for non-survival. Biologist Maurice Hornocker's later investigations in the Idaho primitive area substantiated this finding when he saw that the young and old deer taken by the lions were those least likely to be able to stand the hard Idaho winter. Watching, he also saw that deer herds, when preyed upon, changed their feeding areas often, and thus the danger of overbrowsing—a disaster for deer and to their habitat—was avoided.

Paradoxical as it may seem, the hunting lion does a deer herd a favor by keeping it at top vigor, removing the weak from the breeding scene and holding the herd's overall numbers in balance with the available green forage supply. Deer return the compliment by being a food staple very hard to come by except for healthy lions exercising great hunting skill, and thus keep the lion clan at top vigor.

So, feeding on high protein venison pulled down by their mother, and tucking away supplemental snacks of rabbit, packrats and porcupine they capture themselves, the young lions of this tale grew rapidly. They lost their speckled baby coats, donning the adult golden coloring. They gradually filled out, developing the magnificent hunting body typical of the cat family, with its heavy shoulder bones and muscles, thick jaws with clamp action, big hind legs and strong spring backbones whose muscle-driving force powers the lion's tremendous 20-foot leaps. Closely observing their mother's hunting technique in their high school classes, they begin to have a go at deer catching themselves, fumbling and failing at first, to be sure, but gaining confidence and know-how with every success.

Escape tactics, too, were learned and

practiced, for while an adult mountain lion can outstrip a dog for the first 100 yards, it cannot keep up the pace. The better development of the collar bone in the cat tribe that makes possible those mighty sideswipe movements for the striking paws, spoils the running action of the front legs, and the cat back and hind leg construction, so perfect for bounding and leaping, do not work well for running. Nor can lungs furnish sufficient oxygen. Hence young lions must practice leading pursuing dogs into rough country, leaping from ledge to ledge over wide crevices where's it's hard for a dog to follow, and around boulders and crags where quick turns and artful dodges exhaust the dogs and sharp rocks cut their feet. The last resort for a fleeing lion is a mighty 12-15 foot bound up a tree.

Somewhere around a year and a half to two years of age, the desert lion offspring, now tipping the scales at about 150 pounds for the males and about 90 for the females (northern lions are bigger), and with a good batting average on deer kill success, finally graduate from college and can leave their mother. Each fares forth on his own, perhaps crossing wide 40-50 mile stretches of desert, traveling by night, lying in the shade of mesquite or palo verde by day, until, maybe as far as 100 miles away from his birthplace, he finds and establishes a hunting territory of his own. Signposts marked with his urine are notices of his residency and a warning to interlopers, for mature lions, male and female alike, are solitary animals, and will not tolerate intruders.

To be sure romance brings a pair together for a brief period of two or three weeks, but at the end of this time, the males leaves for points unknown. His absence from the family scene accounts for the lack of any reference to a lord of the spread in this saga, since the male plays no part in the raising or education of the youngsters. The female is stuck with the whole job, but as results show, she is just the girl who can handle it. Immediately upon graduation and subsequent departure of one trio of students, Mrs. Mountain Lion promptly sets about preparations for the next class of bumbleheaded kittens who, thanks to her upbringing and expert tutelage by example, turn out finally to be Big Cats, tough, confident and wise in the ways of the desert. □

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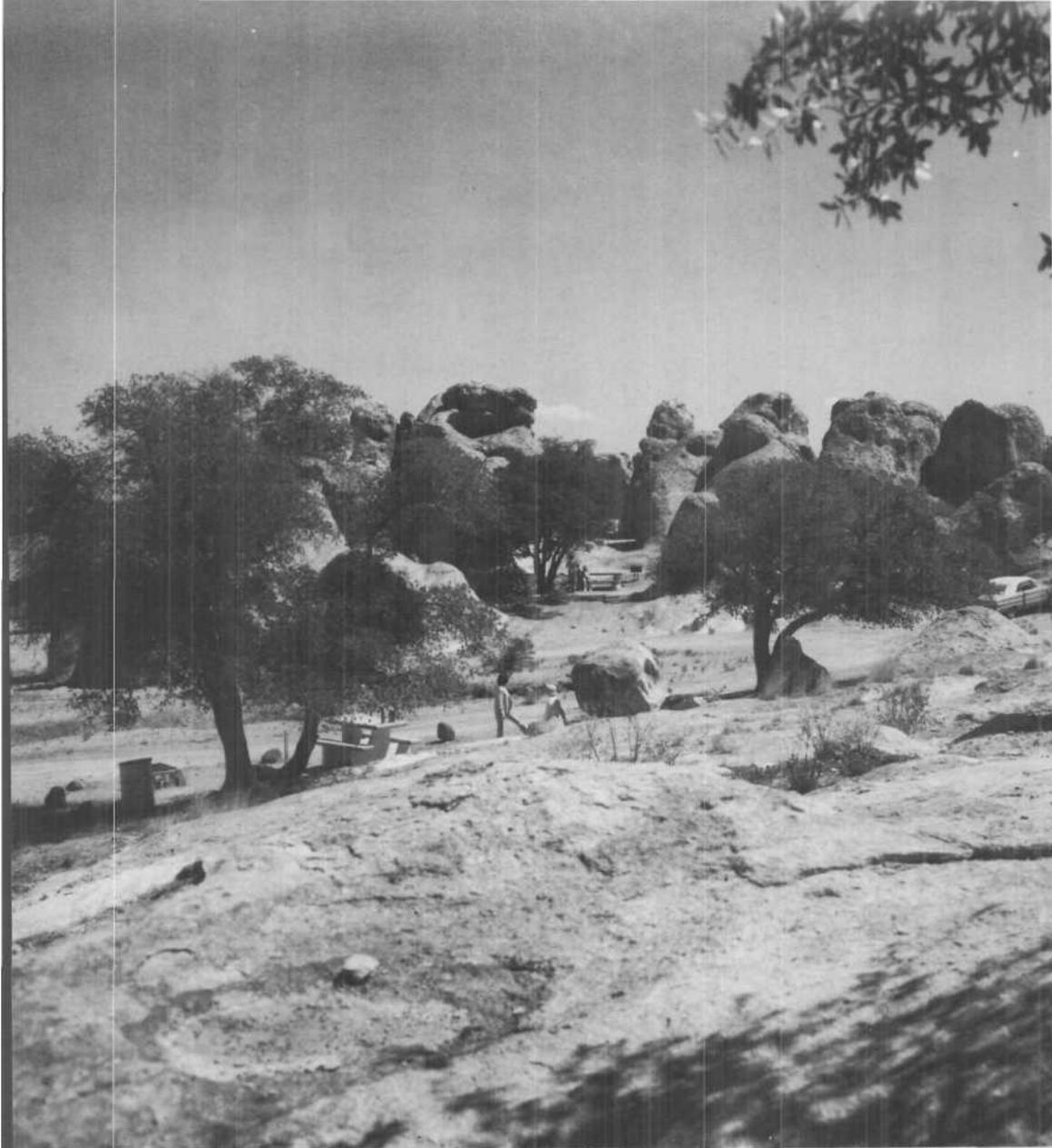
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FUN and GAMES

New Mexico Style



Typical of the diversity of the New Mexico State Park system, the opposite page shows a picnic group at City of Rocks State Park; left: the rugged shoreline at Conchas Lake State Park, while above, a couple search for specimens at Rock Hound State Park.

NEW MEXICO has been host to seekers for a long time — ten thousand years at least, possibly twenty-five thousand or more. Excavations of crude weapons and bones (bison, camel, horse, mammoth and mastodon) are mute evidence that primitive man hunted and found animals in this area.

More than four centuries ago, Spanish explorers searched for gold, silver, and land for colonies; priests sought heathen souls to save. Pioneers of the Santa Fe Trail left Missouri in the early nineteenth century seeking new frontiers, trade outlets, wealth, adventure. Later health-seekers flocked here for miraculous cures of tuberculosis and asthma.

Modern day seekers do not come on foot, horseback, covered wagon, nor sick bed. They are not prepared to snare a rabbit, fell a buffalo or mastodon for food. Neither do they want a bed of sand with a rock pillow, a pine bough cot, nor a sanatorium bed. These travelers come and look for a campsite or motel. Then, they seek semi-precious stones, ghost towns, archaic ruins, abandoned and lost mines,

fishing, hunting, relaxation, scenery, solitude and many other things. These they find in or near New Mexico's twenty-seven state parks.

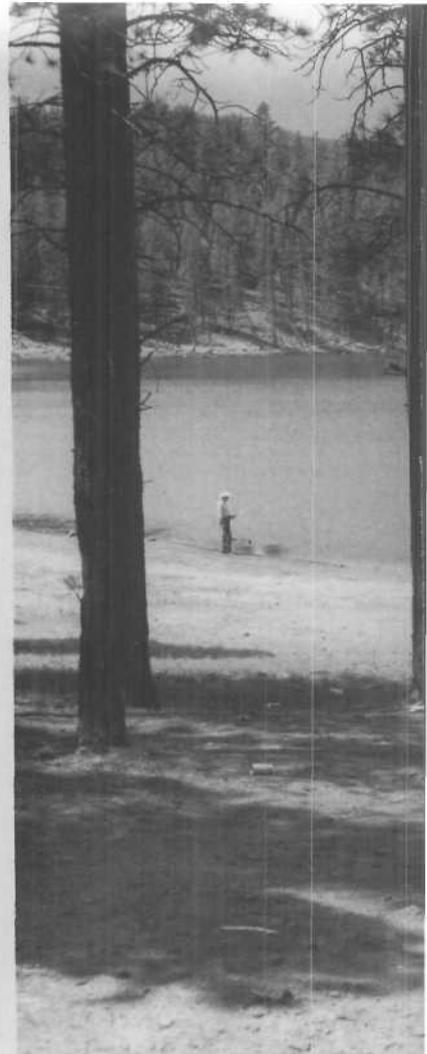
All parks except Zoological/Botanical Park have picnic units, many sheltered, and camping is permitted, with park superintendent permission, at all but two—Kit Carson and Zoological/Botanical. Toilets, pit or flush, are found in all parks, and in most, there is drinking water and well-equipped playgrounds. Swimming, at one's own risk (no lifeguards), is allowed in all the state park lakes. The parks range in altitude from 3,612 feet to 8,000 feet above sea level with most above 4,500 feet.

One of the most unique is Rock Hound State Park, six miles south of U. S. 180 near Deming. Instead of the usual "Do Not" signs, the visitor finds encouragement to dig and take specimens. To make it easier, the surface has been scarified. Agate is the most common stone—reds, browns, light blues, greens, blue-reds, lavenders, black sagenite, fortification, and tippage agate nodules. Various forms of quartz, amethyst, quartz crystals, and

brecciated jasper are found in this 249-acre park. Experienced rock hunters sometimes discover perlite, naolin, psilamelaine, blue and pink opal, and geodes.

In the same vicinity but farther south is Pancho Villa State Park for history buffs and desert vegetation lovers. At the north edge of Columbus on State 11 just three miles from the Mexican border, this was the site of the infamous raid by Pancho Villa in 1916. Part of old Camp Furlong, headquarters for General John J. Pershing's expedition, still remains. A botanical garden of desert plants is an outstanding feature of this park. One may cross the border to the little village of Palomas, Mexico, for shopping and a delicious, early dinner. (The border crossing is closed at 11:00 p.m.)

A bit to the north, near Silver City, is the City of Rocks State Park, a 680-acre natural amusement park for everyone. The rocks are easy to climb and the labyrinth of paths among the boulders is perfect for a children's game of hide-and-seek. Nature laid out this city with gigantic stone houses, animals and figures along wide avenues lined with live oak trees.



Geologists explain that more than a million years ago, tiny particles of extremely hot rock flowed over the lip of a volcano, settled at its base, and welded together in grotesque shapes, called Kneeling Nun rhyolite tuff. Fierce Apache Chiefs used this as a hiding place from which to swoop down on the stagecoach trail which passed close by.

More than a hundred campsites with drinking water and modern restrooms are located in these three parks. This is desert country with hot days and cool nights.

Zoological/Botanical State Park is located one and one-half miles northwest of the city of Carlsbad, famous for the Carlsbad Caverns. This park comprises 1,120 acres with extensive cactus collection and small animal exhibits including nocturnal animal displays. This is one of the State's newest parks and is dedicated to the display of southwest flora and fauna.

Bottomless Lakes State Park, seven miles south of U. S. 380 near Roswell, is a water sports mecca. The largest lake, Lea, is primarily a swimming lake with surface vehicles limited to Kayaks, water-

cycles, aqua cars, and unsinkable row-boats. There are sixty camping units, an olympic-sized swimming pool with life guard, grocery, restaurant, and modern bathhouse; swim suits, water vehicles, saddle horses, and Shetland ponies for rent. Fishing is minimal. A popular bird-watching spot, Bitter Lake National Wildlife Refuge, is north of Bottomless Lakes.

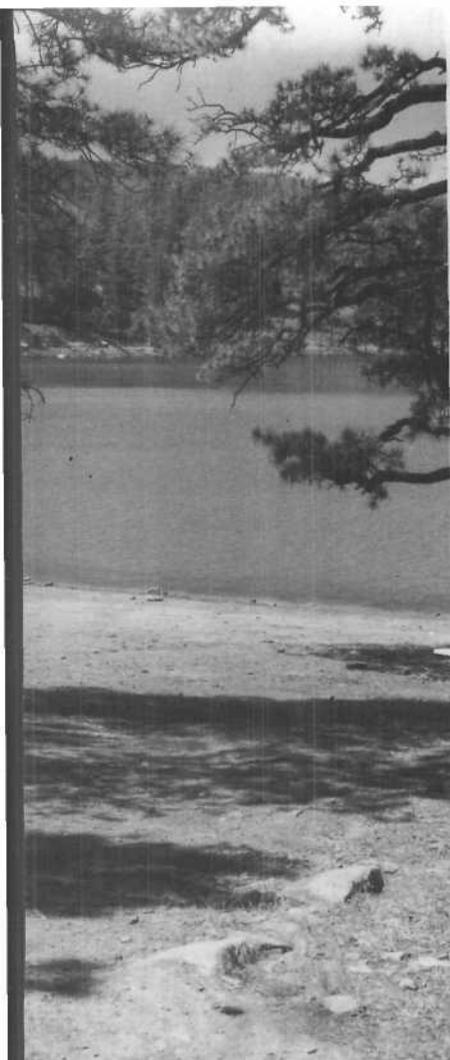
The Valley of Fires State Park, on U. S. 380, three miles northwest of Carrizozo, is located in the newest lava flow in the United States. From the camping areas with restrooms and drinking fountains, trails lead into the black lava rock's ridges, tunnels and caves. It is the hub of a fascinating wheel: archaic mission-Indian pueblo ruins at Gran Quivira National Monument, Abo and Quarai State Monuments; nineteenth century ghost towns; the old Lincoln County War area; Capitan, Smokey the Bear's home; Trinity Site where the first atom bomb was exploded; the White Sands Missile Range with its public missile garden; and the snow-white gypsum playground at White Sands National Monument.

Only a desert lover would enjoy Oasis

State Park, near Portales. This is a huge, natural sand box amid towering Cottonwood trees. Forty campsites are provided for those who like sand skiing, horseback riding and prehistoric artifact hunting.

Fishermen were not forgotten in the creation of state parks. Off Interstate 25 near the town of Truth or Consequences, are Elephant Butte and Caballo Lake State Parks. Both offer good year round fishing for black and white bass, crappie, walleyed pike, channel and flathead catfish; boating and waterskiing; concrete boat launching ramps; boat rentals; marine and camping supplies; and modern restrooms.

Elephant Butte is the larger with eighty camping units plus many parking loops with electricity for trailers and coaches. Caballo is divided into two sections — above and below the dam with camping sites and sheltered units. Hot, mineral baths are featured at T or C. The famous Spanish Trail between Santa Fe and Chihuahua, Mexico, passed both park sites and the remains of Fort Craig and Fort Selden are reminders of devastating Apache raids. To the west on scenic State Highway 90 are some of the old silver



Opposite page: Winding, picturesque Navajo Lake; left, a fisherman tries his luck at remote Morphy Lake. A view of Elephant Butte Lake (above) which is popular for water sports.

Photos by author

mining towns — Hillsboro, Kingston, Santa Rita — dating back to New Mexico's Territorial days.

Percha Dam State Park is five miles south of Caballo Lake on the Rio Grande. There are picnic tables and campsites under large shade trees, playground equipment, water and restroom. Leasburg Dam is farther south, one-half mile off Interstate 25 from the Radium Springs exit. It has accommodations similar to Percha.

Alamogordo Lake, Ute Lake, and Conchas Lake State Parks also offer excellent fishing for walleye, crappie, bass and channel cat. Alamogordo, north of Fort Sumner on U. S. 84, is a long lake suitable for large boats. Ute, two miles west of Logan, is the scene of high speed motorboat races on special holidays.

Conchas Lake on State 104 between Las Vegas and Tucumcari is one of the most popular parks. With many miles of rugged shoreline and plenty of deep water without obstructions, it accommodates the largest pleasure craft including houseboats. The two large recreational areas contain restaurants, grocery stores, launching ramps, marinas, fishing docks, bait

concessions, boat repair and rental, modern swimming pool, golf course, modern bathhouses and toilets; trailer spaces with water, electricity and sewage connections and many sheltered camping-picnicking units. Water sports are excellent—skiing,

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For more information, contact New Mexico State Park and Recreation Commission, P.O. Box 1147, Santa Fe, New Mexico, 87501.

swimming, snorkeling, etc. Along the lake's up-river edge are Indian caves containing pictographs, an old cemetery to explore and many varieties of stones for rock hounds.

In northeastern New Mexico, six state parks form a ring around the historic Santa Fe Trail area. Clayton Lake, near the eastern border, is a few miles south of the Cimarron Cutoff portion of the Trail on State Highway 380. Chicosa Lake to the southwest is near the town of Roy. Storrie Lake and Villanueva State Parks flank the Trail where it looped through Fort Union, Las Vegas, Pecos Pueblo, and Glorietta Pass to Santa Fe.

The national monuments at Fort Union and Pecos afford visitors a comprehensive look at history during and before the Santa Fe Trail's rugged years. Morphy Lake and Coyote Creek State Parks, to the west of the Trail are surrounded by stately Ponderosa pines and magnificent mountain scenery. Trout fishing is good at these parks.

Hyde Memorial State Park, high up in the cool Sangre de Cristo Mountains, offers campsites, many with Adirondack-type shelters. Privacy is afforded each by thick pine, fir, and juniper forests. Hyde makes a good base from which to sight-see in Santa Fe, eight miles below on a good, paved, all-weather road. It is popu-

lar in winter, too, with a free sled run and ice skating pond. The Santa Fe Ski Basin is a few miles to the north.

Rio Grande and Kit Carson State Parks are near Taos, whose art colony is internationally famous. This is ski country with Powder Puff Mountain, Red River, Singing River, Angel Fire, and Taos Ski areas. The famous frontiersman, Kit Carson, along with members of his family and military associates, are buried in the park that bears his name. The Carson House and Museum has a display of historic items well worth seeing.

Other good trout fishing is found at El Vado, Navajo, and Bluewater Lake State Parks. Year round catches at Navajo also include catfish, bass, pike, and Koganee salmon; deer and elk hunting in season is very good. The 15,000-acre lake is a water sports haven for boaters and water skiers. Navajo has ninety campsites, fifty parking pads for travel trailers and coaches, electricity and water facilities, snack bar, launching ramp, marina, etc. Attractions in the vicinity are the well-preserved Indian ruins at Chaco Canyon and Aztec Ruins National Monu-

ments; the gigantic Four Corners Power Plant and Navajo Coal Mine where tours can be arranged; and the Navajo, Jicarilla Apache and Ute Indian Reservations with colorful ceremonial dances open to the public.

Bluewater has many camping units, full marine supplies and services, hayrides and rental horses. This park is not far from the largest uranium field on the North American continent; El Morro's Inscription Rock with signatures of explorers as early as the 1500's; huge lava beds and perpetual ice caves. Legend locates at least one lost mine in the lava bed area.

Coronado State Park is on State Highway 44, one mile west of Bernalillo, just north of Albuquerque. It is adjacent to the Coronado State Monument which has an outstanding museum on the life and activity of the Indians of the Southwest. Its kiva is one of the few available for interior inspection. More than half a century before the Pilgrims landed, Coronado made winter camp, with his exploring army of Imperial Spain, along the Rio Grande near the old pueblo site, which was still occupied at that time.

Coronado Park is the closest to Albuquerque, where a modern city and an old Spanish villa live harmoniously together. In old Albuquerque quaint shops cluster around the plaza; Spanish and Mexican atmosphere abounds; Indians sit on the broad walks vending their handmade articles; spicy aromas lure the visitor into restaurants where he steps into the past. Metropolitan Albuquerque is the home of the University of New Mexico with Maxwell Museum of Anthropology, Geology Museum, University Art Museum, Museum of Southwest Biology and biology greenhouse open to the public. The Rio Grande Zoo, Sandia Atomic Museum, Aerial Tramway, Ernie Pyle's Home (now a branch library), golf courses, tennis courts, swimming pools, art galleries, night clubs, international cuisine restaurants, horse racing during State Fair in September, and pristine air under blue skies are just a few of the many attractions of Albuquerque.

Facilities at all the state parks are being expanded and new parks are on the drawing board so that whatever visitors seek, they will find in the state park system. Following a movement that began thousands of years ago, seekers still come to New Mexico. □

Desert Magazine

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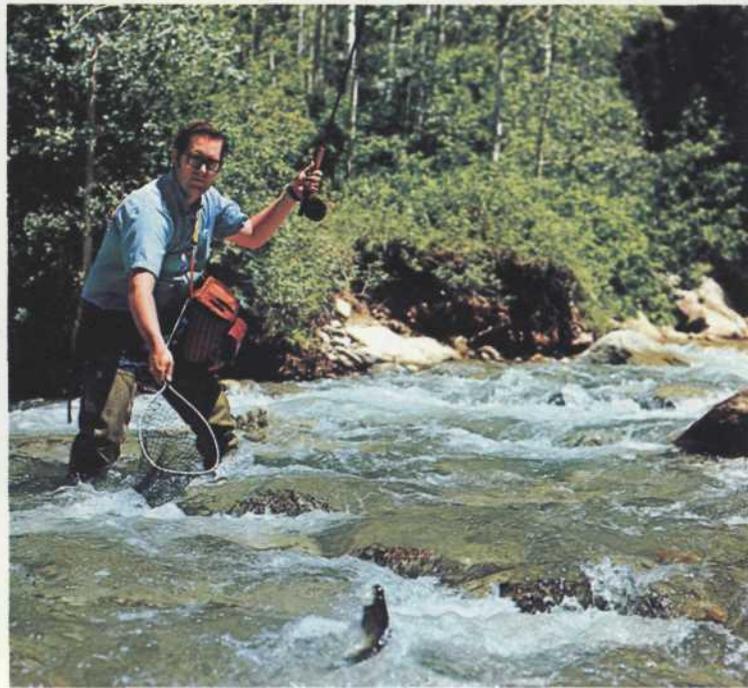
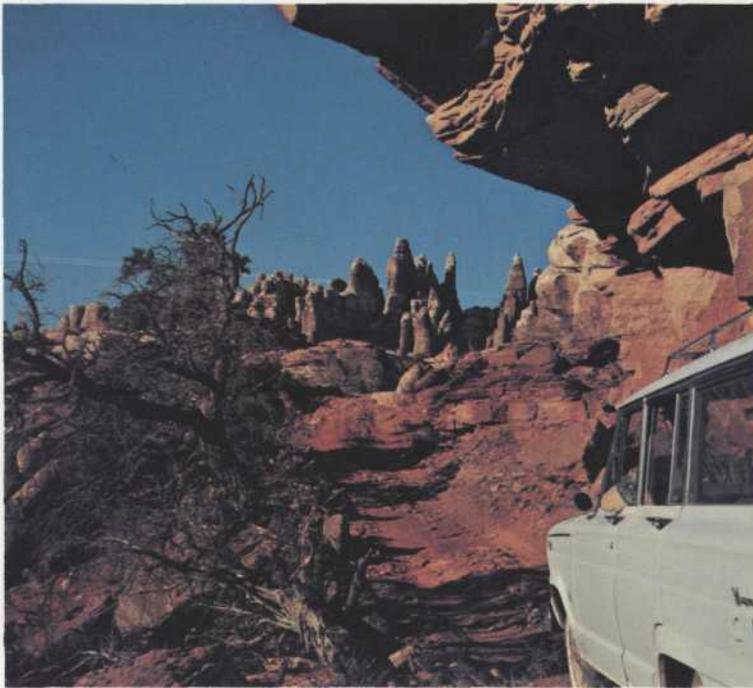
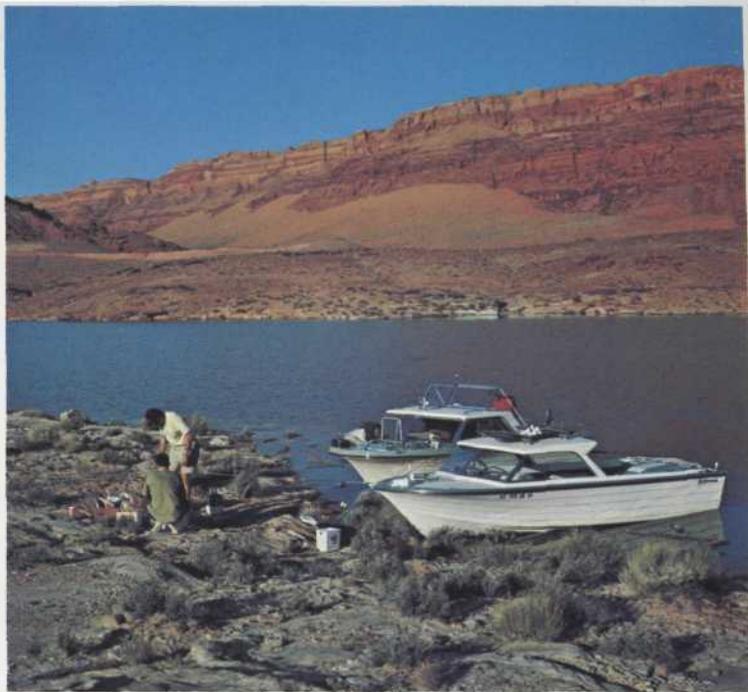
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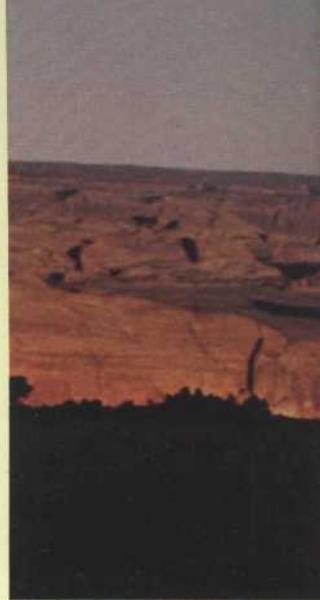
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HAW at

(Left) Hawkeye natural bridge





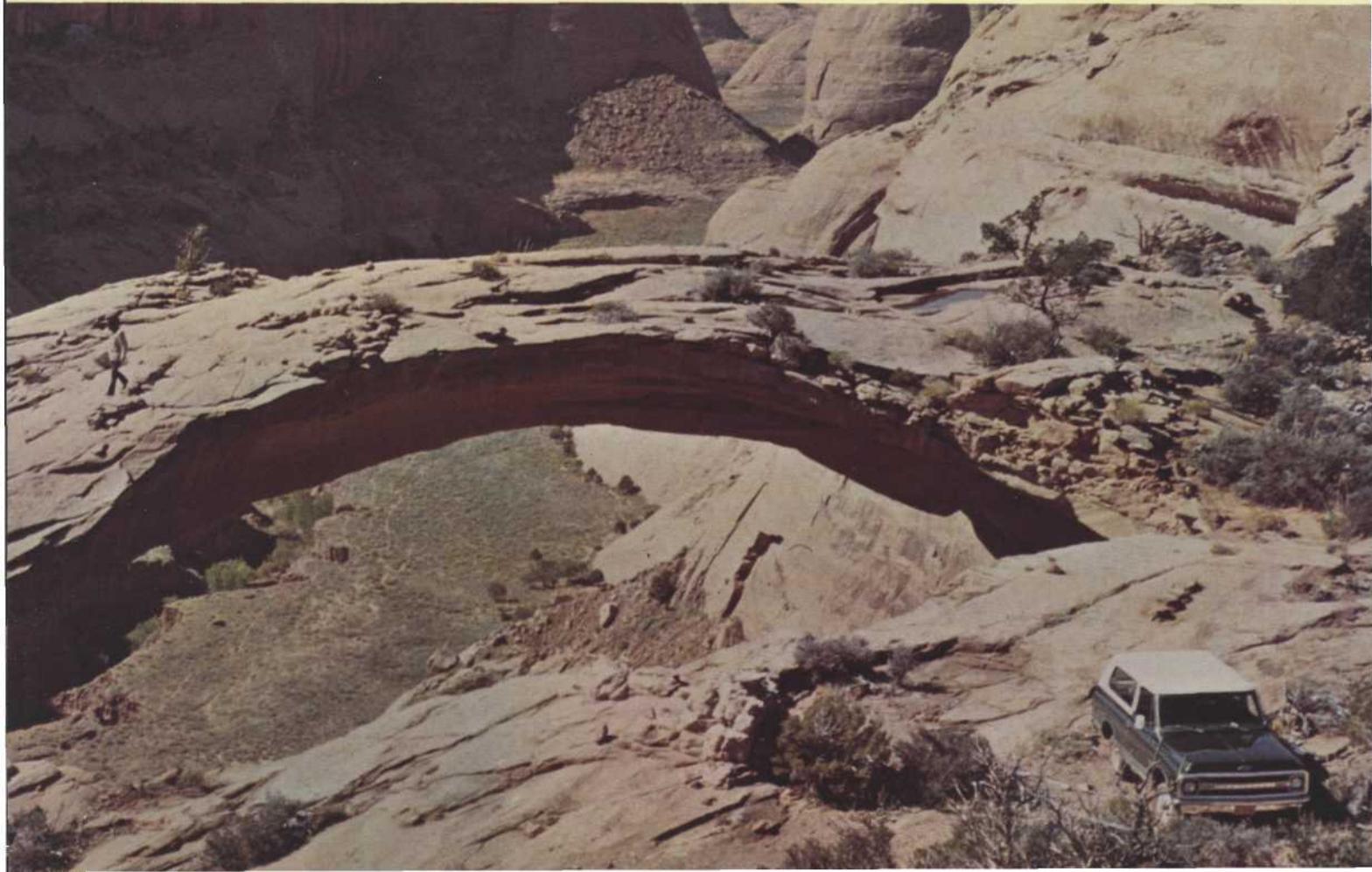
HAWKEYE and a BONUS

by
Bill Knyvett

LIKE MANY *Desert* readers who have access to back issues, either in their personal library or in their community facilities, I enjoy reading about the Southwest as it appeared in the early '40s and '50s.

One particular article which caught my attention was written in 1951 by Barry Goldwater, and was about a natural bridge called Hawkeye. Situated in a beautiful remote area of southern Utah, and accessible only by foot at that time,

(Above) Sunset on the canyon area surrounding Hawkeye; (Below) Eggshell Arch.





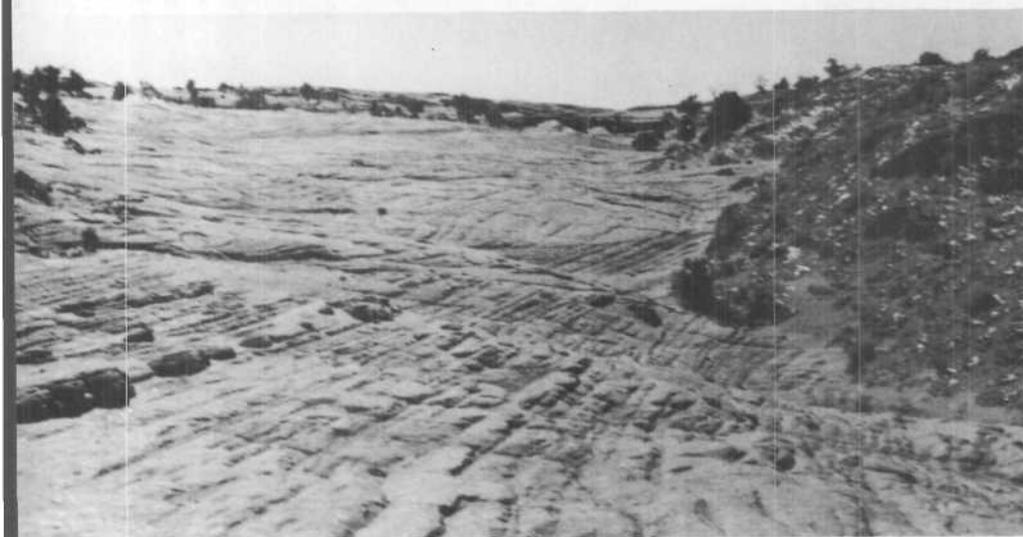
myself out of bed early enough," there might be time to see a "bonus" in the form of Eggshell Arch, which also lay in the proximity of Navajo Mountain, a sacred area of the Indians.

Daylight found us on U.S. 164 heading southwest from Kayenta to the turnoff to the ancient Indian ruins of Inscription House, one of three Navajo National Monuments in this rugged land of canyons and cliffs. We passed Betatakin Ruins and stopped at the trading post of Shonto to check the local road conditions. During the night a light snow had fallen and the red rock and green pine country wore a white mantle that was beautiful to behold.

Driving along Bill explained that he had discovered the "road" to Eggshell Arch while flying over the area in a light plane. Back when the uranium rush was in full swing, bulldozers had scraped a path over the slickrock, and it required all of Bill's driving ability to maneuver our rugged vehicle across this primitive trail.

Without a word of forewarning, he stopped the vehicle and not 30 feet away was a vertical drop of over a thousand feet. Eggshell Arch spanned this 180-foot opening with a 60-foot wide, 38-foot deep sandstone arch. This was some bonus! To give us some degree of size for comparison, Bill walked over the top while we grabbed our cameras.

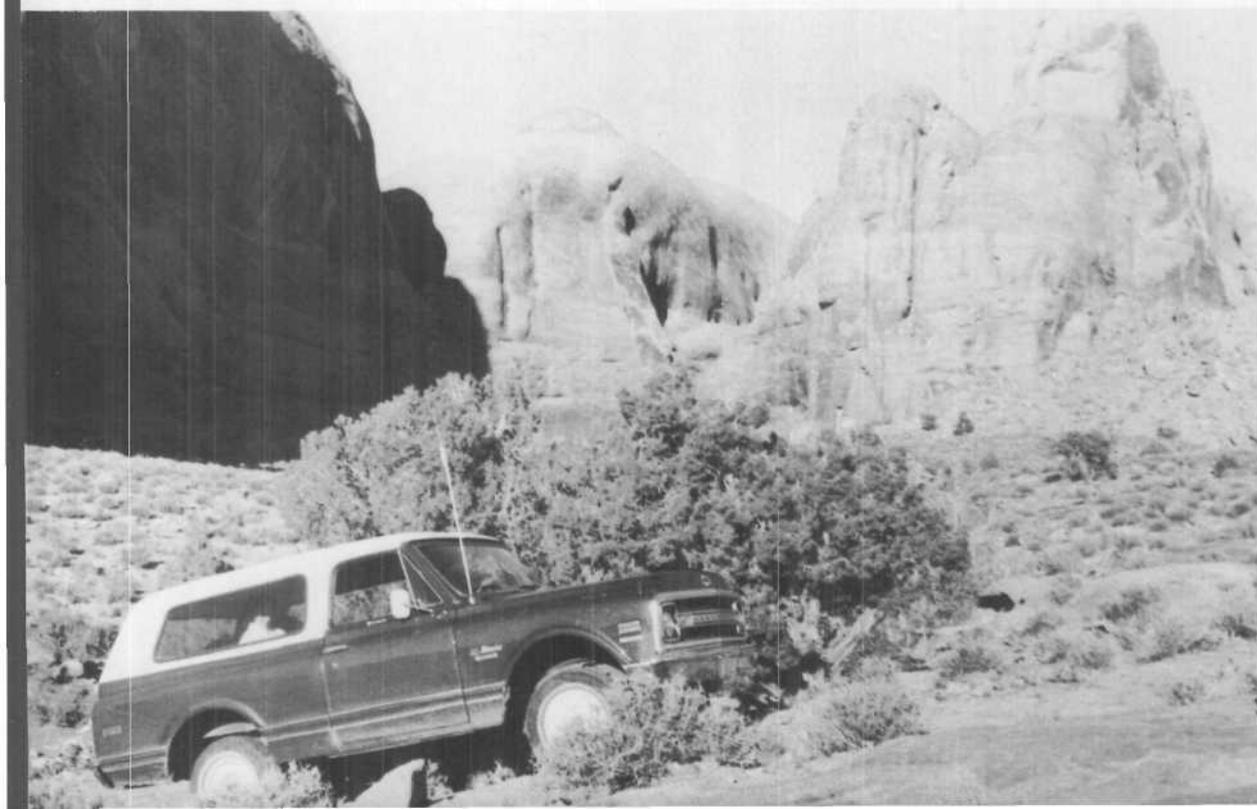
Completing this unbelievable beautiful, tranquil setting, several diminutive



I wondered how the bridge had survived the intervening years.

I decided to check with my long-time friend and guide, Bill Crawley, of Kayenta, Arizona, as to the present day accessibility, and was surprised to learn that

with the additional trails made by the Navajos in tending their sheep, it was possible to almost reach the bridge by four-wheel-drive, leaving only a short hike. Bill said he would be glad to take me there and, in addition, "if I could force



Top: Deserted hogan on the way to Eggshell Arch. Center: Slickrock was our "road" over part of the journey. Left: Climbing out of a creek our 4WD was more than up to the task.

figures of Navajos could be seen on the canyon floor below, cutting wood and tending the gardens around their hogan.

Leaving Eggshell behind, we retraced our route and sped on towards our ultimate goal, Hawkeye Bridge. Turning off the last vestige of a road, we twisted and tested the vehicle's ability to overcome every type of terrain; fording creeks, following sandy washes and descending almost vertical rock-strewn banks.

Once we had passed these rigors, in sharp contrast the land opened into soft, rolling, grazing lands. At every turn there appeared intriguing side canyons that tempted to delay us with their obvious signs of habitation by ancient civilizations.

Again we stopped, and Bill said the bridge was nearby, but it would not be visible until we had hiked a short distance. He had done his job well, for in a few short minutes we stood beneath majestic Hawkeye in that magic moment of the day when the red rock country is radiant.

There, on that clear, serene afternoon, old Hawkeye gazed back at us, and either it winked, or I blinked, but we left assured that this beautiful specimen of Nature would remain for generations to visit and enjoy. □



BILL CRAWLEY
Professional Guide

Bill and his brother, Dillard, own and operate Monument Valley Golden Sands Tours out of Kayenta, Arizona. Bill has been a guide for 13 years and is a bonded and licensed tour operator by the Navajo Tribal Council. His family has been on the reservation for 30 years or more. His wife, Betsy, daughter of a National Park superintendent, spent her entire life in National Parks. Their two daughters, Kammie and Whitney were born in Monument Valley at the mission hospital. A real Southwest family.



(Above) Joy Knyvett, author's wife, and Bill Crawley take a photo break in one of the few areas that did not require locked hubs. (Below) Canyons such as this were encountered often on the route to Hawkeye Bridge.





Above right: Three former "monarchs of the forest" rest uneasily upon their mud pedestals. Above: Madge Young, of Oakhurst, Calif., stands among the thousands of "chips" which have weathered from the tree behind her. The wood is silicified and colorful, but not gem-quality. Below: The Viewpoint offers a spectacular panoramic view of Nevada's Sump. White Mountains in the background.



THE

TRAVELERS ON Nevada's Highway 3-A, north of Fish Lake Valley, will find little to indicate that an amazing array of colorful formations lie hidden in the Volcanic Hills. A small sign, "The Sump—2 miles,"—indicating a sandy road, might possibly lure the adventurous. However, most travelers do not take the time to make this side trip and they are the losers for it.

The Sump is one of Nevada's surprises—a spectacular exposure of sediments which have been uplifted and eroded into a badlands topography. Such exposures can be compared to the pages of a history book, since, from them, the geologist can "read" the record of events which happened eons ago. He can learn about climatic conditions, the types of flora and which species of animals occupied the prehistoric land.

Deposits exposed in The Sump origin-





SUMP

by
Mary Frances
Strong

Photos by Jerry Strong

Above: In the wash we met a resident of The Sump who gave a remarkable impersonation of a "rattler." However, she was just a harmless gopher snake, who didn't like intruders in her domain. Below: Entrance to The Sump is via this wide wash.

ated in a region of low relief whose broad basin was occupied by Lake Esmeralda in the Middle Tertiary Times — some 40 million years ago. The climate was similar to that of present-day, Southern California and a variety of trees was present including oak, willow, fig and ironwood. Ferns, sumac and soapberry were representative of shrubs. Fossils indicate the lake contained fish and shellfish and that early-day mammals roamed the land.

During Late Tertiary Times, following a long period of acquiescence, tremendous rhyolitic and andesitic eruptions occurred. Uplifting of the region followed and the Silver Peak Range and Volcanic Hills were formed. Pleistocene Time found the land subjected to vast eruptions of pumice and numerous basalt flows. The resultant rapid changes in the topography were probably responsible for the preser-

April, 1973



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vation of a standing, petrified forest now exposed in The Sump.

There is more than one theory as to just how the trees were petrified. However, since they were buried in mud the following explanation seems reasonable. In conjunction with the uplifting and warping of the land, new stream courses developed and shorelines changed. The forest was inundated and buried in mud. Over the centuries, percolating waters began the slow, cell-by-cell process of silica replacements which turned the trees into stone.

Geological forces are constantly at work and erosion commenced as soon as the Volcanic Hills began to rise. Any runoff from storms followed the lines of least resistance, carrying away the softer deposits. In time, the huge sump was carved out of the sediments. During this process, which is going on today, the petrified forest has been exposed.

VIEWPOINT

There are three locations from which to view The Sump but the north rim, called Viewpoint, should be the visitor's first stop. A magnificent, panoramic view will be the reward. You will see "geology at work" as you notice the extent of erosion and the drainage pattern. The latter is constructed at the southern end of The Sump, where a wash is seen as a 50-foot "river of sand" flowing to the terminus on a great alluvial fan beyond the hills.

Rock collectors will find obsidianites on the slopes in the Viewpoint area. Follow the tracks east from the rim and you will enter a field of them. Chalcedony limb casts once were collected near the rim, but we found them very scarce during a visit in October 1972.

BOTTOM OF THE SUMP

The Sump is a fascinating area to explore. Over two miles in length, its upper-end has been cut back into sediments that form a curved, steep-walled bowl terminating in a 300-foot vertical cliff at the northern rim. Hills form the southern border and all drainage is confined to a narrow channel cutting through them.

A dirt road, which at times may be partially covered with blow-sand, leads easterly a half-mile to the drainage wash. Generally, the latter is well-packed though tracks in it are often completely obliterated following storms. The average car shouldn't have any problem reaching a

good parking area in the southern end of The Sump. It is not advisable to take trailers into the wash.

The petrified forest will be seen immediately north of the parking area. The trees stand on well-defined pedestals covered with chips. Fortunately, the trees are not of gem-quality material or they would have been hauled away years ago. They are silicified and very colorful.

Exploration of The Sump will disclose many trees and a few fossils. Photographers should have a field day. Rock collectors may wish to hike east out of The Sump to look for good, agatized woods in the hills.

MIDDLE CAMP

One mile south of Viewpoint and one mile north of the entrance to The Sump a road leads to a central camping area a short distance from the highway.

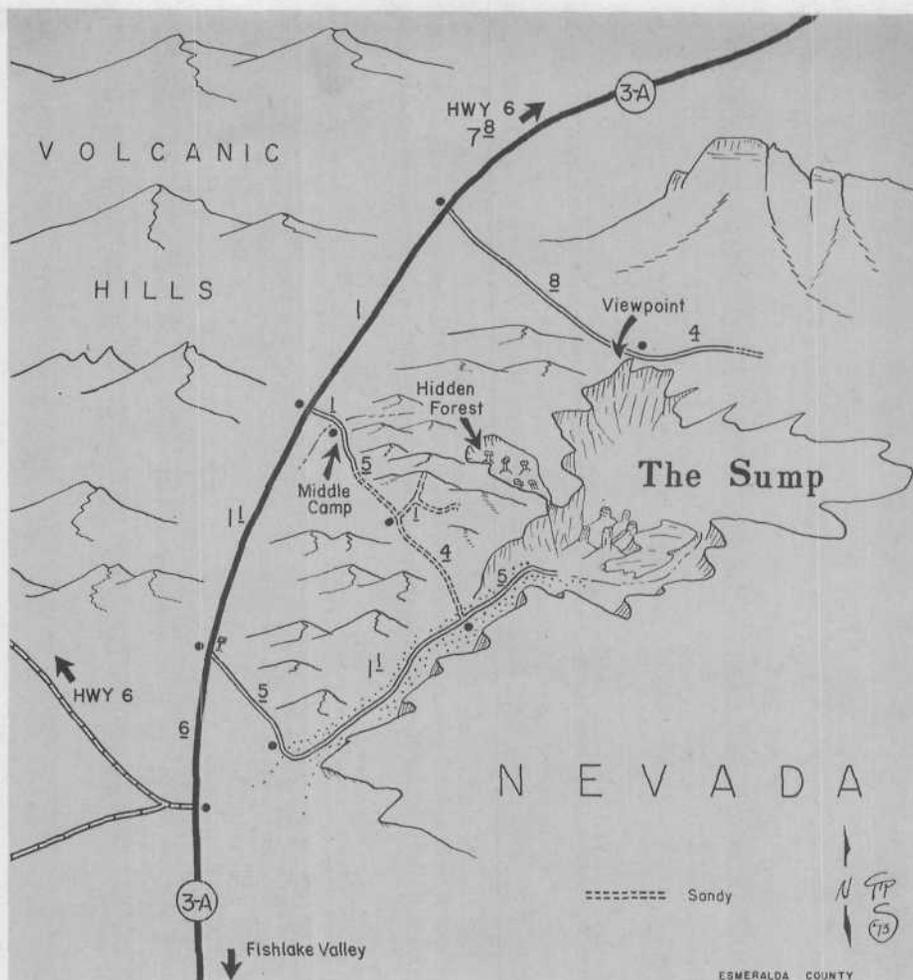
From the campsite, a 4-WD trail will be seen heading east into the hills where it branches in a half-mile. The right branch leads down into the wash which drains The Sump. The left branch leads to a promontory which will provide the opportunity for some excellent over-all photographs of the region.

Just prior to making the short climb to the top of the promontory, tracks will be seen (hopefully) leading a short distance down the sandy soil. Park your "four-wheeler" here and hike about one-tenth of a mile north to a "hidden forest" in a high canyon. Bring along plenty of film. The sight of the petrified trees on their three- to five-foot pedestals of mud is so photogenic you'll shoot many pictures. Fine panoramic shots of The Sump may also be taken from this vantage point.

Visitors are seldom prepared for the splendor of The Sump. Sharp-edged by erosion and tilted at various angles, the exposed Esmeralda Formation simulates a fantasy-land in the bottom of this huge, roofless grotto. The sun's rays dance off the stark-white hills and accent the soft, pastel shades of others. Red, brown and yellow hues of the stone trees contrast strikingly against the blue sky. The quiet is almost overwhelming until broken by a jetplane high in the sky. The barrenness proclaims the aridity of the area and not a tree can be seen. Yet, this region was once covered by forests and streams wandered over the land to empty into a vast lake.

The Sump has told its story well and

April, 1973



we have easily envisioned the past grandeur of the area. Somehow, the almost unbelievable beauty of this now naked land seems more fitting. Walking deep within its recesses, the walls seem to encircle us and there is comfort in their

embrace. A blanket of stillness shelters us from the harried world we have momentarily left behind. Snug and secure within the arms of our earth, we feel at home and completely attune with Old Mother Nature. □

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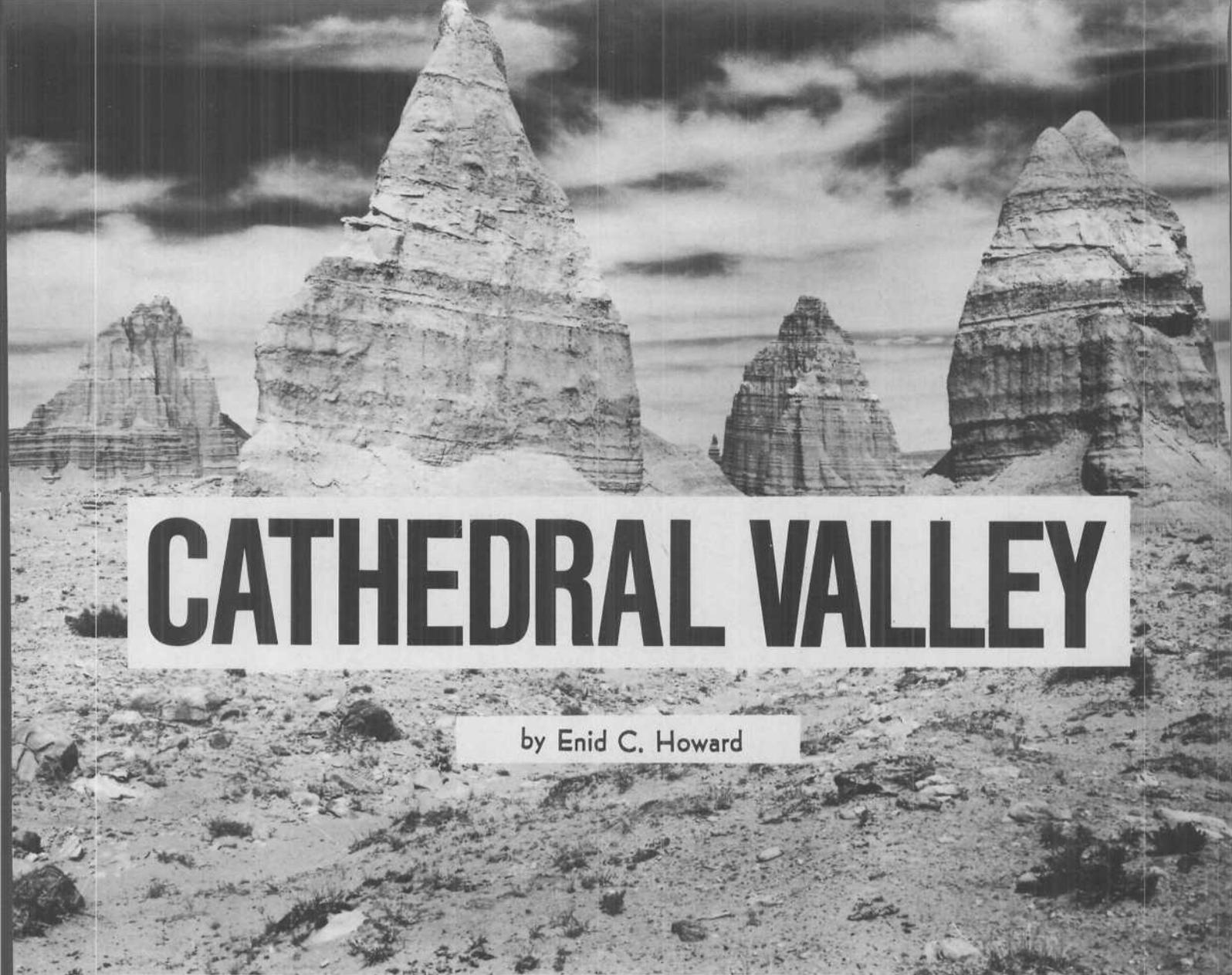
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CATHEDRAL VALLEY

by Enid C. Howard

Temples of Sun, Moon and Stars in Cathedral Valley.

Photos by Joseph Muench

DUST DEVILS dance their wispy gyrations along the 135-million-year-old walls of Cathedral Valley, and the silence of immeasurable time hangs over the deep red cathedral spires topped with resplendent white domes.

The only witnesses to the swirling dust plumes are the white-faced cattle who promenade in rhythmic file, their heads moving up and down with each step, as they follow their daily routine to the water holes. Their silly and prodigal offspring cavort about—calf life at three months is all fun and frolic.

Greening desert grasses and low growing silverleaf buffaloberry, rabbitbrush, joint fir, prickly-pear and hundreds of other desert plants pushed new growth into the late April sunshine. Spring had come to Cathedral Valley as we followed

the winding dirt road into the "back door" of Capitol Reef National Park in central southeast Utah.

This stately and vividly beautiful portion of Capitol Reef is in the northern section, and even today is relatively unknown to visitors to the central and well developed core of the park.

Not everyone enjoys back-country travel, but for those who observe desert terrain and discover the hidden beauty in its sparse vegetation, skittering lizards, jack rabbits, brush-nesting birds, and the shadows of wind ripples across a pristine sand dune, Cathedral Valley and the South Desert areas offer many delightful hours of exploring and photographic opportunities.

It is a fragile land as is all desert, and bears some scars of man's abuse. It is

hoped that all who visit this quiet valley will treat it as though it were their own portion of our beautiful America, and help preserve the natural setting for the stately cathedral columns that are its outstanding feature.

The geologic time periods exposed throughout Capitol Reef and its environs covers a colossal span of earth's history, from the Permian, 230 millions years ago, through the Triassic, Jurassic and the Cretaceous period of about 65 million years ago. The ramparts and contorted surfaces of the Waterpocket Fold, which extends most of its 100 miles within the park boundaries, testify to the violent upheavals that created this wild, upside down land of towers, domes, striated and banded cliffs, bowl mounds and large and small sandy drainage scars.

The entire scene is bound together with such a variegated color scheme it would appear that Mother Nature tried to camouflage a mixup in the paint pot department, or could not make up her mind from one mile to the next just what was to be done to improve the looks of the place, then settled the cool waters of the Fremont River crossing the Waterpocket Fold east and west. The end result is something pretty spectacular in scenery.

Dirt roads into remote desert areas of Capitol Reef are not for passenger cars. Visitors wishing to see and photograph Cathedral Valley and South Desert should stop at the Capitol Reef Lodge, located in the heart of the Capitol Reef National Park one-half mile from the visitor center, and talk to Clair Bird who owns and operates the Lodge and calls this widely scenic land his back yard. Clair's fleet of four-wheel-drive station wagons takes visitors into primitive areas on day tours conducted by experienced guides who explain geological and historical facts to make the tour interesting and well remembered.

Capitol Reef was established as a National Monument in 1937, and achieved National Park status in November, 1971. Over the years, the United States Department of the Interior developed facilities that provide a varied and interesting va-

cationland in the dramatic setting of the warped and twisted Waterpocket Fold.

There are large, excellent campgrounds one and one-half miles from the Visitor Center, adjacent to the Scenic Drive Road, near the Fremont River. There is no firewood or hookups for trailers. Camping within the park is allowed only at the above campground.

A prime attraction within the park is a well developed system of hiking trails throughout the central portion. The Capitol Reef Trails Map, obtainable at the Visitor Center, lists all trails, distances, and states whether trails are easy, moderate or strenuous so that one may choose any of 12 destination hikes according to walking ability. Fascinating names like Frying Pan, Whiskey Spring, Goosenecks, Cohab Canyon, Cassidy Arch and Golden Throne lead the hiker on to explore the spectacular display of domes, canyons, overlooks, arches and Hickman Bridge.

Men have always followed the waterways of the land and settled along the verdant valleys as did the ancient Indians who left their petroglyphs on the canyon walls, and storage cysts on small shelves in Capitol Reef. Mormon settlers found their way to the hidden valley along the Fremont River as early as 1850 and tried to establish a permanent community, but

the limited area available for cultivation could not produce enough to sustain even the small village of Fruita, and the project was abandoned.

One of the early settlers, Elijah Cutler Behunin, built his log cabin well. It still stands intact along the Scenic Drive Road. The old Fruita schoolhouse, built about 1890, was used through 1941 as a schoolhouse and community meeting house, but acquired new stature when the National Park Service restored and refurnished it to nearly the way it was when last used.

For the back-country buff who drives his own four-wheel-drive vehicle, the signed turnoff to Cathedral Valley is 20 miles west of Hanksville, Utah, on State 24 at Caineville. This is a jeep road, and rough. I would recommend a stop at the Visitor Center to obtain a map folder of the park and vicinity, along with current information on the roads. I logged the South Desert—Cathedral Valley rim loop road at 67 miles. If possible, travel with two vehicles as it would be a long walk out if mechanical problems developed. Access to South Desert is good at the north end of the rim road, but doubtful at the south exit because of washouts where the road climbs up the cliff near Courthouse Rock.

One of the noticeable characteristics of



The Walls of Jericho, in Upper Cathedral Valley, Utah, with Thousand Lake Mountain as a background.

Capitol Reef are the neatly rounded black basalt boulders, large and small, scattered everywhere. They are the remnants of an ancient lava flow that covered a vast portion of nearby Boulder and Thousand Lake Mountains. They were carried by glacier and deposited at Capitol Reef about 25,000 years ago.

Two points of interest are best viewed at certain hours. Jailhouse and Courthouse monoliths, below the South Desert rim, blaze with brilliance in the sun of late afternoon, and the overlook of South Desert at the junction to Cathedral Valley and Fremont, is a thing of joy and beauty when the sun awakens the day to reveal South Desert in the mists of early morning.

And who would ever imagine they could enjoy a leisurely lunch at the Temple of the Sun, and the Temple of the Moon all in one day! This is possible in Lower Cathedral Valley.

An extremely interesting feature of Lower Cathedral Valley is the prominent cross valley dikes, sills and volcanic plugs. About twenty million years ago, molten rock intruded into sub-surface cracks and fissures, and because of subsequent erosion are now exposed as thin black scar lines across a somber desert landscape, and thrust their sharp pointed crests high above the surrounding surface.

How did Capitol Reef acquire such a stately name? As with many principal landmarks of the west, imagination played a major role in the naming. The round-

ed domes of Navajo sandstone resembled those of Federal and state capitols. The word "reef" was slightly more obscure, but was plagiarized from the vocabulary of sea-going men, and referred to the rock reefs of the seas. Miners appropriated the term to describe any impassable, natural rocky barrier.

As a visitor to Capitol Reef National Park you are encouraged to use the many fine facilities provided for your enjoyment and understanding of this unspoiled, natural garden. Cherish and respect it, so that all who come after you may walk in beauty also. □



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by Hans Baerwald

Young burrowing owl gives the camera the "evil eye".



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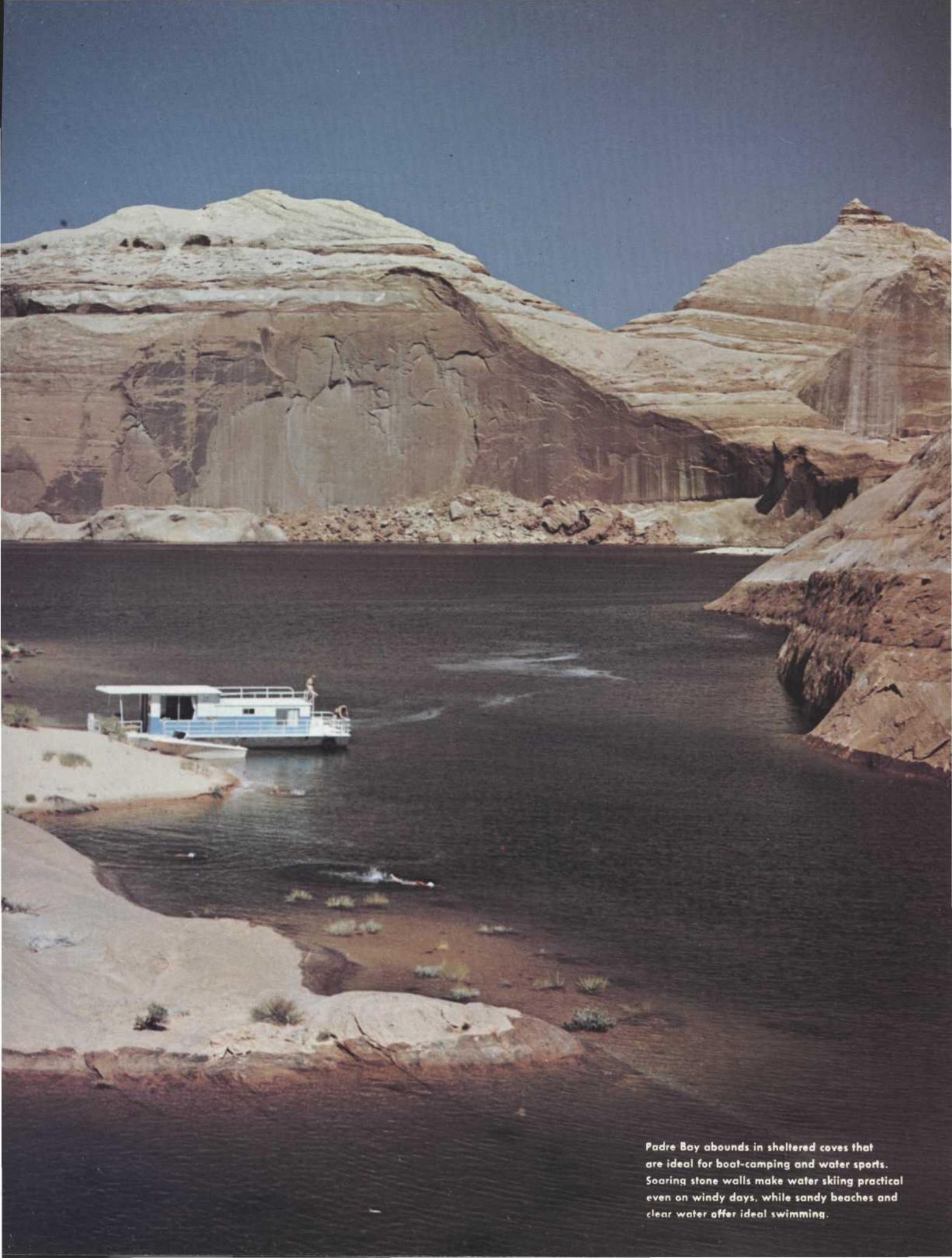
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Padre Bay abounds in sheltered coves that are ideal for boat-camping and water sports. Soaring stone walls make water skiing practical even on windy days, while sandy beaches and clear water offer ideal swimming.

Lake Powell's

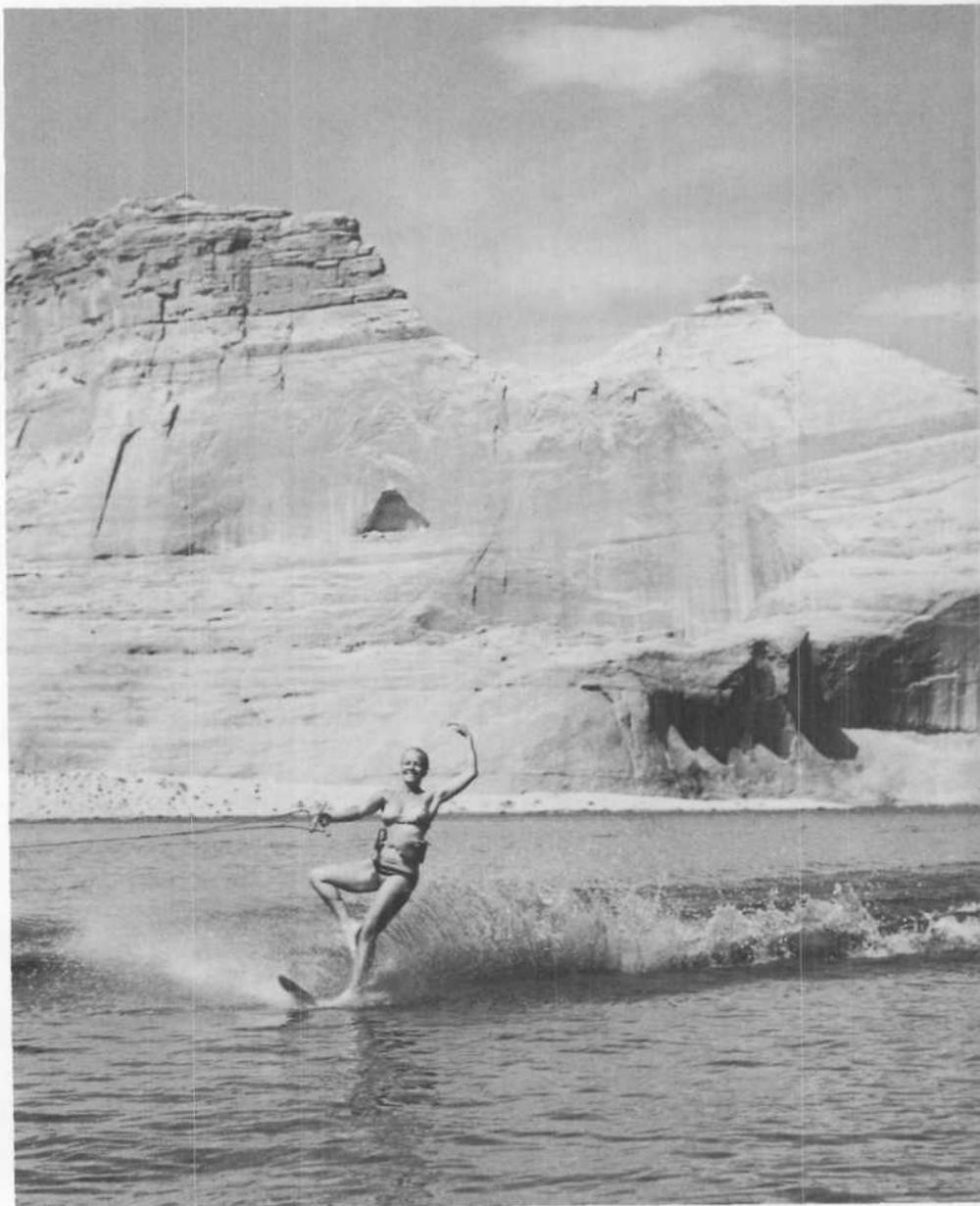
Padre Bay

by Fran C. Barnes

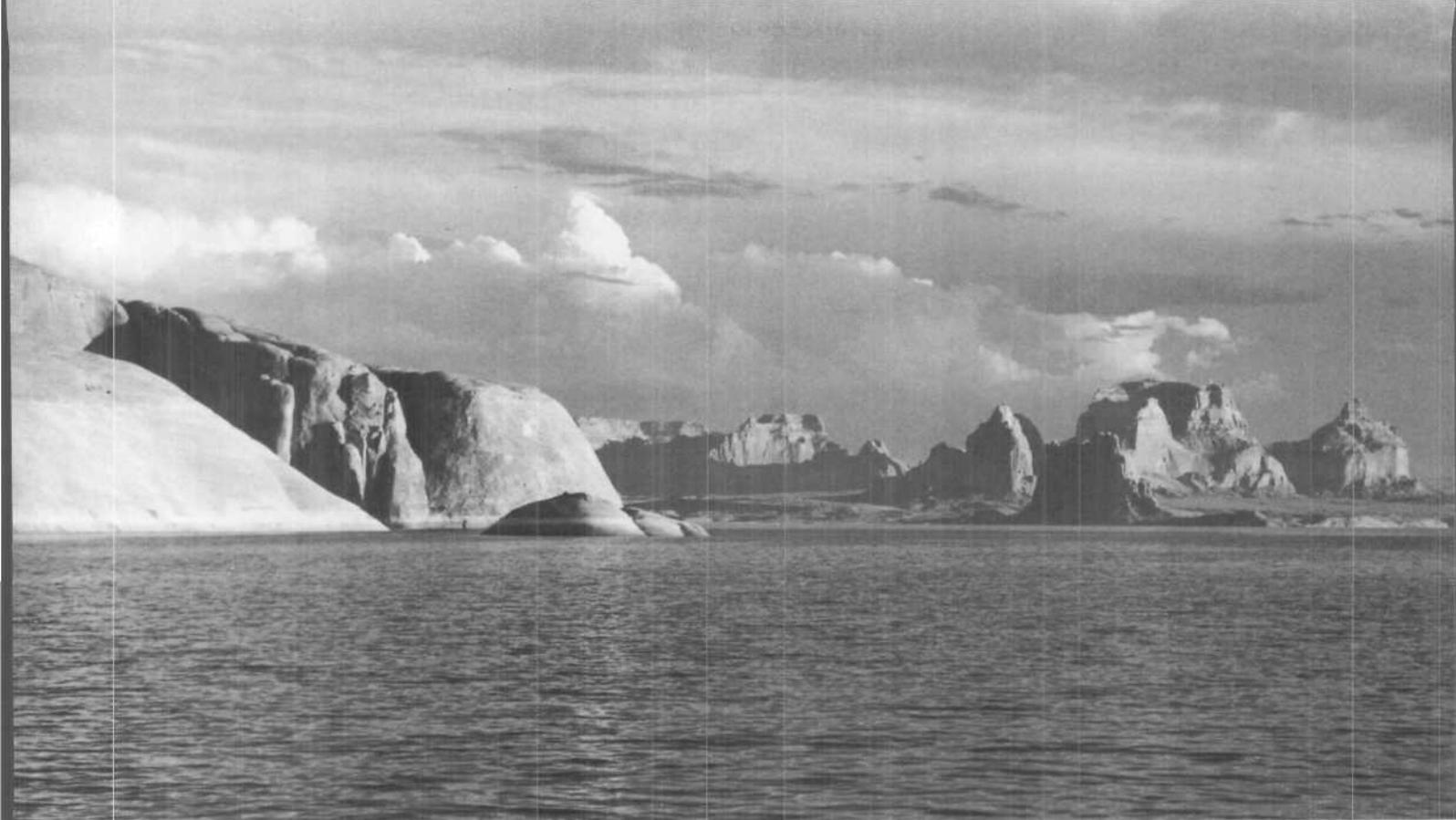
Early Spanish explorers were among the first to penetrate the rugged, untamed stone wilderness that contains Lake Powell in southern Utah. The place where one such hardy group crossed the deep Colorado River gorge was later named "Crossing of the Fathers," and a spectacular red-rock monolith that stands nearby came to be called "Dominguez Rock" after one of the missionary "Padres" who contributed to the history of the region.

To the northwest of Dominguez Rock, on the other side of the river gorge, a long tributary canyon gave access to the land to the north and west of the crossing site. The stream that flowed down this canyon was called "Padre Creek," and when Lake Powell eventually began to form behind Glen Canyon Dam, the huge body of water created to the north and west of Dominguez Rock became known as Padre Bay.

Lake Powell is almost two hundred miles long, with a shoreline estimated to be ten times this, but the lake fills a maze of deep and narrow gorges and thus more nearly resembles a slender snake than it does the broad, open lakes that are normal elsewhere. Only in a few places does the lake spread out into conventional proportions. Wahweap, Warm Creek, Last Chance, Rock



Water skiers find the calm waters of Padre Bay excellent for practicing tricks. Sheer walls of rock hundreds of feet high jut from the water, dwarfing humans and their activities, yet lending a stark beauty to the bay that is unique.



Above: Evening is a time of dramatic lighting and vivid coloring on Padre Bay. Summer storm clouds often give depth to the sky, while the lowering sun spotlights the western faces of Dominguez Rock and the other enormous stone towers that dominate the south shores of the lovely bay. Evening is a time of quiet beauty on Padre Bay, a type of beauty that you will remember forever.

Left: In the northernmost finger of Padre Bay, dozens of tiny coves have formed in low-lying slickrock domes. Here, too, the softly rounded contours of red and white Entrada Sandstone are dominated by sheer-walled, yellow-hued cliffs of Jurassic sedimentary rock.

Right: This one small corner of huge Padre Bay is dominated by Entrada Sandstone domes and ridges. This particular geological formation is one of the most colorful of all those found around Lake Powell. Partly submerged domes form solid-rock islands in the blue water.

Below: The sheer mass and height of the cliffs that surround much of Padre Bay can be appreciated only by boating along their bases. Most such rock walls extend just as far beneath the water as they do above. Fracture lines and rainwater streaks have given the cliff faces strange textures and patterns. Houseboats such as this one can be rented from the major marinas on the lake.



Creek and Bullfrog Bays are all big, and are all surrounded by outstanding vistas of colorful, weathered sandstone.

But Padre Bay is the broadest, most beautiful of all, and its deep blue waters are accented by massive walls and abutments and ridges and towers of the most vividly colorful sandstone formation in all of Utah.

The shoreline of Padre Bay is as varied as a shoreline can be. Sheer walls of rock plunge into the depths around much of the bay. Giant peninsulas of rounded sandstone subdivide the northern part of the bay, and the protruding tops of massive rock domes form off-shore islands in many places. Where solid rock gives way to stretches of pink-sand desert, lapping waves have created firm beaches that are oddly studded with desert shrubs and cacti.

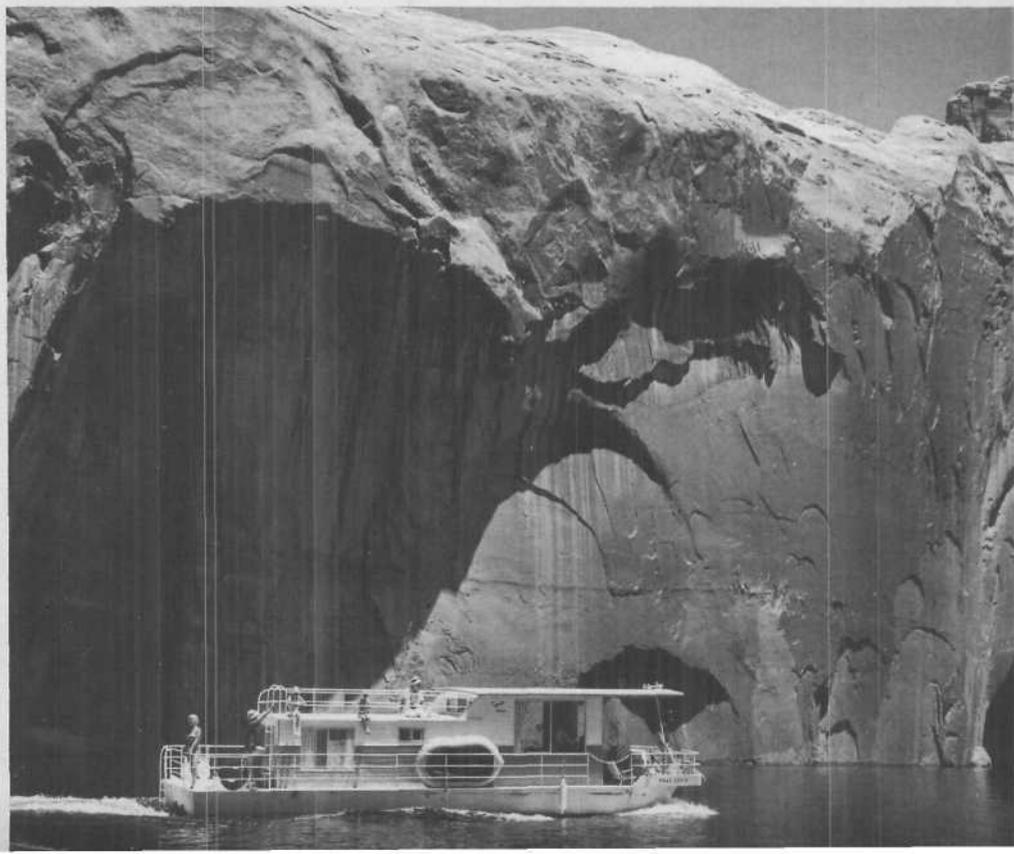
Padre Bay is twenty-five miles by boat from Wahweap Marina near the dam, or just a few minutes by air in one of the scenic flights that originates in the nearby town of Page.

The many protected coves

within Padre Bay make it ideal for boat camping, whether you prefer to camp on a sandy beach or upon a gentle slope of solid rock. Sightseeing and photography are outstanding from the open water or shoreline, but short hikes up onto any of the sand-

stone ridges that jut into the bay lead to views that are incomparable.

Indeed, Padre Bay provides the ultimate in desert-like beauty, a sparkling blue jewel set in a redrock vastness that mere words cannot begin to describe. □





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Rambling on Rocks

by
Glenn
and
Martha Vargas

ALKALI ON THE DESERT: Springs and Flats

A LKALI IS COMMON in the deserts. Most desert water supplies have more than a trace; and the alkali flat is well known. Both have one thing in common; a certain content of chemicals we loosely call alkalies. These are usually the carbonates of sodium or potassium, or may be ordinary lye (sodium hydroxide), common table salt, or any bitter, saline, or astringent tasting chemical.

The name alkali comes originally from the Arabic; "al-" the, and "qualiy-" the ashes of a certain plant. This was (or is) a salt-loving plant that no doubt grew in the desert places. The early Arabs evidently found that if they burned this plant they would obtain certain chemicals that were useful to them. The word has since gone through the French and then old English to our present form.

Actually, alkali springs and flats really have only the chemicals in common. They are really quite different geologically. It is possible for an alkali spring to contribute

to the content of an alkali flat, but usually the waters from a desert spring do not move far. Most desert springs have a very small flow; the water sinking quickly into the ground, depositing any alkali close at hand.

An alkali spring has its source somewhere deep beneath the surface, and as the water moves toward the surface, it dissolves various chemicals out of the rocks it passes through. These waters may travel great distances beneath the surface, becoming more and more alkaline as they move. Alkali springs are more commonly found in or near sedimentary rocks, for it is these that contain the greatest concentrations of easily dissolvable chemicals.

Rocks, other than the sedimentary types, also contain the alkali chemicals, but usually only in very small concentrations, but these may also contribute to the alkalinity of springs. The sedimentary rocks that were the final result of moving water contain the greatest amounts of alkalies. Under these conditions, chemicals, sand, silt, and clay were washed into basins and all subsequently buried by more material. As the original rocks were broken down into fine particles, the chemicals came along with them and were concentrated by evaporation at the end of the journey.

There are numerous springs of high alkalinity in our deserts, some with a very bad reputation for taste. However, at times all of them have been a welcome sight to a thirsty traveler. When no other water is available, any water is welcome, no matter how it makes one wrinkle up his face after a drink.

Seldom does today's traveler have to depend upon widely spaced springs for water, and we tend to visit them callously. If we taste them and find the water not to our liking, we might feel that it is not good to drink. A look near our feet will tell us otherwise, for we are stepping on

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Badwater, in Death Valley, most famous of all alkali flats.

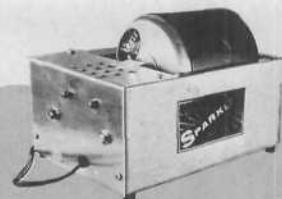
many tracks of animals and birds that regularly call for the precious commodity. If these desert residents can drink without problems (they may wrinkle their faces, too), then man can do likewise if the necessity arose.

Many of these unpretentious water holes—they may be only a basin as large as a small fry pan—have on the rocks surrounding them, the signs of prehistoric man. The waterhole was a gathering place for the Indian. He spent much time there, both for the water and the animals that visited it. During periods of relaxation, he engaged in some of his artwork in the form of petroglyphs. Today, we are unable to decipher these drawings. They may have been simple doodling, messages left for another, chronicles of a trip, or may have served a purpose that has not even been guessed. Regardless, the pres-

ence of these works of art are evidence of the importance of the water, no matter how it tasted, or what its quantity.

Many of these springs contain so much dissolved material that the ground for a number of feet away from any visible water may be as white as snow. This is an accumulation of matter left behind after many years of evaporation. Usually, the more alkali surrounding the spring, the more distasteful is the water, but it is seldom that the signs of wildlife are not present.

Many times we have heard of poisonous arsenic springs. In our travels we have searched for them, but have never seen one. We will not deny that they exist, but we are very dubious. Our doubt stems from the behaviour of arsenic minerals. First, they are exceedingly rare. Second, most of them are not soluble in water.



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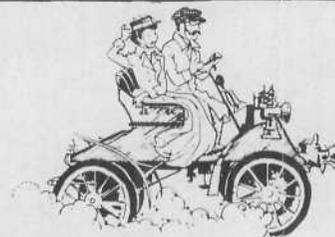
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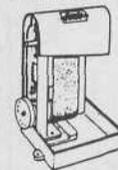


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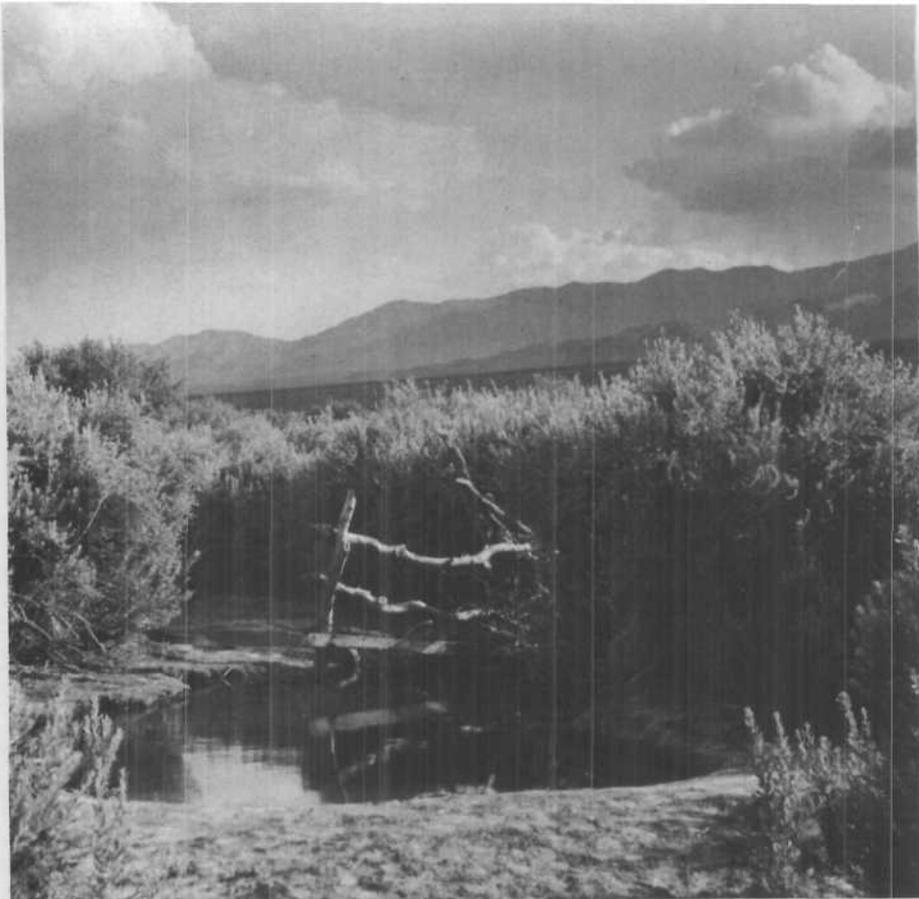
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Typical alkali spring

Third, arsenic is a poison only in large quantities, or over long periods of consumption.

If there is an arsenic spring, the quantity of arsenic in the water would be infinitesimal, and normal draughts of even a thirsty person would not contain enough to make him ill. If a person stayed at such a spring for many days or weeks, then perhaps he might feel the effects. We are prone to consider the stories the result of lore built up around someone of great thirst drinking large amounts of highly alkaline water and becoming very ill from the high chemical concentration.

Alkali basins are much like the sedimentary rocks discussed in a previous paragraph. These are more or less flat basins that receive the runoff from desert cloud-bursts. Very few of them are fed by a regular stream, but if they are, the results are the same as that of rain runoff.

As mentioned before, practically all rocks contain minerals that will easily dissolve in water. As runoff moves on and through loose sands and gravel on a hillside, it moves these particles downward, and at the same time dissolves any soluble material. All these are carried somewhat rapidly down toward the basin below. Only the finest rock particles—clay, silt, and sand make it all the way down

and are spread across the flat. All of the dissolved materials makes the trip, however.

After the rain is over, the water begins to evaporate. As this takes place only on the surface, the dissolved chemicals become a crust on the small rock particles. The water beneath the surface moves upward and deposits its burden as it evaporates. Thus, an alkali flat, for a few days after a rain, may look much like it is covered with snow.

If one scratches the surface, he will see that the sediments below are brownish, and not white, for they contain very little alkali. The winds may blow the white powder from place to place within the basin, but the surface will remain more or less white. It may take on a brownish tinge from very fine sand that it blown upon it during the interval between rains, but with the next rain, the alkali will again crust the surface.

From an ecological standpoint, there is a great difference between an alkali spring and an alkali flat. If such a spring may become a haven for wildlife, the exact opposite is true of the flat. Not only is an alkali flat usually devoid of water, but the chemical content is so high that virtually no plant will grow. Thus it is shunned by nearly all living things. □

GRASS VALLEY LOOP

Continued from Page 13

tiful grounds surrounding the magnificent stone mansion, once the home of W. B. Brown Jr., principal owner of the Empire. It was built during the 1890s. Other buildings on the property and an old mine hoist still in place give some idea of the magnitude of the operation.

An interesting relic of the old North Star mine is located at the south edge of town, on Wolf Creek in Boston Ravine. Here is located the stone powerhouse for the entire mine and the largest Pelton wheel ever built at that time. It was invented by Lester Pelton, of Comptonville, in 1878. The diameter of the wheel is 30 feet, and on the rim are attached about 60 cups or buckets. A jet stream of water forced through a nozzle under great pressure, directed against the buckets, drove the wheel at high speed. The wheel in turn drove the compressors which supplied air power throughout the entire mine, for pumps, drills and hoists for many years.

Social circles that existed in Grass Valley in 1853 were startled by the arrival of Lola Montez, an early-day actress and adventuress, said to have had a somewhat lurid past in Europe. Moving into a house at Mill and Walsh Streets, which still stands, accompanied by a pet monkey and grizzly bear, she soon was at odds with her husband. In a churlish mood one day, not too uncommon with grizzlies, it attempted to take a sample from the husband's leg, and was dispatched with a rifle ball by the irate man. The resultant furor, caused by the demise of her pet bear, severed the marital ties of the couple.

While Lola's erratic and injudicious behavior about town created much amusement and choice gossip, she still was given full credit for her early interest in the coaching and development of the child prodigy, Lotta Crabtree, who went on to international stage fame.

Among some of the old buildings still in use about town is the Emmanuel Episcopal Church, of an interesting old architectural design. The present building was first opened for service in August, 1858 and is the oldest Episcopal Church in California.

Four miles west of Grass Valley on

*Old Stewart Bros.
store and Wells
Fargo office in
Timbuctoo, Calif.,
appears to be
losing the battle
with time.*



State 20 is the once boisterous old mining camp of Rough-and-Ready, named in honor of General Zachary Taylor by men who had served under him in Mexico and regarded him as a tough campaigner. Placer diggings were rich here in early 1850 and optimism reigned regarding the future of the camp. However, rumors of an impending miners' tax to be levied threw some of the settlers into an uproar.

A group of protesting miners, under the leadership of one E. F. Brundage, proposed the establishment of their own separate state or republic, and Brundage, as president of the group, proceeded to draft a constitution in high sounding legal phraseology. The germination of this idea was thought by many to have originated in the grogshop, after a suitable priming of spirits.

In those days, as every pioneer gold-seeker knew, no camp could be regarded as definitely established until some entrepreneur had moved in with a cask of what purported to be a distillation from corn, rye or barley—sometimes a trifle rank. At a meeting place for exchange of information, the saloon was regarded by many as the fount of all wisdom and source of the latest and most reliable news releases. It therefore, in all probability, was used as a launching site, by Brundage, for his profound manifesto. Sober reflection followed and eventually

Brundage's idea was laughed out of existence.

An interesting relic of the old days is the Tiffin blacksmith shop which escaped the early fires and still stands on the main street, although on doubtful underpinning. Across the street is the old toll house, erected at a narrow point in the road which was closed by a chain. The building, still in excellent condition, houses an antique shop with an interesting display.

About eight miles west of here on State 20 is a turnoff, marked by a sign, leading about a mile to Timbuctoo, an old mining town and stage stop, once a thriving community which has about disappeared. It is said that some of the earliest prospectors in the region found the original locator to be a native of that African country, and named the town after it. The only remaining building in the old town is the Stewart Brothers store, once occupied in part by the Wells Fargo office. Although restored in 1928, and now in a dilapidated condition, the building appears headed for collapse.

Returning to Grass Valley, after this pleasant one-day outing, the visitor may map out another trip to the interesting and picturesque old camps which abound in all directions from this most important and productive hub of the northern mines.

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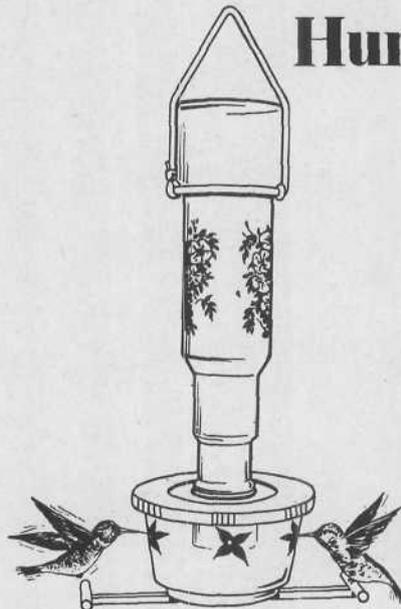
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GUMMED NAME AND address labels: 1000—\$1, 3000—\$2.25. Two-week delivery. C. Friday, 4705 Adam Road, Simi Valley, Calif. 93063.

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Letters to the Editor

Hiker's Two Cents.

In the past several issues I have noticed something of a running argument going on in the letters section between desert rockhounds, hikers, 4WD and ATV enthusiasts. So I thought I'd get my two cents in.

I'm not only a "Knapsacker" but a member of the Sierra Club and the Friends of the Earth also, and while I have little love for people who think that OUR desert is their own private proving ground for their guns, spray paint and vehicles, I have no complaint against any responsible person, regardless of their recreational interest. Oh, on occasion, while hiking I've been passed on the road by some vehicle and engulfed by the trailing dust cloud, but it's good, clean desert dust and doesn't hurt a bit. What does hurt is seeing a dirty, littered campsite, graffiti sprayed in rocks, a new housing project, etc.

What I'd like to emphasize is, no matter what our interests or modes of transportation, we all have one thing in common; that is Love for OUR Desert, and if we don't work together (Hikers, Rockhounds, 4WD/ATV, etc.) to save our desert, we won't have it much longer.
M. R. RAMPLEY,
Great Lakes, Ill.

Trees That Crowd . . .

Re Dorothy Sundberg's letter in your January issue, Mrs. Sundberg is apparently not aware that the tamarisk tree is not an indigenous American plant; it was introduced here from North Africa to be used as a windbreak. It is an extraordinarily aggressive tree, so much so that our natural vegetation cannot compete with it. Wherever it becomes established, the tamarisk chokes out everything else.

If the Park Service did not attempt to eliminate the tamarisks at Saratoga Springs, the trees would eventually draw so much moisture that the open water would shrink drastically, or even disappear, as has happened at the Eagle Borax Works further up Death Valley.

GEORGE SERVICE,
Palm Desert, Calif.

Turtle Talk . . .

With reference to a *Desert Magazine* article of June 1964, by Kenneth Marquiss, called, "Jim Dollar's Jim Dandy," unfolds another tale of lost treasure. The Jim Dollar gives landmarks like "a humpback hogback with a point

like a turned-up nose at the north end . . . and it looks like a blanket-wrapped squaw grinding corn, and the ore looks like frozen butterscotch, streaked with green-tinted gold".

Perhaps I should have said, found treasure, for the above is true. The frozen butterscotch color is a matter of opinion, and the green is copper. On our last trip out (my wife's first trip to the Turtles), I showed her the landmarks to the Jim Dandy and the area of the "lost ledge". The ledge is indeed there, and was once worked, as all the highgrade surface ore is gone. As I was collecting samples, my wife, Judy, was busy discovering her first "treasure!" It was found near the gold ledge in a little cave and consisted of three hand-forged picks, two skillet lids, two porcelain-coated coffee cups, a three-prong fork with an iron handle, and a kitchen-knife with a wooden handle which was partly decayed. The knife and forks are listed in the 1894-95 Montgomery Ward catalog. Also in the area, we found some old cans with soldered tops that had been opened with a "poke and pry" can opener. (see photo.)



Our old prospecting pal, Slim Johnson, from nearby Parker, Arizona, and I also found gold-bearing red hematite in the same area. It sounds like the "Lost Arch" hematite, as there is good color in the area. As far as arches go, I know of at least six or eight landmark-sized arches in the Turtles, one of which shows the way to the above mentioned area.

In summary: Over the past five years, I have walked probably several hundred miles through the Turtle Mountains, at one time spending three months camping there with Slim Johnson. So I tell you this with all sincerity, you will not find it on wheels, you MUST get off your duff and do some long, hard walking! Regardless, I don't feel, at today's prices, anybody would become fabulously wealthy by owning this "mine," so I tell you with a big, wide grin: "The wealth is in the search, more so than the find."

FRANK W. KUCHENSKY,
Costa Mesa, Calif.

Information Source

Your magazine is a constant source of intriguing information and joy to us. As ardent campers, ghost-town hunters and desert lovers, we enjoy each issue thoroughly. I guess you are well aware of that by the number of binders you sell to those of us who wish to keep back issues.

(MRS.) D. H. QUINLAN
Torrance, Calif.

Calendar of Western Events

Information on Western Events must be received at DESERT six weeks prior to their scheduled date.

MARCH 31 - APRIL 1, NORWALK ROCK-HOUNDS GEM SHOW, Masonic Hall, 12345 E. Rosecrans Blvd., Norwalk, Calif. Free Parking.

APRIL 14 - 15, ANNUAL RIVERSIDE COMMUNITY FLOWER SHOW, Riverside Memorial Auditorium, 7th & Lemon Streets, Riverside, Calif. Adults \$1.00, Children free with adults. Contact: Mrs. Wallace Hall, 3969 Linwood Pl., Riverside, Calif. 92506.

APRIL 14 - 15, WESTERN ROCKHOUND ASSOCIATION will hold a general meeting nearly Wiley Well in the California desert. It will be open to all rockhounds interested in protecting their collecting rights on the public lands. Camp will be about 10 miles south of Freeway 10 on the Wiley Well road, which is 31 miles east of Desert Center, or 25 miles west of Blythe. Jean Hazelton, 4845 Sunfield, Long Beach, 90808, phone 213-421-6805, is general chairman.

APRIL 14 - 15, BISHOP BELLES & BEAU ANTIQUE BOTTLE WORKSHOP and Sale, Tri-County Fairgrounds, Bishop, Calif. Info.; R. Davis, P. O. Box 1475, Bishop, Calif. 93514.

APRIL 14 - 15, 19TH ANNUAL FAST CAMEL CRUISE, Desert Center, California area. Donation, door prizes, BBQ. Write: Paula Ford, Sareea Al Jamel 4WD Club, Box 526, Indio, CA. 92201.

APRIL 22, EASTER SUNRISE SERVICE in Red Rock Canyon State Park, 5:15 A. M. 25 miles of Mojave, Calif., on Hwy. 14. Room for all type vehicles and trailers.

APRIL 28 - 29, ARROWHEAD MINERALOGICAL SOCIETY'S 15th Annual Exhibit. Beautiful exhibits of gems, jewelry, artifacts, and displays of lapidary art. Free admission and parking. Write to Fred Wheeler, 17555 Filbert, Fontana, CA. 92335.

MAY 4, 5 & 6, 10TH ANNUAL GEM & MINERAL SHOW sponsored by the Clark County Gem Collectors, Inc., Stardust Auditorium, Las Vegas, Nevada. Field trips, Swap Table, etc. Many artists featured. Camping facilities on grounds of Show at Camperland, also at KOA and VIP Campgrounds nearby.

MAY 5 - 6, SAN DIEGO ANTIQUE BOTTLE CLUB'S 8th Annual Show, Bottles, Collectables, Scottish Rite Bldg., Interstate 8, Mission Valley, Calif. Contact Don Frace, P. O. Box 536, San Diego, Calif. 92112.



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