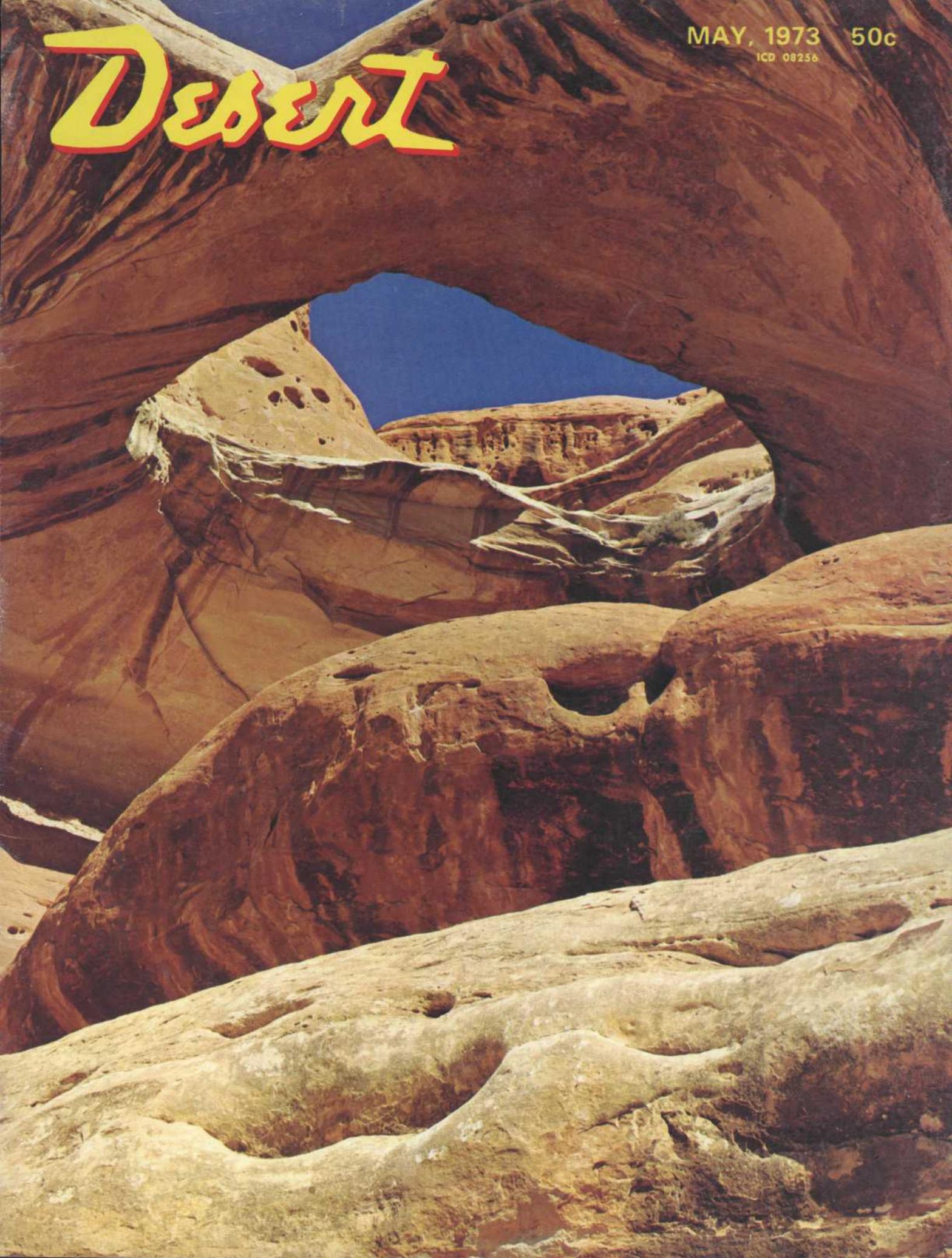


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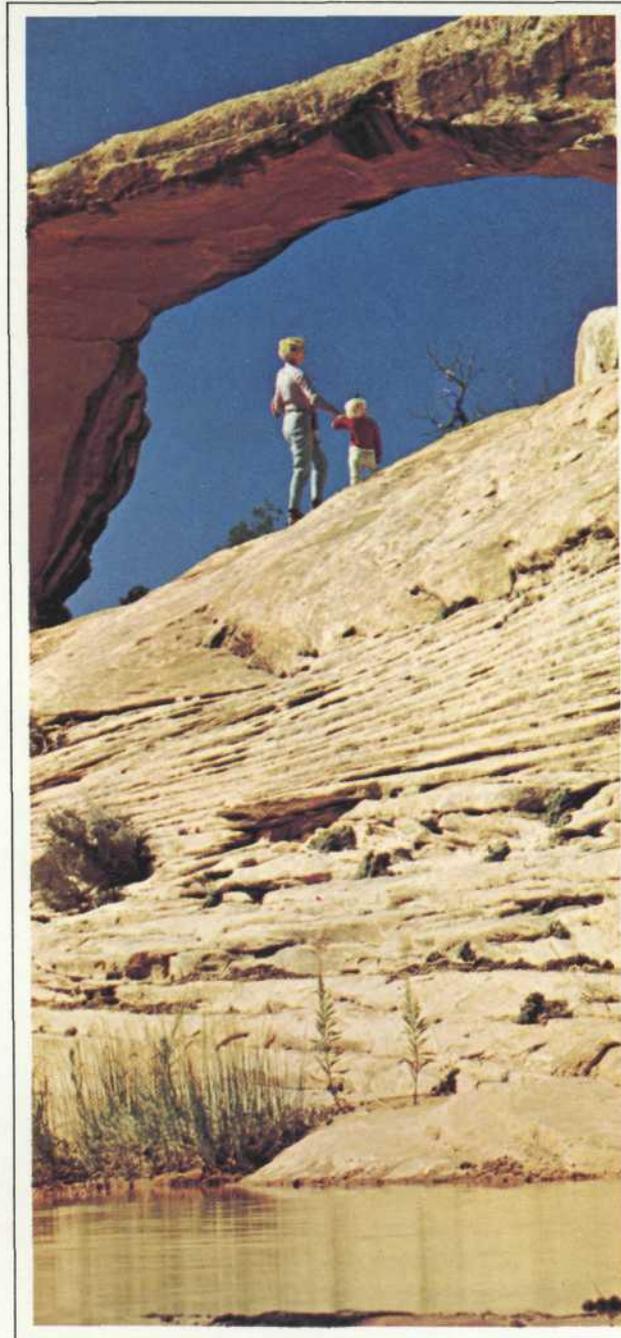


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Volume 36, Number 5

MAY, 1973

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Sandstone forms design below Paul Bunyon's Potty in Canyonlands National Park, Utah. Photo by David Muench, Santa Barbara, California.

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A Peek in the Publisher's Poke

WITH THE exceptionally wet winter, the desert has blossomed this year in a dazzling display of wildflowers. Reports have come in to the office of outstanding arrays from all areas and it is hoped that many of you will have been able to capture them on film. Death Valley is apparently experiencing the finest wildflower show in 50 years. Anza-Borrego, southwestern Arizona and the area south of Mexicali in Baja have all been mentioned frequently as great examples of Mother Nature at her finest.



Jim and Emery Hunt on a cookout.

DESERT Magazine was grieved to hear of the passing of Jim Hunt of Mexican Hat, Utah. Jim and his brother Emery, operated the San Juan Trading Post and Motel in conjunction with personally guided scenic tours. A veteran guide, Jim specialized in Monument Valley and The Valley of the Gods areas and undoubtedly named several landmarks. One of the most outstanding bears his own name, Hunt's Mesa, which overlooks Monument Valley and is a highlight of a trip into this magical corner of Utah.

Emery informed me that he will continue to operate the tours, taking informal groups to picturesque places in his beloved red rock country.

William Kuyatt

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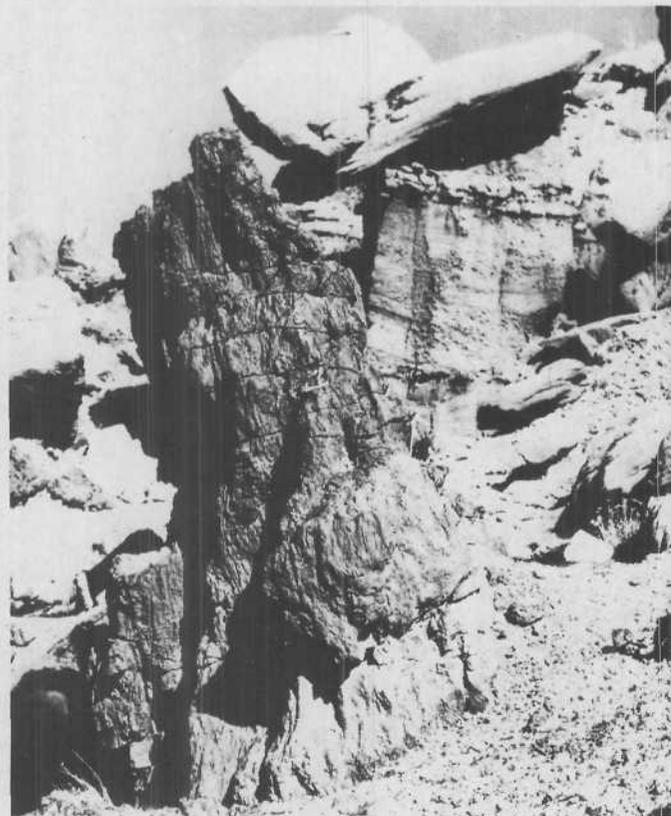
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Book Reviews

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DESERT ANIMALS OF THE SOUTHWEST

By
Richard Clayton



This little book fills a void that has existed for a long time. It includes a pencil sketch, concise description with an accompanying footprint, and a locale

map for much of the wildlife that roams the Southwest. Covering 38 creatures—from antelope to woodrat — it should prove to be a handy guide. Hasn't everyone at sometime seen a footprint in the sand and wondered just what animal had passed by? It could also be used as a game for the children around the campfire.

Paperback, illustrated, 78 pages, \$1.95.



LONDON BRIDGE IN PICTURES

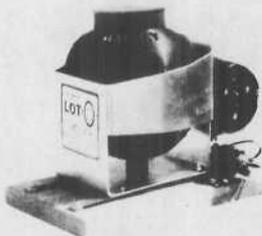
By
Carlos Elmer

London Bridge is well on its way to becoming one of the Southwest's unique tourist attractions. Completed in 1971, at a cost of millions, the bridge, located at Lake Havasu City, Arizona, is covered completely by this pictorial essay by Carlos Elmer. In addition to the bridge as it appears today, Carlos made three trips to London to attain rare photos of London Bridge as it appeared in days of old.

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THE ROCKS BEGIN TO SPEAK

By
LaVan Martineau



The author has spent 17 years devoted to deciphering the languages of the rocks. Fluent in Indian tongues, and versed in cryptanalytical methods, he has the right tools and background to tell early man's story as early man wrote it—on the rocks.

LaVan Martineau tells how his interest in rock writing led to years of study. This is his first book. In it he reads panel after panel by virtue of a unique combination of skills as a decoder and his background and knowledge of Indian languages and ways.

Petroglyphs were often thought to be hunting magic or drawings with meaning only to the original artists. At first LaVan thought they were all just maps or warnings. But now, after years of research, he has learned that many—especially the complex ones—are historical accounts of actual events.

Panel after panel is read—is detail. It seems early man was just as anxious to leave a record of his civilization as we are today. Many of the accounts selected for this volume are corroborated in historical versions written by the white man. The correlation, detail by detail, is almost eerie in its completeness.

This is a delightful book, and belongs in the library of anyone who roams the West and has stood before a wall of figures and symbols and wondered what they meant. LaVan Martineau opens the door to the meaning of rock writings, and if he and others continue in this vein, in the not-too-distant future, we who walk the byways of the back country might greet each other with, "Read any good rocks lately?"

Hardcover, well illustrated, glossary, bibliography, 210 pages, \$8.95.

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May, 1973

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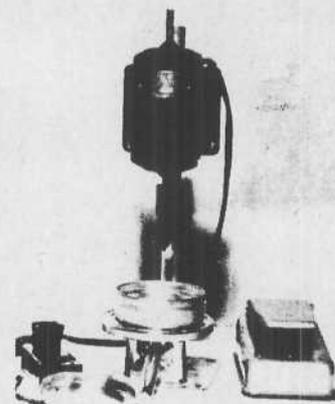
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A GUIDE TO TREASURE IN CALIFORNIA

By
THOMAS
PENFIELD



CALIFORNIA'S

AS THE SUN settles gently over the towering peaks of the Ink-O-Pah Mountains, the colors of the desert change quickly. The normally quiet tones take on a definite brilliance; the greens are brighter and the yellows are a lot more snappy. The reds which had earlier mingled with the browns, are now fighting for independence and glowing like the sunset of the distant horizon.

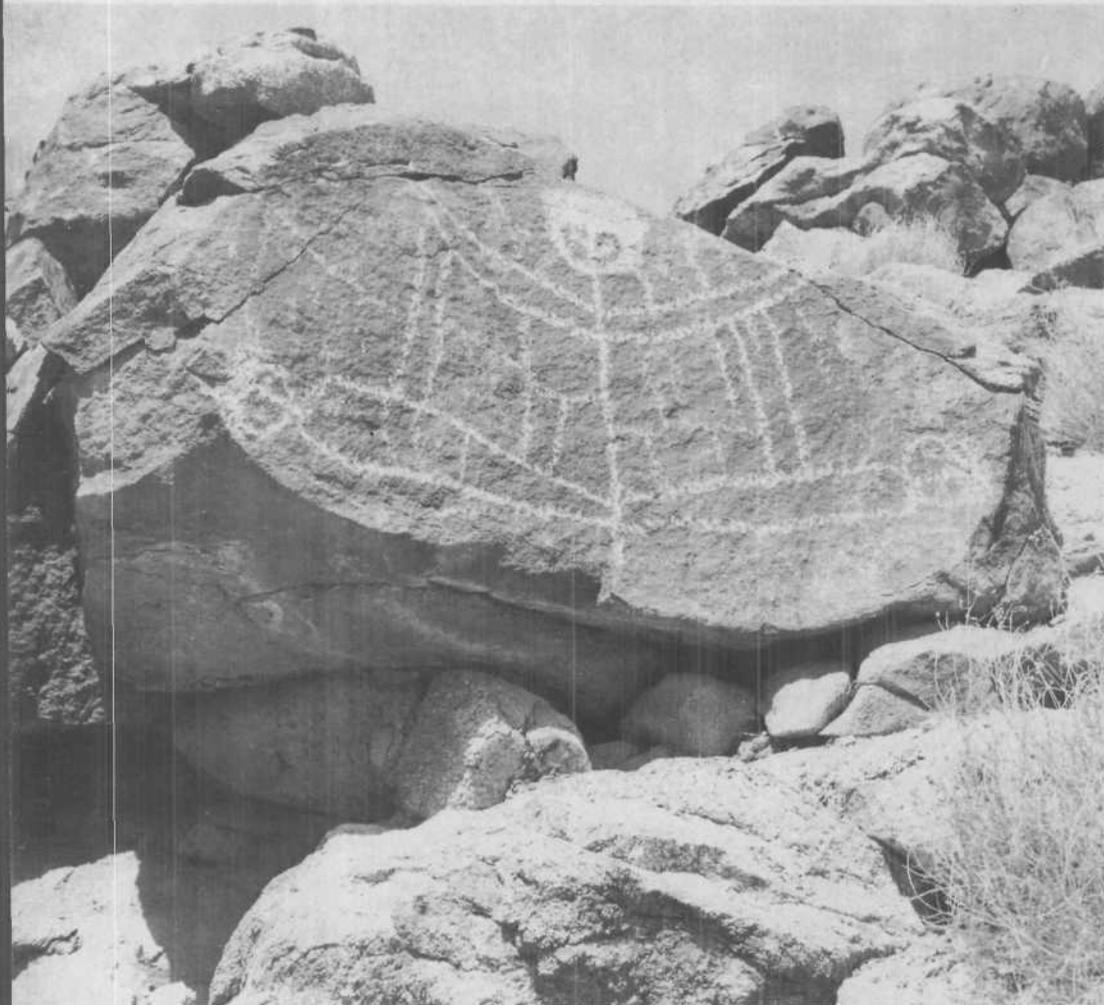
This is the Yuha Desert; a tiny part of the vast California Desert that crowds against the Mexican Border, west of El

Centro. At first glance, it seems of little significance. The barren Ink-O-Pah Mountains drop like a stage curtain, designed to detract little from the players. The sun-varnished boulders, dropped here eons ago, glisten brightly in the afternoon sun, but become purplish as a tired sun gives up for the day and slowly drops from view.

These mountains were not always this way. The valleys had once been deeper and the peaks had been higher; but thousands and thousands of years of wind and

rain wore away the rocks and filled the valleys. It's ironical that this land could be starved by a lack of water and at the same time, shaped by too much water. During these many, many, years, the water has come in floods, tearing away at the land and slowly washing away the mountains, carrying the peaks to the valleys below.

At one time, the Yuha Desert was a part of the sea, and water animals lived here in profusion. As these animals, mostly shell-type, died, their remains set-



Above: Petroglyphs found in Pinto Wash which enters Davies Valley near the Mexican Border. There are several petroglyph areas throughout the Yuha Desert and numerous remains of fire rings and huge Indian grinding rocks. Right: Today, the fossil beds are open to anyone. They are easily accessible. The more popular fossil hunting areas are north of Ocotillo, off Fossil Bed Road and south of Ocotillo below the scenic overlook.

YUHA DESERT

by Al Pearce

tled to the bottom and their bodies were packed and hardened to become a part of what we now call sedimentary rock.

Others survived as fossils. Their remains can still be found in several areas. They abound predominantly at the end of Fossil Bed Road, north out of Ocotillo on Highway 80 and, also, below the spectacular Vista de Anza Scenic Outlook off State Highway 98, south of Ocotillo.

These areas are still open to the public; anyone with a shovel, and possibly a pros-

pector's pick, can easily find fossils as old as 500,000 years. That's when the entire Southern California Desert was apparently under water. Since then, several things have happened.

Geologists have several theories as to why this area as far north as Indio is no longer a part of the sea. Some claim that the rising Colorado River delta blocked the Gulf of California and that soon the "inland" water dried up.

They base their claims on the fact that existing evidence indicates that the flood

waters from the Colorado River steadily deposited silt at the delta until it formed sort of a dam, blocking the entrance of sea water. You have to remember that dirt from the big depression called the Grand Canyon had to go somewhere.

Buwalda and Stanton, who briefly studied the area in the late 1920s, produced evidence indicating that the so-called Imperial Depression dropped below Sea Level after the delta had blocked off the sea.

Continued



Above: This is typical of the mountains to the west of the Yuha Desert. Boulderstrewn, they are seemingly worthless, but not to the three bighorn sheep in the center of the picture. They love this terrain and have learned to survive here.

May, 1973

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The entire Imperial and Coachella Valley is what geologists call a huge geosyncline. And, as such, it will rise and fall with changing earth conditions.

Recent searches for geothermal activity have led to the drilling of wells at least 9,000 feet deep. This is still not deep enough to reach beyond the deposits of silt that have been washed into this geosyncline over the past thousands and thousands of years.

It's unfortunate that geologists have not yet considered this area important enough for more detailed studies. There is no telling what else could be learned.

Paleontologists, too, have been unable to devote the time they would like in this area. Money for purely academical pursuits is hard to come by. Therefore, the abundance of fossils, left here by the disappearing sea, are at the mercy of anyone who wishes to grab them. As are the remains of the camels, the horse and other now extinct animals that once roamed the Yuha Desert.

Since the sea creatures died to become either rock layers on the bottom of the sea, or fossils, the Yuha Desert area has undergone constant and sometimes violent changes.

Not too far in the past of geological time, the land was lush and green; semi-tropical in atmosphere. The mountains changed their shape while the depressions filled and apparently sank. The faults that pass through here have long been active, constantly changing the face of the land as one side shifts from the other. There is evidence of tremendous earthquakes, much more violent than those of more recent history.

Then the land began to change to desert. Water dried up and numerous species of plants and animals faded into oblivion, to be gradually replaced by other plants and animals.

It might be interesting to note that there is some evidence indicating that this land had also been desert once before in its geological history.

What a struggle those early plants must have had as they fought tenaciously for a foothold. And, what a variety of means they have adopted to sustain life.

The common creosote bush, the most plentiful of all desert plants, spreads its roots and drops a poison during dry years which kills its own offspring.

The mesquite, whose bean was once so

important to the Indians, learned to survive by sending its roots deep into the ground to tap subsurface water.

And, what about the beautiful smoke tree, so common to all Southern California washes. Its seed is covered with a protective coating that can only be broken by flood waters that carries it downstream and bounces it against rocks.

Life for the animals must have been even more difficult. But Nature, while sometimes violent and seemingly heartless, is, indeed, kind. She gave these animals something special.

The most fascinating, perhaps, is the small kangaroo rat, which never drinks water. It has developed the phenomenal and unique ability of manufacturing its own water. Its body can convert the driest of seeds to the moisture it needs.

Modern scientists, who have made studies of this small animal, believe that if man could learn more about its ability to manufacture its own water, it might be beneficial to modern medicine.

Then, of course, there is the majestic bighorn sheep. Frequently, the seeking eye can spot one of these animals in the mountains to the west of the Yuha Desert.

When man came along is uncertain. Until recently, it was believed that he appeared in Southern California about 8,000 to 9,000 years ago. But, in 1971, a skeleton, called the Yuha Man, was uncovered by Martin Childers of El Centro. It is believed to be about 21,000 years old. If this age proves to be correct, it will be the oldest remains of man ever found on the North American Continent.

The Indian occupied this area when the conquering white man arrived. Since then, we must shamefully admit, we have learned darn little about his habits and the way he lived. We know that he migrated from the desert floor into the nearby mountains and back again, traveling with the seasons. He apparently traveled in small bands.

There is still evidence of his having been scattered throughout the Yuha Desert. Huge grinding stones can be found in several of the canyons that sneak into the Inko-Pah Mountains from Davis Valley. It was around these grinding stones that women gathered to grind mesquite and other type beans into a flour-like substance and to discuss the affairs of the day, much like modern women gather for coffee.

While the women ground the beans,

the men often played games nearby, or traveled across the desert hunting small game, or an occasional bighorn sheep when they were lucky.

It is commonly believed that the Indians were a happy people, and their life on the desert was not nearly as difficult as some early writers would have us think. In the first place, growing evidence indicates that the desert had much more moisture 100 years ago. There was tall grass and a variety of other plants.

Modern man has learned very little about the Yuha Desert. Someone has taken a little bit of time to identify some of the areas of interests—such as the painted desert east of Ocotillo—but little more.

Some scientists believe that this small corner of the vast California Desert may contain many secrets that might provide answers to the questions that man must ask himself about his past.

The story of Indian development still goes without answers. Why did they come here? What did they find? What about the strange intaglios—huge marks on the ground—found near the DeAnza Scenic Overlook?

The land—and the many answers it may provide—is being threatened; 500,000 years of violent climatic changes, of disrupting earth movements, of rain and wind erosions, has not destroyed the land nearly so much as 20 years of white man.

This is one of the areas that the Bureau of Land Management, which administers publicly-owned land, would like to bring under control. The Bureau argues—and justifiably so—that tire tracks across the face of the intaglios, or obscene four-letter words scratched over petroglyphs, will

not contribute to the future understanding of this part of the desert. Bureau officials would like to keep the area intact; to save it for future scientific study and for the enjoyment of future generations.

And this is what the current argument is all about—some people are opposed to the Bureau's efforts to preserve—they would rather destroy.

This tiny bit of desert contains all the things that should be preserved: Geological oddities; fossils; extinct animal and plant life and the beginning of new life; of Indians and, finally, of beauty. □

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THE RAMSHACKLE houses that line the main street resemble a phalanx of ghostly soldiers, searching for a hero that will rescue them from inevitable decay. Tarpaper roofs rip and crackle in the wind. To the few residents who still live here, the sound is a forlorn and haphazard epitaph; an epitaph for a town.

Madrid, New Mexico, nestled in the foothills of the rugged San Pedro Mountains just south of Santa Fe, is for sale. The asking price is \$500,000. Included in the sale is a restaurant, opera house, museum, gas station and 150 or so run-down mining shacks, about half of which are restorable. The whole she-bang sits on 361 acres of prime mountain land. Not a bad deal for someone who wants to own his own town.

Although Madrid is recognized as a ghost town, the 60 or so people who still live there don't call it that.

"It's a great place to live," one of the residents told me. "This is where I want to raise my children."

Once a major mining town, Madrid's history goes back a long way. In 1835, a mining engineer discovered anthracite coal in the hills directly behind the town. Since there was no way to transport the coal to market, however, the mining operation was small, supplying only enough fuel for a few surrounding towns.

In 1869, the mines were taken over by the New Mexico Mining Company who used the coal exclusively for a stamp mill at Old Placers, New Mexico. Still, there was no transport available.

Then, in 1882, a railroad spur was built to nearby Cerrillos, linking the mines to Albuquerque and there-by to the world's markets. Six years later, the mining operations were purchased by the Colorado



Fuel and Iron Company, and both bituminous and anthracite coal poured from Madrid's 40 mines. It was the first record of coal mining west of the Mississippi.

As the demand for Madrid coal grew, so did the town. Four hundred miners supplied the black stuff to everything from salmon fleets off the Pacific coast to the Royal Canadian Mounted Police.

In 1906, George Kaseman, of the Hahn Coal Company, leased the holdings and Madrid became a company town. The

miners and their families were dependent upon Kaseman for everything from staples to law and order. Although there were several violent deaths, a few robberies, and now and then a rape or two, most of the time the town was quiet, well ordered and prosperous.

The Madrid Employees Club, a company-run organization to which everyone belonged, initiated parties, organized a local band, and even started a baseball team. They also sponsored a spectacular

Right: Like a ghostly phalanx of soldiers, these old houses line the main street of town. Opposite page: This boarding house once held 50 miners.



Christmas display which over the years drew an estimated 200,000 visitors to Madrid from all over the world. This beautifully decorated Nativity scene continued to attract Holiday travelers until 1941, when wartime restrictions prohibited its many colored lights. By the time the war had ended, there were too few people left in Madrid to continue the tradition.

The decline of Madrid probably had its beginning in the winter of 1932. On the morning of December 7, a date that in later years would become known as "The Day of Infamy," a huge explosion rocked the town, breaking windows and throwing several people to the floor of their homes. Seconds later a sheet of flame and smoke erupted from the entrance of one of the larger mine shafts.

During the next few hours, while Madrid and the surrounding communities reeled in shock, 53 smoke-blackened miners emerged from the rubble of the shaft. Later that same day, 14 bodies were recovered. It was New Mexico's worst mining disaster in history, and the state mourned.

Even though the mines were closed

Continued on Page 41

by
**Buddy
Mays**

Right: The long-silent mine buildings and slag pile wear a mantle of snow.





The Wonderful World of the Wasatch Plateau

“A LAND OF don't hurry!” aptly describes the richly-forested and lake-blessed high country that is the wonderful world of the Wasatch Plateau, a part of the area Utahans named Castle Country. It contains an abundance of high cliffs, buttes, deep gorges and spectacular rock formations, is still sparsely settled, little known outside Utah, a last frontier of quiet land, free of the frenzy of civilization.

Castle Country is a huge land basin bordered by dramatic soaring escarpments that present a grey clay face to travelers along the asphalt ribbon of Utah State Highway 10 in central Utah. The Wasatch Plateau forms the western boundary of the Castle Country basin in Emery County. The San Rafael Desert sprawls eastward from the fluted cliffs of the plateau, and along the fringes of the high cliffs

are productive farmlands crossed by the meandering rivers born of winter snows on the Wasatch. (Wasatch, from the Ute word Wahsatch, refers to “a low pass over a high mountain range.”)

This wonderful world of the Wasatch is the Manti Division of Utah's Manti-LaSal National Forest, and consists of a rugged north-south strip that rambled 70 miles over forested valleys of aspen, ponderosa pine, spruce and fir, in a setting of alpine meadows verdant with grass and wildflowers.

Like all National Forests, the Manti has been managed by the Forest Service to serve the best interests of the public, and has a well developed recreational network of campgrounds and productive fishing waters. Maintenance of a stable habitat for wildlife with an adequate food supply is a Forest Service responsibility

by Enid C. Howard

Right: One of the old pioneer cabins built of hand-cut and shaped logs and set into a dugout bank along the road to Joes Valley Reservoir. Opposite page: Under a light mantle of snow, the Wasatch Plateau cliffs tower above farm fields along the road to Huntington Canyon.



and has been wisely demonstrated on the Manti Division.

A chain of lakes and reservoirs along the crown of the plateau will delight the devotee of rod and reel. The fisherman can choose his favorite water within an hour of camp or fish the reservoirs near the campgrounds. Fast-water fishing along the Muddy, Ferron Creek, Cottonwood and Huntington Creeks are but four of the tumbling streams within forest boundaries where the fly fisherman can drop his favorite fly with excellent results.

Hugging the very top of the plateau, just below the clouds and connecting the many fishing and camping locations, is one of the most scenic, high mountain roads in Utah. "Skyline Drive" climbs and dips along the backbone of the range for 60 miles of breathtaking views east to the mountains of Colorado, and westward all the way to Nevada on a clear day. This road is still undeveloped and not for passenger cars or trailers. Jeeps or rugged pickups can negotiate the steep, rutted roads, except in bad weather.

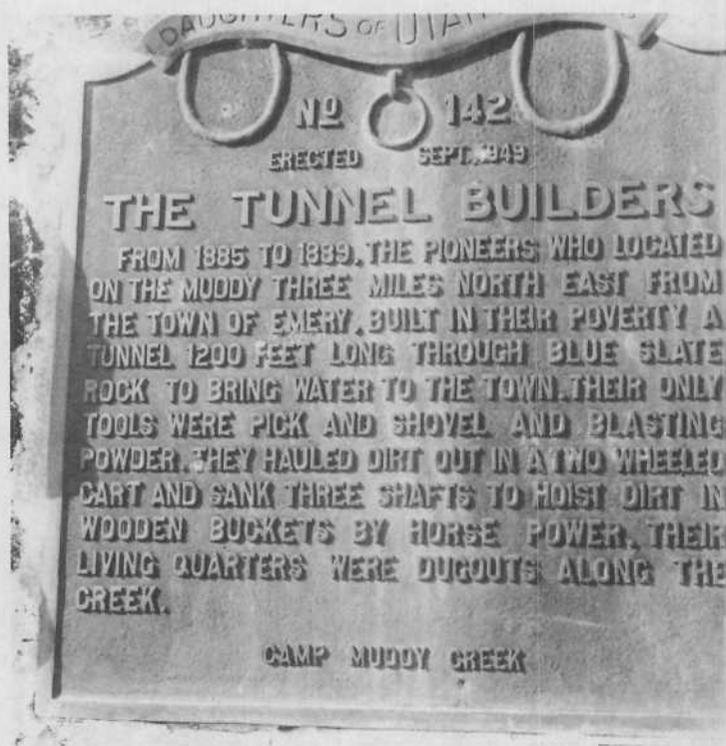
This clean and green world is a place for family fun and vacations. Here parents can introduce the youngest generation to the magic of unspoiled forests, the quiet world of the mule deer, elk, cottontail rabbits, the western mourning dove and even wild turkeys, if one is fortunate enough to see them. A wealth of flowers that bloom only in high altitudes, such

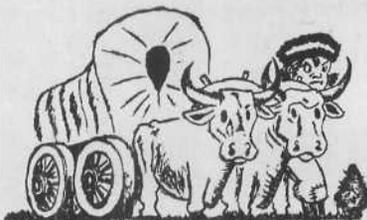
as the delicately lovely columbine, and clumps of blue-bells that dance on long stems when the wind whispers by, are a whole new world for lowlander youngsters.

An interesting drive via passenger car begins at the south end of Joes Valley Reservoir and follows the road along North Canyon Creek. Follow the signs that direct to North Horn Mountain. Past Baseball Spring keep right and end up at the TV Tower station on the east rim

of the Plateau. Below is spread the panorama of Castle Country, a magnificent space view across the valley to Cedar Mountain, the San Rafael River canyons and the San Rafael Reef that thrusts jagged fingers of stone out of the desert in the far distance. Below the grey cliffs are checkerboard farmlands nurtured by flowing water from the Wasatch. If you are driving a rugged vehicle you might like to try the road to "The Cap" which takes off near Baseball Spring—it will

The Daughters of Utah Pioneers have erected this marker to honor the rugged pioneer families who labored so diligently to establish homes in a harsh land. The marker is located a mile north of Emery, Utah, on State Highway 10, Muddy Creek.





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For a change from exploring, fishing, camping, hiking and boating on the Wasatch Plateau, the Castle Country Basin is rich in historical lore with many areas for the visitor to reach by passenger car. The oldest names in Emery County are Spanish, not Indian. Francisco Vasquez de Coronado and his soldiers, in 1540, traveled north from Santa Fe into southeastern Utah looking for gold and plunder, but turned back when they arrived at the sea of sand that is the San Rafael Desert.

Two hundred and thirty-six years later on July 29, 1776, Fray Silvestre Velez de Escalante and Fray Francisco Atanasio Dominguez followed the same trail out of Santa Fe with the hope of extending the Franciscan Missions west to California. Their route followed the same general trail as Coronado's which was then rather heavily traveled by frontiersmen, trappers and fur traders as far as the Colorado border. The trail came up from Santa Fe through the San Juan country, across the Colorado River at Moab, Utah, over the Green River, near where Green River, Utah is located, across the San Rafael Desert and the San Rafael River into Castle Country, then through Salina Canyon (now U. S. 70) to southwestern Utah and on to California. Utah State Highway 10 is a part of the "Old Spanish Trail" from near Castle Dale to Fremont Junction.

Ancient Indians lived in Castle Country and left petroglyphs, cliff dwellings, bone and stone artifacts to attest to early occupation by an advanced culture. Artifacts and geological specimens are on display at the Emery County Museum of Natural History in Castle Dale. An interesting pioneer section of the museum features hand-forged tools, clothing, cooking utensils and dishes, along with beautifully handcrafted furniture from pioneer homes which has been restored and refinished by local craftsmen.

Inquire locally in Castle Dale about the road leading to Buckhorn Draw where you will find pictographs on the canyon wall at one location beside the road. Regrettably, they have suffered vandalism but are still interesting and unusual. This area in the canyon is good for rock-collecting and hiking. The road will also lead to the San Rafael River and the picnic grounds near Windowblind Peak, said to

be the largest free-standing monolith in Utah. Always carry water and enough gas when you go exploring throughout the valley as the nearest facilities are along Highway 10.

Obtain maps locally of the area and visit Hondo Arch and Temple Mountain, a land of variegated brilliant colors and towering stone formations. *Please, do not for any reason enter any of the old mine shafts in the area. Two young boys have lost their lives here.*

Follow the signs out of Cleveland to the Cleveland-Lloyd Dinosaur Quarry and step back into time in one of the richest graveyards of 130 million-year-old animal fossils ever discovered. Thousands of bones have been excavated, cleaned and assembled and are major displays at museums throughout the world. Large room-sized boulders scattered about the site create an unusual setting for the Visitor Center, interpretive displays, and picnic facilities

To visitors passing along Highway 10, the towns of Emery, Moore, Castle Dale, Huntington and Cleveland seem only sleepy farming communities—no bright lights, supermarkets, or the noise and clatter of big cities. But this rolling land has known the pounding hooves of horses ridden by such outlaws as the notorious Butch Cassidy and his cronies, Elza Lay, Harvey Logan, Harry Longabaugh, Flatnose George Curry, Silver Tip, and Blue John. All were members of Cassidy's Robbers Roost outlaws.

Not members of Cassidy's bunch, but well known throughout Emery County, were outlaws Matt Warner and Joe Walker. Walker at times aided Butch in his mischief, while Matt was somewhat of a loner, but a mean hombre nevertheless. In his later years Matt reformed and lived out his life among the more sedate citizens of Emery County.

Butch Cassidy and Elza Lay spent most of the winter in 1896-97 at a ranch on Huntington Creek while they planned the robbery of the Castle Gate Coal Mine and worked out their escape route east of Cleveland, south through Buckhorn Draw to the San Rafael River, then south along the river to Robbers Roost country on the Green River where they were in safe territory.

Three main access roads to the Wasatch Plateau intersect Utah State 10, which

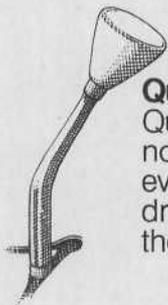
*Continued on Page 40
Desert Magazine*

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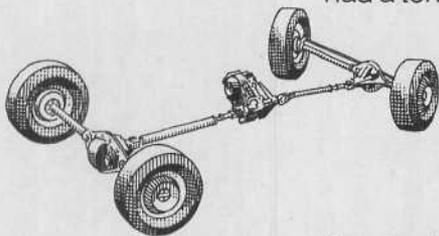
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Photos by
George McClellan Bradt

by
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GREAT HORNED OWLS reside in many parts of the world and their tribal history is a long and successful one. Big and powerful, these birds may measure almost two feet in body length and have a wingspread of around five. They are obviously quite capable of flying to favorable climes wherein to dwell, and what with their solemn round eyes and dignified professional manner, look wise enough to do so. Yet they are to be found as permanent residents of one of the most difficult places to live: the northern desertland of the Great Basin.

This is truly a grim area, where temperatures may soar to 130 degrees F. in July and fall to 22 degrees below zero in winter. It is high desert with all the problems attendant upon 5,000 feet elevations. It is a land of everlasting wind, strong seasonable blows superimposed in the daily mountain valley winds. It is a place of scant rainfall, of sparse vegetation. All in all, it hardly seems a spot to select for comfortable living, and no place to undertake the hazards of family raising.



THE GREAT HORNED Owl



The problem of how great horned owls can thrive under such adverse living conditions intrigued Zoologist Dwight Smith. Picking a good tough representative section of central western Utah, he marked himself off a study area of about 25 square miles and took a census of great horned owls. This involved a lot of climbing, for one of the first facts he had to learn was that these birds like penthouse locations, particularly favoring large sandstone or limestone cliff faces or rock outcroppings and abandoned quarries. Some 14 nests were found in two breeding seasons.

Observations showed that along about the middle of December each gentleman owl sets up his territory for the coming social whirl, aerial dogfights establishing the boundary lines. Next on the program is to look for a suitable residence, so that by the time the ladies begin to get interested, he has several suitable places to offer. Now it is a matter of record that great horned owls want comfortable nests, but they are, to a bird, dead set against building. However, there are plenty of empty apartments available, namely last years abodes of some red-tailed hawk, ferruginous hawk, or raven, who haven't begun to think of housekeeping yet.

Since the great horned owls are well at it by January, they are already ensconced in the choice nests by the time the rightful householders arrive. Should Mrs. Owl be suddenly struck with the attractiveness



of a brand new one just built by a pair of early redtails, her lord and master turns nest hijacker. He loses not a moment in tossing the redtails out of their home, and the owls move in.

With less time required for nest building, there is, of course, more time for courtship. One ritual, according to an eyewitness report, seems to involve a kind of trapeze bowing executed as follows: the pair perches side by side on a branch, regarding each other solemnly and after a bit of beak touching and chortle-hooting, the gentleman goes into the trapeze stunt. Gripping the branch with his talons, he tips head downward further and further until his beak is lower than his feet level. Spreading and drooping his wings, he fluffs his feathers and accompanies his bow with a long drawn out hoooooo ren-

dered basso profundo. Suddenly he pops upright again and sits staring solemnly. The lady then makes her trapeze curtsy in the same manner, her hoooooo a girlish baritone. Then up she pops again to sit deadpan.

Food is now in order, and the gentleman wings away for provender, returning with a fresh rabbit. Having dined well, and after a number of raucous hooting duets have been rendered, the pair is ready to take up housekeeping. To be sure it is frigid cold, but they're off on the family raising stint.

Mrs. Owl starts her incubation the minute the first round egg is laid, for it must be kept warm. There is a lag of a few days before the second egg is laid and again before number three, which is about par for a clutch. While Mrs. Owl is sit-

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Photo courtesy of El Poché Cafe, San Gabriel, California

ting, her lord roosting nearby keeps a fierce eye out for interlopers, driving any other big owls away immediately. Interesting enough, Smith found that once established in the nest of their choice, Utah great horned owls were quite tolerant of smaller predators, often nesting close to families of barn owls. A busy red-tailed hawk's nest was located on a ledge only 25 yards away from a cave nest of a great horned owl. A ferruginous hawk nest was in a juniper only about 100 yards below an owl's cliff nest, while another owl shared quarry nesting sites with golden eagles and prairie falcons.

Along about sunset, the owls sail forth into the evening. Their hunting territory is about 261 acres ranging out into the desert hills and valleys and onto the flatter desert itself. They hunt either harrier fashion, flying slowly over the ground, diving on prey spotted, or perch on rocky elevations watching for prey and swooping onto it in direct flight. Both ways require mighty good eyesight in the growing gloom of evening, and great horned owls have it.

Owl eyes are even bigger than they look, for they are actually as large as those

of a human being. Naturally enough, there can't be enough room in a skull of the size of theirs for orbs such as these. Further complicating matters in such cramped quarters, is the fact that owl eyes are not ball-shaped, but tubular, which need even more room. The space problem here was solved by putting much of the eyeballs out in front of the skull, enclosing them in a protective casing of thick bony plates. Wedged firmly into their bony jackets, they are quite immovable, nor are there eye muscles provided for the job. So the owls use their neck muscles instead, turning their whole head, and since their skull sits on their neck in a ball and socket joint, they can make a full 180 degree turn, looking directly back over their own shoulders.

Now the modus operandi of the vertebrate eye is that the open pupil up front lets light in, the lens located along the line focuses on the object, and the image is picked up by photosensitive cells in the retina at the back of the eyeball. The horned owl's eyes work in this standard fashion, but he's off to an especially good start for seeing well in the dimmest of light because (thanks to his oversize eye-



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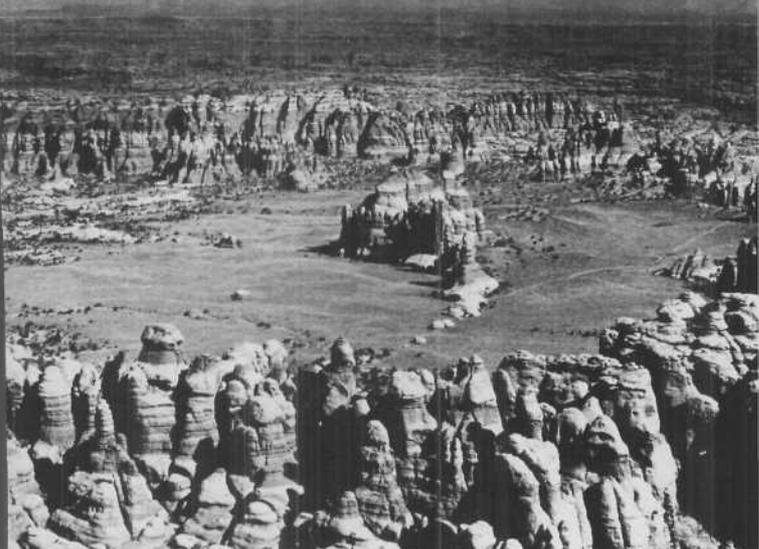
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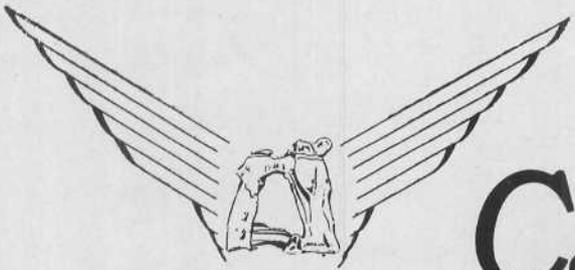
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balls) his pupils can open to a very wide circle, thus letting in much more light, and because the cells of his retina are so sensitive they keep on operating as long as there is any light to work with. The tubular eye is a big advantage for its added length increases the distance between the focusing lens and the retina, broadening the image receiving area and improving discrimination. Almost all of the retina is in direct line so that distant objects are sharply focused on its sensitive cells. These things add up to equipment that works up to 100 times better than man's in faint light.

Set more to the front of the head than those of many birds, owl eyes work together in binocular vision, beamed to a field of about 60-70 degrees straight ahead. Thus, out for groceries, and with both eyes trained on a moving object, the owl can judge distances accurately and, swooping down with great precision, land right on target.

Zoologist Smith found in his Utah study that mammals made up 90 per cent of the foods of the owls, consisting of black-tailed jackrabbits, desert cottontails, kangaroo rats, deer mice, meadow mice, ground squirrels, woodrats. Jays, mourning doves, grasshoppers, beetles, scorpions were also taken. What with a nestful of voracious youngsters clacking their bills for food, trip after trip has to be made carrying cargo before they are at last stuffed full for the night. After that, additional food is still brought and stowed nearby.

Scientists are much interested in this larder stocking routine, pointing out that the three chicks in the brood are of different sizes because of the original delay in the egg laying sequence, and the subsequent staggered hatching. Thus the first out is considerably more advanced physically than the last to appear. Downy and young as they are, horned owlets are in reality full of fight, given to bill snapping, hissing and up-taloned defiance. As long as there is an abundant food supply in the nest, all is peace, But if owlet stomachs are empty too long, fratricide becomes the order of the day, the older chicks dining on the last out.

Ornithologist Collingwood Ingram, in his work with owls, noted that the parents always placed the surplus a few inches away, and he concluded that it was mainly meant for the older and potentially fra-



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tricial members of the brood, since only they would be physically capable of reaching it. It is only this extra food that keeps the smaller chicks safe each day. In hard times, cold hearted as it seems, the removal of the weaker members is not only desirable, but has a definite survival value to the species.

With so much hunting to be done to feed the young, and themselves as well, the old owls have to work far into the night. Yet, no owl can see in utter darkness, so how do they find their prey?

Anatomists Roger Payne and William Drury checked into the hearing department to find the answer. As was already well known, birds do not have external ears of a stick-up kind found in mammals that can be waggled around for sound reception. What looks like ears in the horned owl are tufts of feathers. The entrance to the bird ear proper is only a hole on the surface protected and hidden by feathers that mix into the general herbage on the face. But, in owls, there are also well developed skin folds particularly in front of each ear opening, and these can be moved about to change the path of sound coming in. Thus the reception

in the two ears is different.

In addition, the owl's head is so wide and the ears so far apart, that there is a difference in the time of arrival of sound to each side. And, to make things more interesting, the ears down inside differ in shape and structure to the end that the spot of greatest sensitivity is not the same in the two ears. It may be located above the horizontal plane in one, and below in the other.

All this sounds like a botched-up job, but in reality it is a design for hearing that works especially well for pitch-dark hunting. The asymmetrical shape of the system is actually a pinpoint direction finder by means of which the owl, locating the exact spot from whence the moving sound is coming, zeros right in on it. They can hear sounds of less intensity than other birds because they have a bigger eardrum, and a harder hitting hammer to transmit sound waves.

Pitch-wise, the great horned owl's hearing range is between 60 to 7000 vibrations per second, with the sharpest hearing in the ranges higher than his own vocal repertoire. But this is the range of the high pitched rodent squeaks and many

of the rustling sounds they make in moving about through ground litter. The owl's hearing, in short, is specialized for prey capture. His silent flight is a further help for hunting in the dark, for the air flowing over his soft plumage makes no sound to interfere with his own hearing, nor to give his prey warning of his presence.

With all this fine hunting equipment, and talons and hooked beaks for the kill, of course great horned owls can flourish in the desolate lands of the Great Basin, their deep-toned hoots of derisive laughter seemingly to mock the might of the desert, as they wing their way through the night. □

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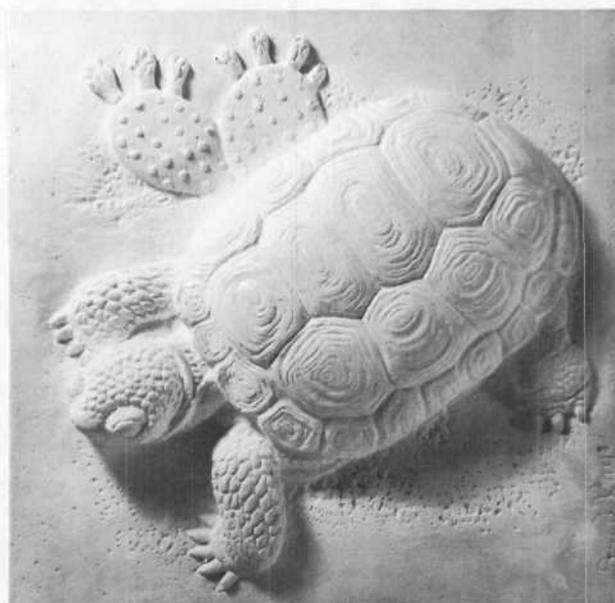
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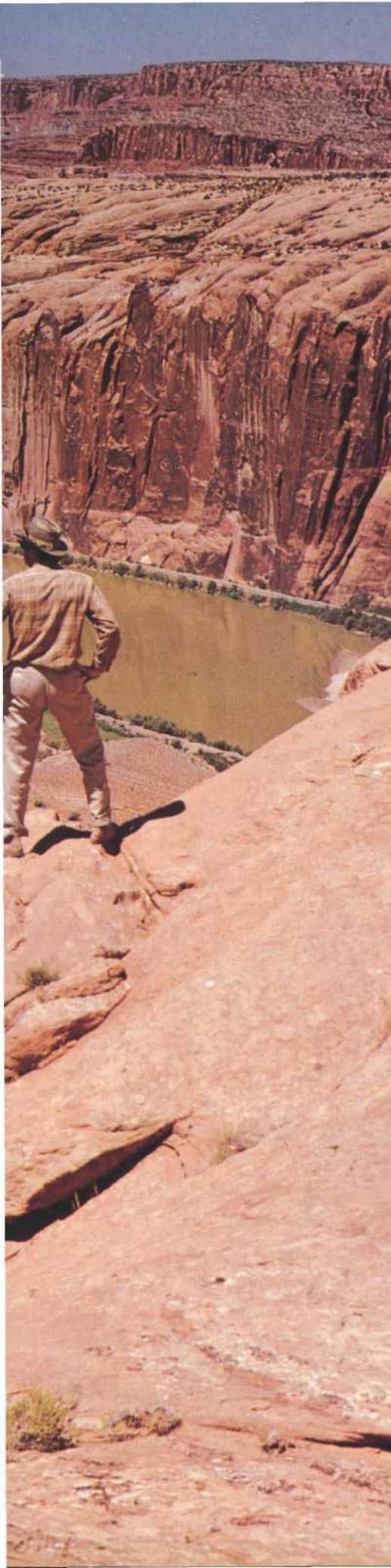
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Paradise for Four- Wheelers

by F. A. Barnes

THE MOAB RIM TRAIL is sometimes called "The Cliffhanger"—for good reason.

In a land that is famous for its rugged backcountry vehicle trails, a few such trails have become outstandingly famous—or infamous—depending upon your point of view. If you enjoy the challenge of carefully easing a smoothly operating piece of off-road machinery up a stretch of rocky trail that demands all the abilities your vehicle has, and all the driving skills you have, then the trails of southeastern Utah's canyonlands are for you.

And if you like to be going unusual places and seeing unusual things while accepting that challenge, then the Moab Rim Trail can offer you the ultimate in off-road enjoyment.

Visitors to canyonlands country often hear about, and many often experience, the thrills and chills of going over well-known Elephant Hill in the Needles district of Canyonlands National Park, or of descending the appalling switchbacks of the Shafer Trail in the Island-In-The-Sky district of this same park. These are, indeed, spectacular and demanding trails, but canyonlands residents just smile politely when visitors enthuse over them. Those who live in southeastern Utah and see much of its wild backcountry know that some of the most difficult trails get little use and virtually no publicity, and are not within National Parks.

The Moab Rim Trail, or Cliffhanger, May, 1973

is one of these.

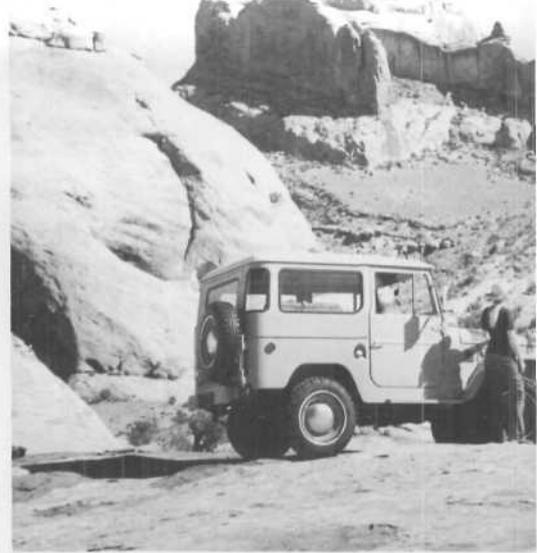
Once a year, for the past several years, the Moab Rim Trail sees some use. The rest of the year, barely a handful of vehicles venture to attempt this hair-raising route, even though it travels into some of the most spectacular scenery to be found anywhere.

Each spring, on Easter weekend, the town of Moab, Utah, sponsors a jeep safari. One of the several routes offered participants in this popular event is the Moab Rim Trail. Those who choose this trail are warned, however, that it is not for the average vehicle or driver. The rigors of the trail demand an expert driver, a vehicle with short wheelbase, minimum overhang at each end and in good condition—and nerve.

For the last two safaris, Moab Jeep Safari officials have worked on the Moab Rim Trail trying, literally, to round off its rough corners, but largely to little avail. The trail still "separates the men from the boys." And often also separates faint-hearted women passengers from their vehicles.

Truly, the Moab Rim Trail—The Cliffhanger—makes Elephant Hill look like a "bunny hill."

How can this claim be tested, this challenge accepted? Well, one way is to attend the next annual Moab Jeep Safari. This is probably the safest and easiest way. Traveling in a group, help will be handy if you have trouble, and you won't get lost. The trail is almost all over rock



Left: A short hike from the Moab Rim Trail leads to a slickrock rim overlooking the Colorado River and the "portal" through which it leaves Moab Valley. The first and most rugged stretch of the trail ascends the broken slope in the center of this scene. Above: The Moab Rim Trail enters the fantastic "Behind-The-Rocks" country that lies to the south and west of Moab. Along the way, such monstrous stone shapes as "The Throne" can be seen. The trail crosses rock and sand and is difficult to follow, even though marked.

or sand, and is thus not easy to follow. Much of the route is marked by little plastic-ribbon flags tied to twigs or rocks. But if you are traveling the trail alone and miss one of these, you can spend a lot of time wandering around without getting to your destination, and without seeing some of the highlights of the trip.

If you are a competent but not really gung-ho driver, is it worth the extra effort required to travel the Moab Rim Trail? Absolutely! The trail is difficult but not long—barely twelve miles total to its end and back—but the scenery along the way is quite different and breathtakingly beautiful.

Plan on spending a full day on the trip. There is much to see and photograph along the way, and several places where you will want to take short side trips on foot. Take along plenty of food, and water too. The land of Behind-The-Rocks you will be entering is dry, very dry, and also hot in the summer months.

Start from Moab. Near the south end of town, Cane Creek Boulevard turns west off the main route through Moab, U. S. 163. Take this paved road as it heads for the rocky portal to the west of town through which the Colorado River leaves Moab Valley. About a mile beyond where the road first reaches the river, it crosses a cattleguard. A few yards beyond

this, an inconspicuous set of wheel tracks turns sharply left. Follow these, and very soon you will understand the "cliffhanger" label given this trail.

For over a mile, the trail works its way up steeply sloping rock strata, climbing steadily up solid expanses and ledges of Kayenta sandstone. Behind you, as you ascend, more and more of the picturesque Colorado River gorge comes into view. The calm, green-bordered river reflecting the sheer walls of Navajo sandstone that confine it offers a sight you will not soon forget.

As this tortuous, most difficult part of the trail reaches the summit, it levels off and swings right, parallel to the Moab Rim and also a thousand feet above the valley floor. Stop here and walk the few yards over to this rim and sample the magnificent view there.

Below you sprawls the sixteen-mile length of Moab-Spanish Valley. The Colorado River enters this rockbound lowland through a narrow portal in the opposite wall. Beyond this wall, in all directions, is a veritable maze of gigantic, eroded domes and fins and terraces of red-tinted slickrock, with these monstrous outcroppings of rounded, ancient stone separated here and there by sparsely vegetated sandflats.

Beyond the rock-and-sand wilderness,



to the east, the high plateau of Wilson Mesa serves as a giant veranda for the towering, snow-tipped peaks of the La Sal Mountains. There, vast evergreen forests struggle futilely up talus slopes toward the conical tips of rare "lacoliths" mountains—mountains that formed in a way unique to southeastern Utah.

And directly below you, set in the midst of the verdant valley, is the toy-sized town of Moab.

Back to the trail, the going is easy for a half-mile or so, then it plunges downward into a labyrinth of rocky canyons, sand



Right: The view back down the Colorado River gorge is magnificent from the first mile of the Moab Rim Trail. This difficult trail climbs steeply sloping rock strata and offers a challenge to the best off-road drivers and vehicles. Below: At one point along the Moab Rim Trail, the remains of an ancient Indian "fort" can be visited. The only access to this easily-defended site is up through a narrow crevice. Visitors are warned not to disturb the ruins, which are protected by both state and federal antiquities laws.



dunes and drywashes. Progress slows, as the trail penetrates the looming, monstrous Navajo sandstone fins that dominate forty square miles or more of the land to the southwest of the Moab Rim.

High on one cliff to the left is a big arch. On all sides, narrow, mysterious side-canyons and grottoes and shadowed clefts invite exploration on foot.

After descending for a mile or so, the trail crosses one last dry creek bed that often contains little pools of mirror-like water in solid rock potholes, then climbs once again. For an interesting and scenic

May, 1973



hike, park near here, and climb the slick-rock domes in a general northwestern direction. Within a very few minutes, you will come to a high canyon rim that overlooks the Colorado River. Along this solid rock rim are gigantic potholes large enough to contain their own small forests, awesome cliffs, arches in the making and, if you go far enough, a view down onto that first tough stretch of trail that you conquered.

Farther along the vehicle trail are beautiful panoramas of typical Behind-The-Rocks scenery. A giant-sized "throne" of stone stands silhouetted against the eastern skyline, while rows of parallel sandstone fins tower hundreds of feet into the sky in all directions. This is truly a land that makes you feel small.

In another mile or so, if you have kept on what seems to be the main trail, you will find that trail ending on a high and narrow peninsula. Beyond, on a still more lofty portion of that slender mesa, you may spot the pitiful remnants of an ancient Indian outlook or fort, perched high atop a flat-topped mushroom of rock.

If you should take the time to squeeze up through the narrow crevice that gives access to these ruins, please do not disturb them, nor any of the petroglyphs that decorate nearby rock walls. These remains of an earlier American culture

are protected by both state and federal antiquities laws. Admire them, study them, appreciate them, even let them help you visualize the terribly rugged lives that were lived by these first Americans. But leave them as you found them. Take pictures and memories, but nothing else.

But in spite of appearances, this is still not the end of the trail. You bypassed an inconspicuous turn. So back-track to the nearest drywash and watch for tracks that cross that wash and head north for a short distance, then angle up the slope toward the distant rim of Moab Valley.

This trail goes through a stretch of weird terrain, where very hard, thin slabs of rock sound like crockery, or even metal plates, as wheels roll across them. Not much farther along, the trail does finally end, at still another awe-inspiring view down into Moab Valley and the wild and beautiful lands that lie beyond.

Enjoy your trip along the Moab Rim Trail into Behind-The-Rocks country, but plan your return trip to make certain you have daylight for that last steep stretch. It's tough going up, but tougher still doing down—if you don't have daylight to help.

And it would be a case-hardened soul, indeed, who could stand looking at that magnificent scene and truthfully say, "It wasn't worth it." □

IT WAS LATE afternoon and the sun's elongated rays skipped over the snow-banks and lighted the frosty meadows. Though it was mid-September, winter had made an early appearance in Oregon's Warner Mountains. Dozens of campers had been marooned in the high country but snow plows had cleared the roads while helicopters rescued the snow-bound.

Our immediate destination was Plush, where we planned to camp overnight before continuing north to the sunstone fields. We left the highway on a paved shortcut, and soon joined an almost endless procession of cattle traveling a well-used trail to their winter feeding grounds in Warner Valley. The road curved abruptly east, and ahead loomed the great escarpment of Hart Mountain, its 3000-foot rim rising almost vertically from the valley floor. A chain of sky-blue lakes, separated by marshy sloughs, nestled against the mountain's base.

The distant buildings at Plush were diminished to toy size by the towering mountain. Stretching north, as far as the eye could see, were the sagebrush plains of Oregon's Desert, the monotony of which was broken only by a few rolling hills and scenic rimrocks. Flooded with the warm color from a setting sun, it was a magnificent view. When we paused to enjoy it, we found ourselves once again caught in the enchantment of desert country.

A quarry, just west of Plush, provided an ideal location for an overnight stop. It is Jerry's custom at each new campsite to "go over" the area with our Mineralight. We nearly always find some fluorescent material but the quarry really "lit up." Several medium-sized, brightly colored, pink, green and orange specimens were added to our fast growing collection.

Plush was once a thriving little community serving the needs of ranchers and cowboys in the days before modern transportation. It began existence as a nameless town since the ones chosen by its citizenry—Fairview and Pleasant City—were not accepted by the Postoffice Department. It seemed there were already Oregon cities so-named. However, the little town was destined to receive an unusual name—one which would be remembered by every visitor. When the usual Saturday night poker game found the stakes sky-high, all but two players dropped out. The cowboy bet his entire cash roll and the Indian called with his horse and saddle. "What you got?" he asked. The cowboy answered, "I've got a flush!" "Me plush, too," replied the Indian. A roar of laughter came from the spectators and it was decided then and there to name the town Plush.

Today, about a dozen homes remain in Plush along with a school and church, plus a business district which houses the postoffice, a limited grocery, bar and gasoline station under one roof. The friendly

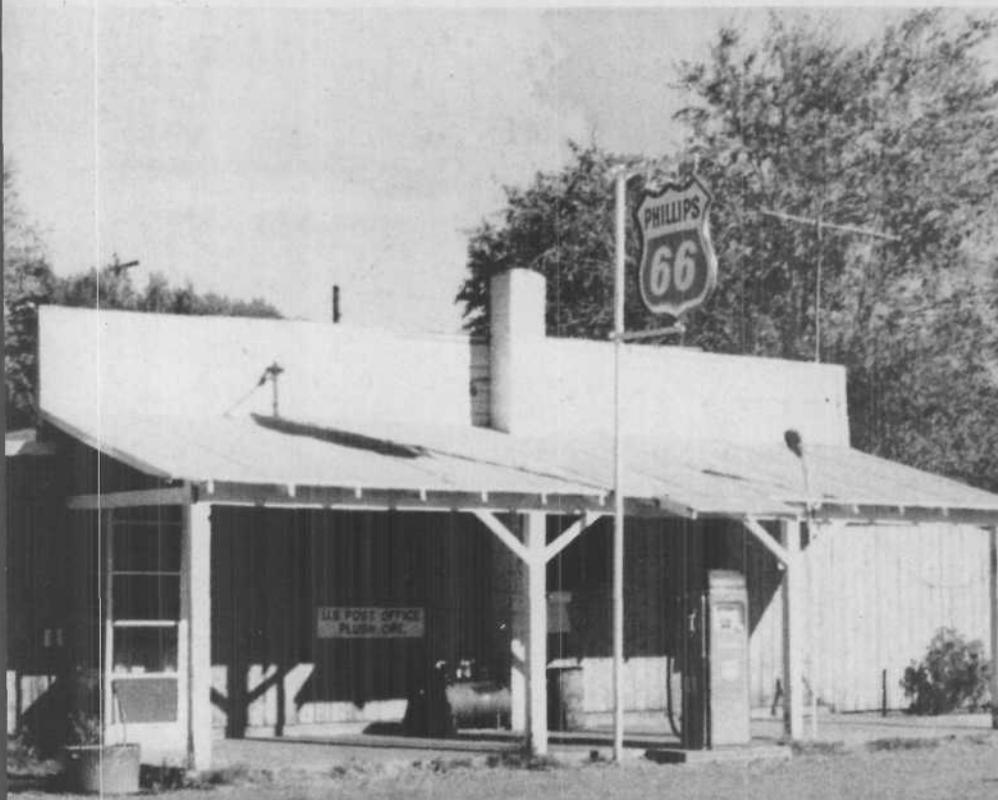
owners of the latter added a map of the sunstone area to the several others we had along.

Plush is also the gateway to Hart Mountain National Wildlife Refuge—the home of Oregon's herd of some 12,000 antelope. Nature enthusiasts will enjoy visiting the Refuge which is open from June 1st to October 30th. A primitive campground (elevation 5800 feet) is operated by the U. S. Bureau of Sport Fisheries & Wildlife, P. O. Box 111, Lakeview, OR 97630. Camping limit is two weeks—no fee. Fishing and hiking can be included along with "nature watching."

The route to the sunstone area found us traveling north on a graded dirt road. A mile from Plush a sign announced the road leading east to Hart Mountain. We continued north, skirted the lakes, passed under some rimrocks then paused briefly to watch the "soaring play" by a pair of golden eagles. The air was brisk with autumn and the warmth of the sun was comforting.

Just over 10 miles from Plush, we turned right onto Hog Back Road, then at .5 of a mile, turned left at a sign "Rabbit Hills—Sunstone Area." The entire route is well-marked and graded roads provide easy access for all cars and trailers.

Eight miles of travel (see map for detailed mileage, found us again turning left. We angled northwest, crossed a dirt dam in Rabbit Basin, then came to a sign "Sunstone Area" announcing we had



SUN

by
Mary Frances Strong

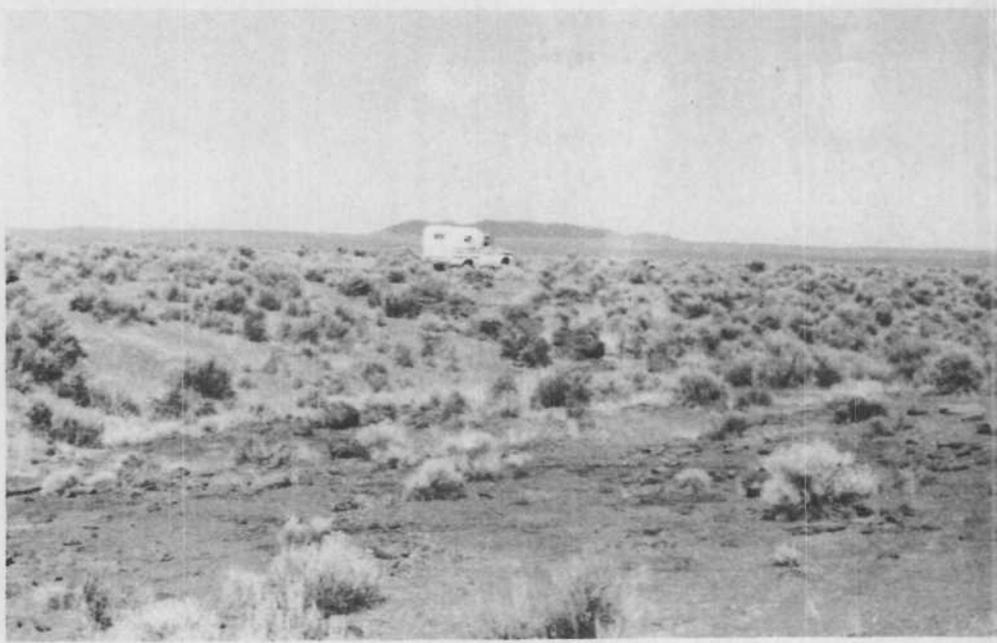
photos by
Jerry Strong

Plush is the gateway to the Sunstone Area and Hart Mountain Wildlife Refuge. Its business district is all housed under one roof—grocery, bar, postoffice and gas station.

Oregon Field Trip



Left: Sunstones were first collected from ant hills such as this one, at the Oregon Desert location. Oregon's harvester ants not only built big hills, but like to cover them with "gems." Bottom left: It doesn't take long to collect a handful of faceting grade sunstones. Below: The sunstone field covers several thousand acres on Oregon's vast, sagebrush-covered desert.



NY SUNSTONES

reached our destination. At this point, a cleared area offered a good campsite. However, we elected to follow the road going north from the sign. In about a half-mile there were several open areas for camping. We quickly parked and began the search for sunstones.

What are sunstones? You will find text books differ and, in general, agreeing only that they are one of the feldspars. According to Dr. Frederick H. Pough, the Oregon sunstones are bytownite—a rare plagioclase feldspar which occurs in lime-rich igneous rocks. Hardness is 6 and specific gravity 2.74.

At the Oregon location, the sunstones

are found weathering from a lava flow covering many square miles. They vary in color from clear to yellow, pink and green. The reflection of the sun's rays cause them to sparkle brilliantly—hence the name "sunstone." Sizes range from very small to larger specimens over an inch in length. The latter are not uncommon and a large percentage are of faceting quality.

Most of the sunstones are found as float and are easily collected—just bend over and pick them up. They also occur in-situ where erosion has exposed the lava along the wash. Large specimens will be seen in the lava but care must be taken when trying to remove them. A sunny day is best

for collecting the sunstones since the ground will sparkle and glitter from their reflections. The largest "sparkle" will not always yield the largest stone.

The extent of the sunstone field is considerable and old maps indicate a "Sunstone Mine." This location has known collectors since the turn-of-the-century. In the early days, they were called "Plush Diamonds." The first mining claims were not filed until 1970. Local rockhounds became alarmed when this occurred and requested the Bureau of Land Management to "hold the area open for the benefit of rockhounds and the public." The B.L.M. acted and 26,000 acres of prime sunstone

fields have been set aside for recreational purposes.

This location is believed to be the only one where colored-sunstones (pink and green) may be found. It is also one of the few areas where faceting-quality gem

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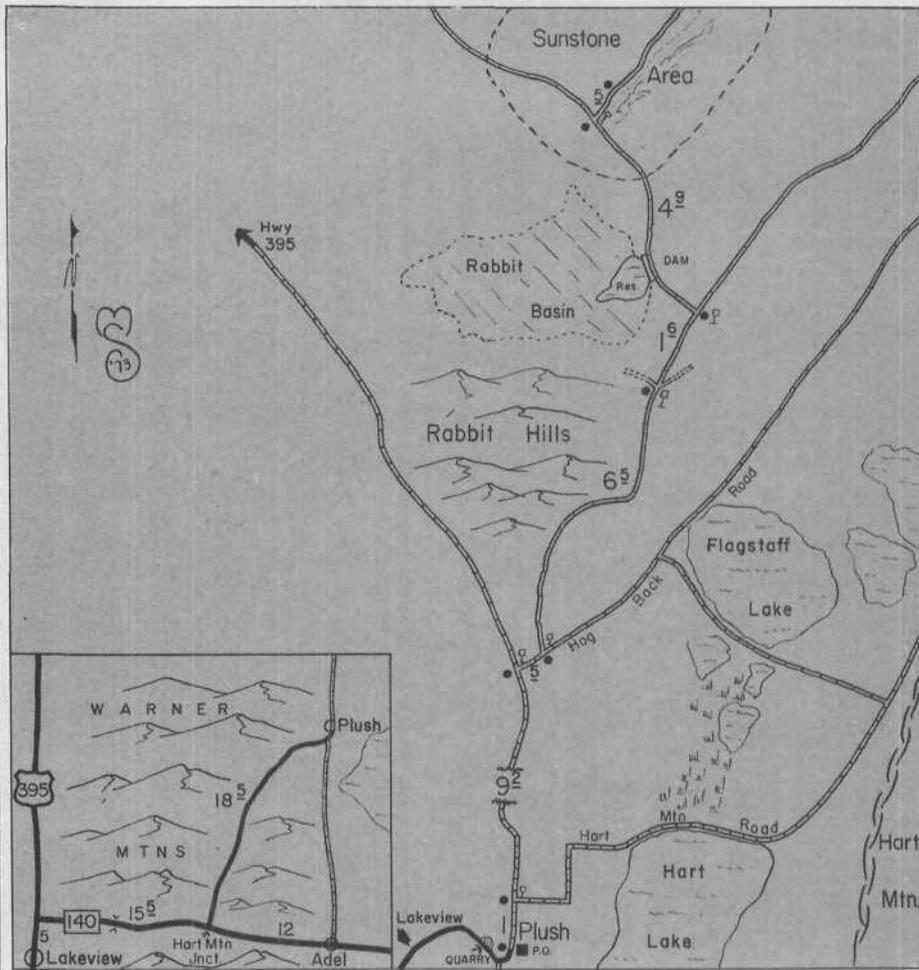
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material may be collected free. Sunstones can be worked into beautiful cabochons and they also tumble very well. Good specimens are highly-prized by collectors.

Several trails lead through the area and it is a matter of personal preference where

you collect. A week or two spent in this locale should produce many outstanding stones, as well as an enjoyable rockhound vacation.

There are numerous places to camp in this open desert country. Earlier visitors have left nicely-cleared sites. We were impressed with the lack of any litter even though there have been hundreds of collectors over the years. There is no water or wood. Nearest supplies would be at Plush—limited groceries, water and gas. Propane and ice can be obtained at Lakeview.

Oregon's High Desert Country occupies the southeastern corner of the state, encompassing some 24,000 square miles. It has a unique beauty not duplicated elsewhere nor is it loved by everyone. There are miles and miles of sagebrush-covered plains and rolling hills where a tree is an oddity. Great faults have lifted, pushed and tilted tremendous blocks of land skyward. The resultant escarpments and picturesque rimrocks gave character to the land.

With nearly every major valley containing a lake, and some are sizeable, it is often hard to realize this is desert land.

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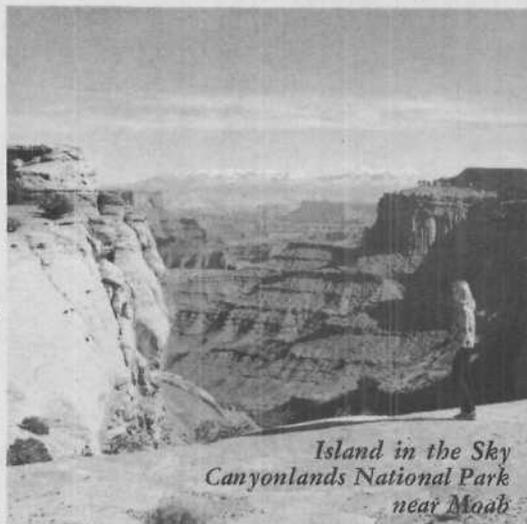
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Oregon's Desert also has another face, described by E. J. Jackman in "The Oregon Desert," as "dry, hot, cold, gray, hard, vast and fierce. Let's call it raw." I must agree it is all that, but doesn't everyone and everything have their faults? Are we not supposed to overlook them in our friends?

For indeed, the desert is a friend to modern man. It offers its visitors a tranquil haven and opportunities for pleasure. In the Warner Valley, the desert provides even more — a field of semi-precious stones. Here the rock collector may camp under the stars and search the hills for specimens. In the months to follow, when the rocks are cut and polished into gems, they will always be reminders of the days spent on the Oregon Desert chasing "sunny sunstones."

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TUBIN' ON A

by
Earl
Spendlove



Above: Campground where our wives waited for us. Assembly Hall Peak is at the right. Opposite page: The silt-laden stream, flowing over a thousand years, has cut shallow caves in the base of the orange-red sandstone cliffs. Lou Braun is in boat. Left: We packed our gear in "waterproof" bags. Lou Braun, left, and author.



I PLANNED TO CALL this article, "Running the Roaring Rapids of the San Rafael River," but "Tubin' on a Trickle" would be more appropriate.

The San Rafael is a canyon river in central Utah. I first saw this little stream in the summer of 1971 when Lou Braun missed a turn and I followed his camper down a dusty road to a place called "Fullers Bottom." Later that day, we looked down, more than a thousand feet, to see the sun shining on the river, winding its way along the bottom of a deep, steep-walled canyon.

"I'll bet we could float from Fullers Bottom to here in a day," Lou said the following day as we stood on a bright yellow bridge, 20-odd miles downstream from the Bottom, and watched our children float down the river on an inner tube.

The water at the bridge, and at Fullers Bottom, was about 18 inches deep, and would easily float a canoe or a rubber raft. U. S. Geological Survey maps showed the stream had an average fall of ten feet per mile. Not really a rip-roaring river, but it looked interesting and the first of July, 1972, we had our rubber boats in the water at Fullers Bottom.

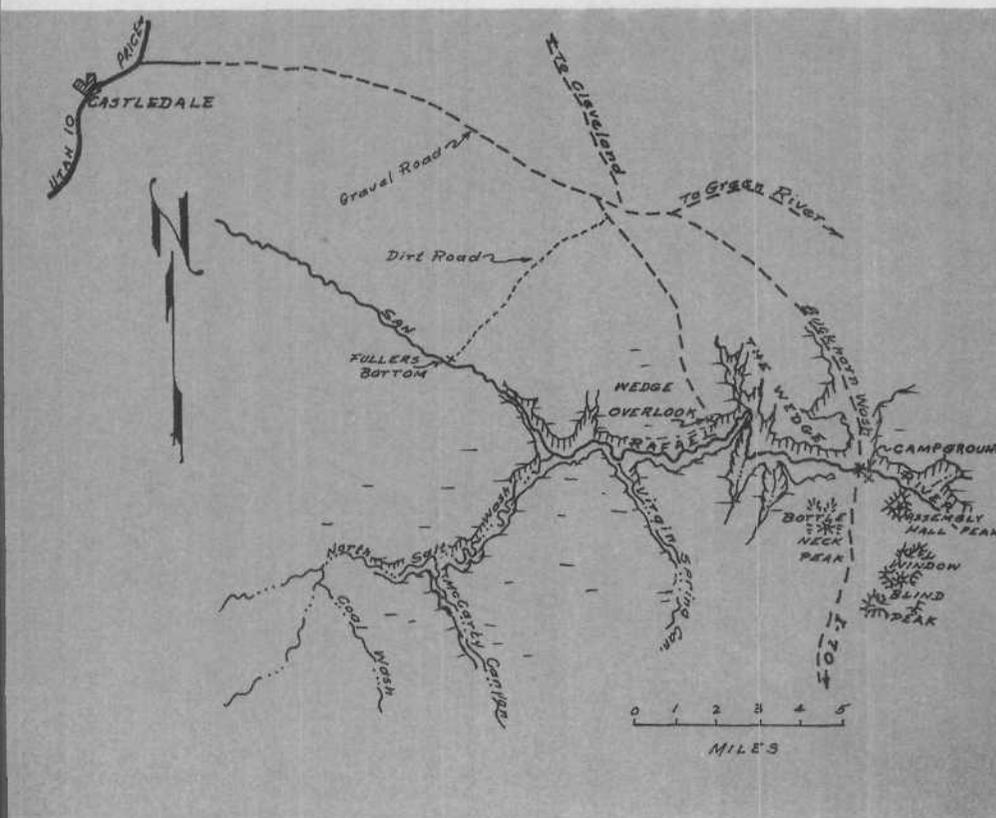
We were shocked when we saw the size of the stream. Nineteen seventy-two was a dry year and much of what had been riverbottom the year before was now mud, white with alkali. We knew this meant that in many places we would have to drag our boats through the shallow water, but we were determined to go and we got our things together.

"Here, this will keep your stuff dry," Lou said, and he tossed me a blue, rubberized bag. Carefully we wrapped our gear in plastic bags and put it into the waterproof sacks.

The sun was an hour high when we started down the river toward the bridge and Bureau of Land Management campground where our families were awaiting. A couple of miles downstream we entered the canyon of the San Rafael and floated under great cottonwood trees that grew out over the river. In places the stream ran head-long into the towering cliffs, and the silt-laden waters, flowing over a thousand years, had carved great, shallow caves in the base of the orange-red sandstone walls.

The beauty was breath-taking and we

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stopped at every turn to take pictures and scramble up the steep banks to explore along the cliffs for Indian ruins and petroglyphs. Getting in and out, we sloshed a lot of water into our boats, and at noon we found a couple of quarts of water in our "waterproof" sacks and we thanked our lucky stars for the plastic baggies.

As the afternoon wore on, and we paddled, drifted, and dragged our way down the winding river, we realized our maps did not show all the many bends of the stream. But, when the sun sank behind the high rim to the west and the long shadows piled up in the canyon, we had covered more than half the distance to the bridge.

We stopped for the night at the end of a long, thin, red wall that extended nearly a mile from the main plateau. The river ran in a northerly direction along the west side of the wall. Then, it turned back upon itself and flowed in the opposite direction, along the other side of the high, rock fin. As darkness crept into the canyon, we pulled our boats up onto a high bank where there was plenty of wood for a fire, and a canyon breeze that discouraged mosquitoes. After we

had eaten, we built a roaring fire, leaned back against our boats, and talked of the things we had seen.

In the mud along the river we had seen tracks of deer, muskrats, beaver, coyotes, bobcats, and numerous birds. Several ducks took to the air ahead of us as we floated along. At one bend of the river, a gangling sandhill crane struggled awkwardly to get airborne. Once we heard splashing in the water behind us and turned to see a big doe, her brown coat shining in the sun, charge up the bank and disappear into the brush.

A desert river, such as the San Rafael, is a strange place for beaver, but this little creature is probably the most abundant wildlife species in the canyon. Floods make it impossible for the beaver to build dams, so this industrious little rodent burrows in the banks and anchors sticks, cut for food, in the mud at the bottom of the stream.

The beaver are, however, literally eating themselves out of existence. Young cottonwood and willow shoots are eaten faster than they grow. And, the hungry little critters are moving up onto the higher banks and cutting down tough, old trees that are dying because their roots can no longer reach the life-saving water.

When the fire burned down to a glowing bed of coals, we lay on our overturned rubber boats and gazed up into a star-filled sky. A soft, warm breeze whispered through the canyon. It was so quiet you could almost hear the silence, and we were soon sound asleep. Later, a cool breeze came up and, half asleep, I crawled under my poncho and dreamed of dragging a rubber raft over the Sahara Desert.

Next morning we floated along the base of the high rock fin. If we could have thrown a stone over this red, rock wall, it would have landed in the channel we paddled down the day before. When the river turned east toward the bridge and campground, the cliffs moved back on the south and left odd-shaped rock castles, temples, and fortresses standing in the desert by themselves.

It was shortly afternoon when we paddled under the bright, yellow bridge. We were sunburned, dirty, and dead tired, but it had been fun.

"I'd like to do that again," Lou said, as he pulled his boat up the bank, "but the next time, I sure hope there's some water in that darn river!" □

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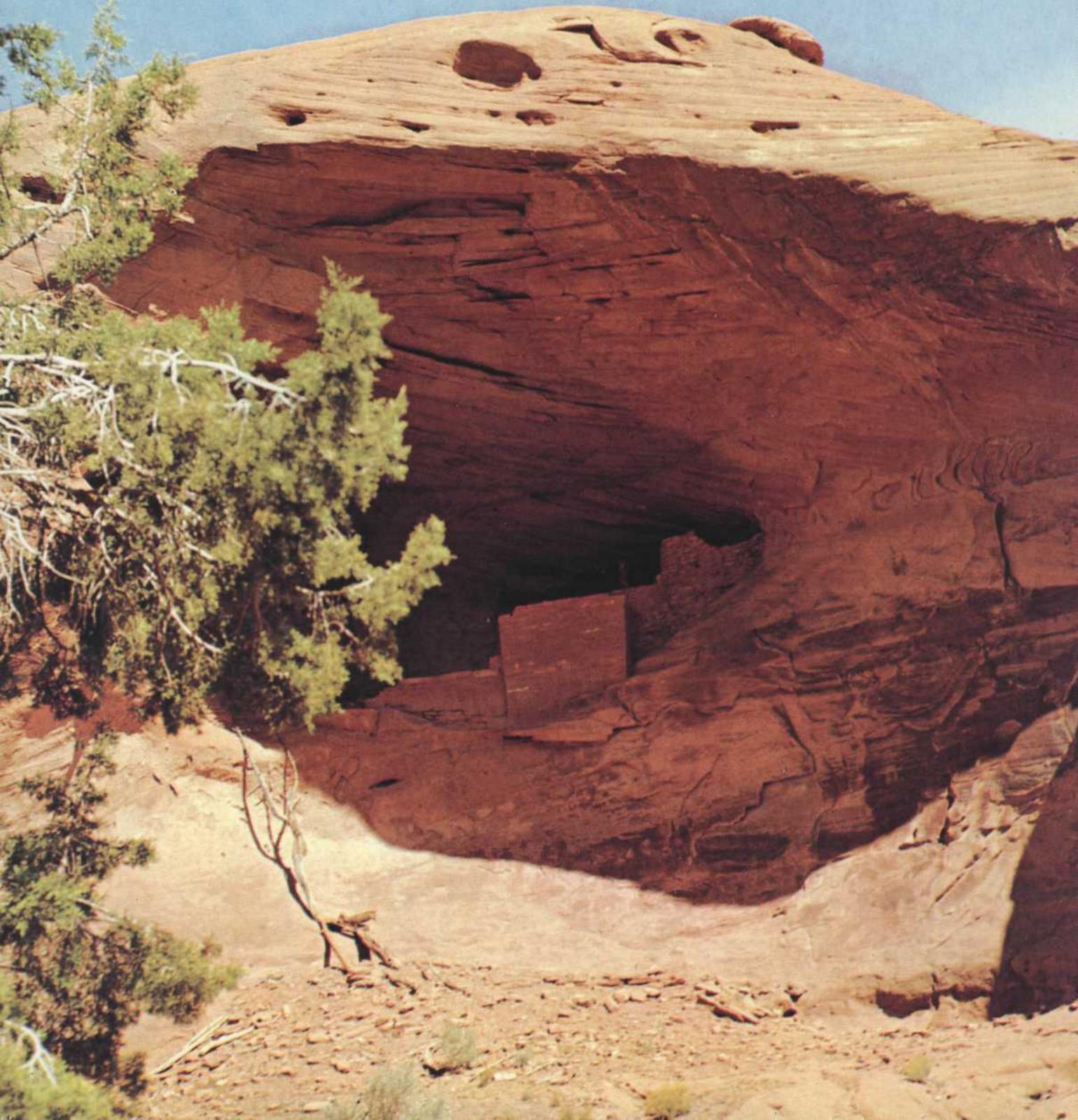
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Mystery Valley

by Jack Pepper



WE HAD LEFT the hardtop and were winding down a sandy road around a mesa on the side of a valley when Bernie Maher stopped his four-wheel-drive vehicle.

"This is where the old Navajo usually signals to me and asks for a token fee," he explained. We joined Bernie by the side of the vehicle and he pointed to two Navajo children who were tending sheep about two hundred yards away. He waved his hands and shouted, "Yah-teh-hey," which is the best English translation of "hello" in Navajo.

Looking up, the children recognized Bernie. They jumped on their pony and galloped toward us, stopping a few yards from the car. Instead of running after the children, the two sheep dogs remained with the animals.

Bernie talked to the children in Navajo for a few minutes and they explained their grandfather was in town. Asking them if we could take their pictures (always a must in Navajoland), they shyly posed with Bernie who then gave them candy and oranges.

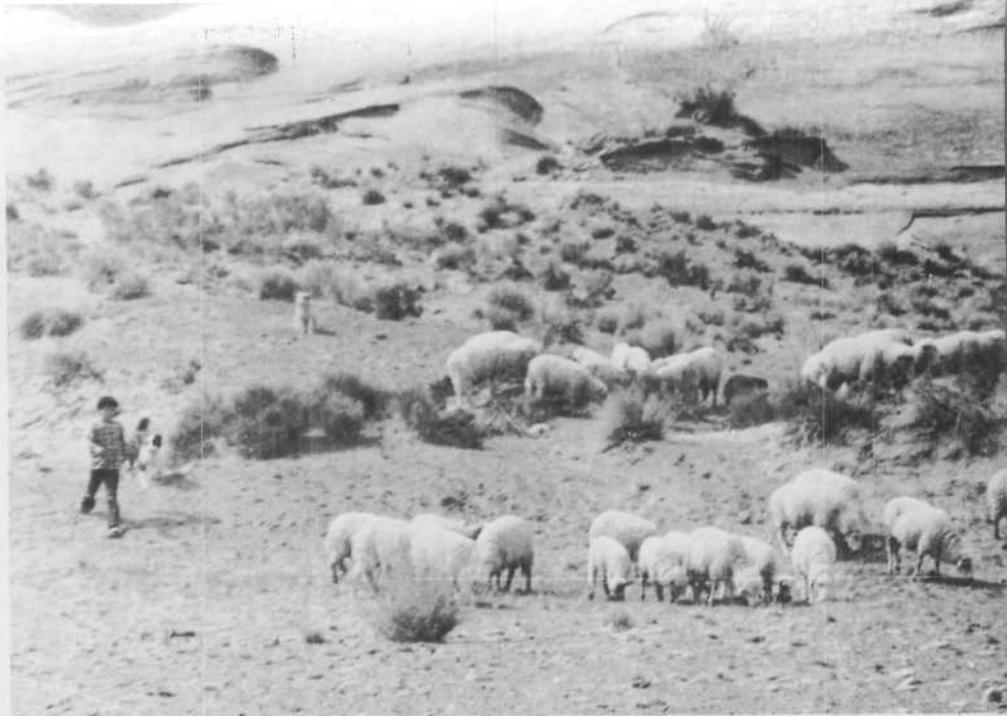
After taking their pictures I smiled and said, "A-Kay-Hay," and felt very proud that I could say "thank you" in Navajo. They looked at Bernie and shrugged. Bernie repeated the words in the beautiful, soft sounds of the Navajo. The kids grinned and said, "you are welcome," in perfect English.

As we drove away, Bernie explained that although the Indian children are taught English in school, they are proud of their heritage and appreciate the white man who tries to learn their language and understand their culture.

The largest Indian reservation in the United States, Navajoland has 16,000,000 acres and extends from the border of the Grand Canyon National Park in central Arizona eastward into New Mexico, and from the Utah-Arizona border on the north to Interstate 40 and U. S. 66 on the south.

It encompasses some of the most spectacular mountains, deserts, lakes and rivers in the world and its geophysical formations provide geologists with a cross-section of what happened to our planet million of years ago. Even today, some of the area has not been seen by either Indians or white men, and archeologists are still discovering sites of the prehistoric Anasazi (Navajo for "Ancient Ones")

May, 1973



Navajo shepherd and his flock.

whose culture flourished about 1,500 years ago.

When the nomadic Navajos, who were descendants of the Athabaskan bands, migrated from the North starting about 1000 A.D., they found the Pueblo Indian — (the present-day Hopi Reservation is located on mesas and is surrounded by the Navajo Reservation) villages and gradually absorbed part of the Pueblo culture. Learning to farm and weave, the once nomadic Navajos settled in the

valleys and built their hogans.

But then the former invaders were also invaded. In 1540, in search of gold and the Seven Cities of Cibola, the Spanish conquistador, Coronado, came from the south, starting the migration of the white man. Other Spanish expeditions were followed by Mexican raids, and then the infamous invasion and military subjugation of the Indians by the "Great White Father."

In 1864, after surrendering to Colonel



Bernie Maher emerges from a Navajo sweat house.

Guided tours provide access to remote parts of Mystery Valley.



Kit Carson, the Navajos were sent on the "Long March" to Fort Sumner, New Mexico. In the Treaty of 1868, they were allowed to return to their land.

Today, the Navajo and Hopi Indians are once again establishing their ethnic identities through development of natural and economic resources and through a resurgence of their arts and crafts. Although in no way related, and often rivals, Navajo and Hopi (and to some extent

Zuni) craftsmen are exchanging artistic designs and ideas and creating today's beautiful contemporary jewelry.

One of the main attractions in Navajoland is Monument Valley and the Navajo Tribal Park off U. S. 163 on the Utah-Arizona border. I was making my annual trek through the "Indian Country" and since I had toured other areas of Monument Valley on several occasions, I wanted to see something new.

So I called my friend, John Burden, at Goulding's Lodge and Trading Post in Monument Valley. I first met John when he and his brother, Dana, and their mother, Sophie, were owners and operators of Remuda Ranch in Wickenburg. After selling the ranch, John became manager of Goulding's. John informed me that veteran guide, Bernie Maher, was now operating Goulding's four-wheel-drive tours into Navajoland and suggested going to Mystery Valley.

I arrived at Goulding's in time for breakfast at their Lodge and Trading Post which is located on a hill overlooking Monument Valley. Harry Goulding and his wife, "Mike," first came to Monument Valley as a young bride and groom in 1924. They lived in a tent while erecting the first stone building. The nearest supplies were over a dirt road to Flagstaff, 200 miles away.

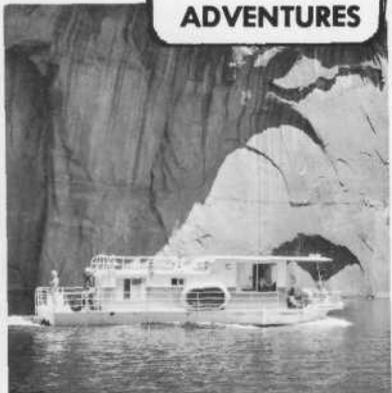
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and spacious motel rooms, an Indian art and crafts shop, a nearby landing strip, guided 4WD tours throughout Monument Valley and Western-style gourmet meals which satisfy the hunger gained through being out under the open sky all day.

A mile up from the Lodge is the Seventh Day Adventist Hospital which was erected in 1950 for the Indians of the area and on land which was donated by Harry and "Mike" Goulding. Now retired, Harry and "Mike" are devoting their time, as they have for the past 46 years, to bringing a better understanding between the Indians and the white settlers.

Before heading for Mystery Valley, Bernie drove us past the hospital and to the Oljeto Trading Post and the nearby new mission of Father H. Baxter Liebler. Father Liebler, who today is a young 81-years-old, first established a mission near Bluff, Utah. The Episcopal clergymen, who came West from Boston, has devoted his life to helping Navajo children.

The new mission was built by the Navajo Indians and is in the form of a Kiva, an Indian place of worship from the pre-

historic days. The chapel is called St. Mary of the Moonlight. Oljeto in Navajo means Moonlight Water.

Mystery Valley is aptly named. It is a strange land of geological contrasts, ancient ruins, monoliths, mesas and spires and weird natural arches formed many thousands of years ago when the elements of wind and rain gradually leveled the sandstone and created the colorful and scenic land which one sees today.

It is a land of soft sand, sharp rocks and forbidding boulders. It is also a land of beauty where you find flowers growing out of sandstone, verbena covering the sandy areas and majestic juniper, oak pinion, white ash and mountain mahogany trees whose gnarled forms are highlighted by the cloud-covered blue skies.

While taking the photographs shown with this article—for Mystery Valley is at its best in pictures—I felt the strength of the silence which seems to prevail over the Valley. And I, too, felt like I was an invader—as were the first Navajos, the Spanish, the Mexicans and the gringos. But unlike the latter three, one of the invaders returned and made this country their home—Navajoland. □



BERNIE MAHER
Professional Guide

Bernie has been a part of the Southwest since 1925 when he started as a trader at White Rock Trading Post. Moving to Teec Nos Pos in 1928 he remained there until 1931 which found him in Four Corners. The Four Corners monument holds the thumb prints of Bernie, his wife Esther and daughter, Wanda.

Trading posts such as Tocado, Nazlini, Oljeto and Gouldings, plus a stint with the U.S. Railroad Board during World War II, spanned the years through 1951.

In 1952 he moved to Kayenta and started Golden Sands Tours, which he sold to the Crawley brothers in 1964. Semi-retired, he returned to Gouldings in 1971 as tour manager for the summer season and is doing what he likes most: Telling and showing folks his beautiful Southwest.

Photo by Herb & Dorothy McLaughlin

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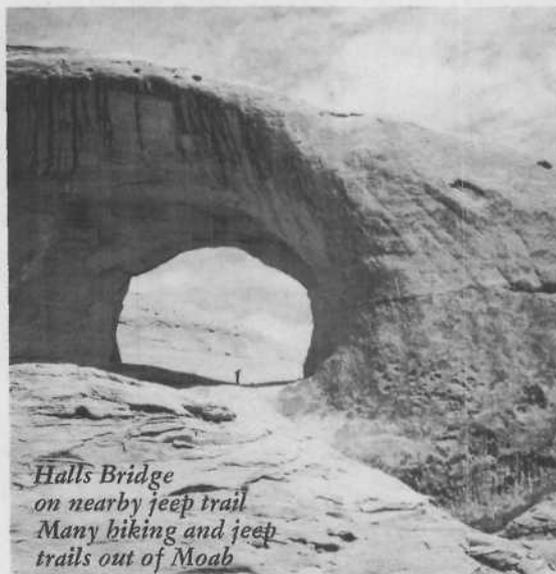
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Wonderful World of Wasatch

Continued from Page 16

connects with U. S. Highway 6-50, north at Price, and U. S. Highway 70, south at Fremont Junction. Utah 57, then 29, through Orangeville is only 20 miles to Joes Valley Reservoir. This is graded dirt and gravel and the best approach through Straight Canyon to the central recreational area of the plateau. Old Timers, with typical frontier humor, named the narrow openings to Joes Valley, "Straight Canyon," because it is so crooked.

Joes Valley Reservoir has well developed facilities which include 48 well-placed spaces to accommodate small trailers, campers, tent campers, chemical toilets, water, boat launching ramp (concrete). All sites are equipped with tables and fireplaces, but bring your own wood. Boating, lake and stream fishing, jeeping, hiking, photography, sightseeing or just resting are enjoyed here. Joes Valley is heavily used by Utahans on long weekend holidays, but otherwise is not crowded. Late spring, summer or early fall are

prime times to visit this beautiful place.

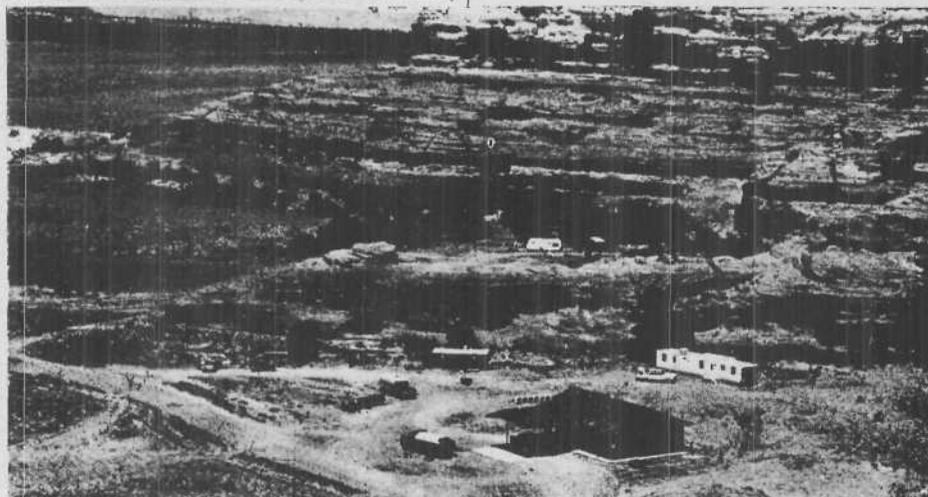
From Ferron: Along the drive up Ferron Creek are 11 primitive campsites, stream fishing May-Oct. Willow Lake, 3 primitive campsites, lake fishing, June-Oct. Ferron Reservoir, 29 developed campsites, lake fishing and boating June-Oct. Ferron Reservoir is beautifully situated in an alpine setting and is at the extreme southern end of the scenic Sky-line Drive.

Highway 31 out of Huntington is partially paved, then gravel, but the upper part of the canyon is at present under construction. However, Utah 31 is the main access road to several very good fishing areas along the canyon and adjacent high country:

All campsites are primitive and some require 4WD vehicles for access. Flat Canyon, 20 campsites, stream fishing June-Oct. Gooseberry, 10 campsites, lake and stream fishing June-Oct. Huntington Canyon, 6 campsites, stream fishing May-Oct. Forks of the Huntington, 13 campsites, stream fishing May-Oct. The isolated high country lakes, Boulger Reservoir, Beaver Dam, Lower Gooseberry, Rolfson Reservoir, Millers Flat and Cleveland Reservoirs, are usually not accessible until late June because of snow conditions, but there is plenty of good fishing at lower elevations from opening of the season until October.

Visit the Manti-LaSal Forest Office in Castle Dale or Ferron to obtain a map of the forest area which indicates roads, lakes, reservoirs and campsites. The rangers have current information on road conditions. Altitudes along the backbone of the Wasatch Plateau on Skyline Drive are 10,000 to 11,000 feet and this road is sometimes not open until the first of July. For advance information you may write to: Ranger Ira Hatch, Manti Division — Manti-LaSal National Forest, Castle Dale, Utah 84513.

Add your footsteps to those of dinosaurs, prehistoric Indians, Coronado, Escalante and Dominquez, fur-traders, trappers, Mormon pioneers, notorious outlaws, cattle rustlers and horse thieves, along with the hard working, everyday variety of cowboys, and explore this varied and intriguing Castle Country. See it all if you can. But remember to keep it clean and green, for you will want to return again to the Wonderful World of the Wasatch Plateau and its environs. □



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Ghost Town for Sale

Continued from Page 13

but a short time, Madrid never seemed to recover from the accident. In 1941, just as the mines began to gear up production for World War II, the majority of miners left their small, mountain home to join the national effort. By the end of the war, though Madrid still had an inexhaustible supply of coal sitting untouched in its vast fields, it had few miners, and even fewer customers.

Why is Madrid for sale? Joe Huber, who inherited the town and its history from his father, Oscar Huber, says the reasons are few and simple.

"It's just too big a responsibility," says Joe.

And even though 32 million live within an 800 mile radius of Madrid, there is no longer a market for its coal.

According to the real estate dealer who is handling the sale of Madrid, lots of investors have shown a more than passing interest in the town.

One prospective buyer wanted to turn it into a giant resort motel, complete with

swimming pool and gourmet restaurant. Another decided Madrid would make a wonderful amusement park. The roller-coaster would parallel the old railroad tracks.

Even the movie industry was interested. A Hollywood producer talked of Madrid's possibilities as an ideal frontier town, much on the same order as Old Tucson in southern Arizona.

"Madrid's unspoiled authenticity would make it great for the part," the producer said. He was right, but he failed to come up with \$500,000.

So far, much to the unconcealed amusement of the natives who aren't particularly fond of land developers, no one has bought Madrid. Could it be that the ghosts of the old mine shafts have been taking a phantasmal hand in their own future?

"It's possible, but not very likely," says one of the few talkative residents of the town, an oldster who was born and raised in Madrid. "Anyway," the old man adds, "it gets so cold up here in the winter that if there ever were any ghosts in them old houses, they probably froze their sheets off by now!" □

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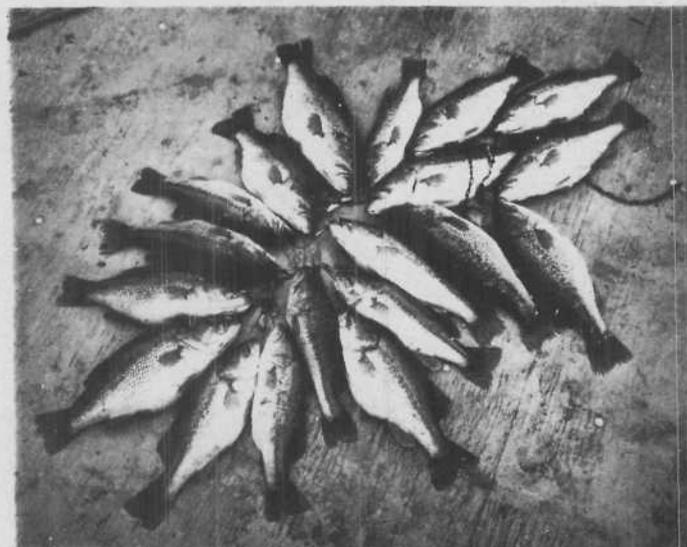


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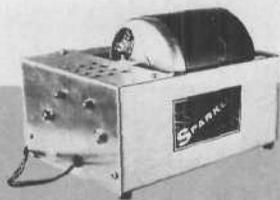
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DIMORPHOUS MINERALS:

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ONE OF THE interesting oddities of minerals is when two minerals have exactly the same chemical formula, but differ as to crystals, hardness, and other characteristics. These are called dimorphous minerals. The name is from the Latin, *di-* (two) and *morphos-* (form).

The only thing that dimorphous minerals usually have in common is the chemical constituents. Hardness, specific gravity (the weight of the mineral in relation to the weight of an equal volume of water), crystal form, and other characteristics are at least slightly different; and in some cases extremely so. The classification is based entirely on chemical content, but to the mineralogist this is the most important of all characteristics.

It is the arrangement of molecules in the crystalline pattern of the mineral that makes the difference between any dimorphous pair. If the molecules are compacted tightly in one, the mineral may be hard; and if they are grouped loosely in the other, it may be soft. The first should have a higher specific gravity than the second. If the molecules are arranged differently, then it usually follows that each has a different type crystal.

Calcium carbonate encloses two dimorphic partners—calcite and aragonite. Calcite forms crystals that are hexagonal in form. It exhibits many variations of this form, and actually shows more variation than any other mineral. Aragonite forms plate-like, blocky, or long slender crystals.

An interesting adaption of the difference between the two is made by some living things. All shell fish such as oysters, clams, mussels, snails, etc., form their shells of calcium carbonate, and are able to take advantage of the two crystal types. When the animal secretes shell, it is done with the mantle, a thin flat organ that lies along the inside of the shell. The outside of the shell is created by the edge of the mantle, and is laid down as calcite with the hexagonal crystals nicely interlocking to form a tough rigid coat.

When the animal creates a lining within the shell, it is secreted with the central portion of the mantle, and the mineral laid down is aragonite. It makes a smooth lining composed of flat, plate-like crystals that have tiny corners to which the animal attaches itself.

In some of the mussels and oysters, the inner layer of aragonite is iridescent and pearly, known as mother-of-pearl. It is in this region that true pearls are formed, and they are of aragonite.

The minerals andalusite, sillimanite, and kyanite are a group of three made of aluminum silicate. In this case they are

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called trimorphous; the *tri* is Latin for three. Andalusite is named for the province of *Andalusia* in Spain; sillimanite is named for a mineralogist named *Silliman*; and kyanite from the Greek, *kyanos*- (blue). Each can be used to make fine dense porcelain such as is needed for spark plugs for automobile engines. All three can be cut into beautiful gems as their optical properties are above average.

Their differences? Each has a slightly different specific gravity, andalusite the lowest, kyanite the highest. Andalusite is the hardest at 7½, while sillimanite is slightly lower ranging from 6 to 7. Kyanite is very unique in that it has three hardnesses in three directions of the crystal. Scratch one side along the crystal length and the hardness is 4; scratch the end of the crystal and it is 6; scratch another side across the crystal length and the hardness is 7. This is the only mineral that exhibits a multiple hardness.

The three are quite different in the gems that they may produce. As might be expected, andalusite, with the superior hardness, makes the better gem. It has an interesting color behavior in that it is green in one direction, yellow in a second, and orange in the third. A gem cut from andalusite may be orange in the center and green on the sides, even though it looks the same color over-all.

Sillimanite cuts into a brilliant, nearly colorless faceted gem. Some specimens are very tough, and produce yellowish cabochons with a jade-like toughness.

Kyanite again does the unusual with crystals that are usually bi-colored. The center of the crystal, throughout its length, is usually blue, with the outer shell green to nearly colorless. A gem cut from such a crystal can have a blue stripe through the center.

The most interesting dimorphous pair is diamond and graphite. These are both

the pure element carbon. When an element appears free (as these two) the mineral is known as a native element. In all the mineral kingdom, there could not possibly be two minerals more unlike, dimorphous or not.

Diamond is the hardest of all minerals, 10 on the Mohs scale; graphite is very soft, with a hardness of 1. Diamond appears in many colors, most of them light, varying to colorless and transparent; graphite is always jet black. Diamond is used as an abrasive; graphite is used as a lubricant. The softness and lubrication qualities of graphite are evident to all of us, as it is the writing ingredient in "lead" pencils. The name graphite is from the greek, *graphien*- (to write). The name for diamond is a corruption of the ancient Greek word, *adamas*- (invincible).

Diamond forms crystals usually as cubes or double pyramids (octahedrons), but all diamond crystals break apart (cleave) into the octahedral form. These cleavage pieces are always sharp and angular, thus ideally suited for an abrasive. Graphite forms very thin flat crystals that are slippery, thus allowing it to glide on metal or paper.

There are other groups of dimorphic or trimorphic partners (the collective term is polymorphism), each of them varying at least slightly in most characteristics, but the total number of these is very few out of the many thousands of minerals known. Each of these groups always attracts attention from mineralogists, as these similar-dissimilar relationships teach us something about the make-up of minerals.

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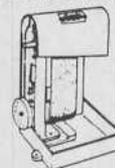


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GHOSTS OF THE GLORY TRAIL by Nell Murbarger. A pioneer of the ghost town explorers and writers, Miss Murbarger's followers will be glad to know this book is once again in print. First published in 1956, it is now in its seventh edition. The fast-moving chronicle is a result of personal interviews of old-timers who are no longer here to tell their tales. Hardcover, illustrated, 291 pages, \$7.00.

NEVADA GHOST TOWNS AND MINING CAMPS by Stanley W. Paher. Covering all of Nevada's 17 counties, Paher has documented 575 mining camps, many of which have been erased from the earth. The book contains the greatest and most complete collection of historic photographs of Nevada ever published. This, coupled with his excellent writing and map, creates a book of lasting value. Large 9x11 format, 700 photographs, hardcover, 492 pages, \$15.00.

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LET'S GO PROSPECTING by Edward Arthur. Facts and how-to-do-it on prospecting are presented by the author who has spent 30 years searching for gems and minerals in California. For those who think there are no more valuables left in California, they will find a new field in this informative book. Includes marketing data, maps, potential buyers for discoveries. Large 8x10 format, illustrated, heavy paperback, 84 pages, \$3.95.

SOUTHWESTERN INDIAN ARTS & CRAFTS by Tom Bahti. Beautifully illustrated with 4-color photographs, this book describes the arts and crafts of the Indians of the Southwest and offers suggestions on what to buy and how to judge authentic jewelry, rugs, baskets and pottery. Large format, heavy paperback, 32 pages, \$1.00.

GOLD MINES OF CALIFORNIA by Jack R. Wagner. Illustrated history of the most productive mines of the Mother Lode country with descriptions and anecdotes about the people who owned the mines and the roles they played in the development of California. Profusely illustrated with rare photographs, the author has chronicled California's greatest and most exciting era. Large 9x11 format, 300 photos and maps, hardcover, 259 pages, 10.00.

ON DESERT TRAILS by Randall Henderson. Founder and publisher of Desert Magazine for 23 years. One of the first good writers to reveal the beauty of the mysterious desert areas. Henderson's experiences, combined with his comments on the desert of yesterday and today, make this a MUST for those who really want to understand the desert. 375 pages, illustrated. Hardcover. \$6.95.

Letters to the Editor

Sweet Memories . . .

While on a trip to Anza-Borrego Desert, I picked up the March issue of Desert. The picture of the sugar tongs brought back old memories. They were used in the sugar cube bowls at Ye Alpine Tavern, which was at the end of the ride on the White Chariot on the Great Mt. Lowe Railway Incline. They may have been sold as souvenirs, but I think some may have been procured by other means.

The ride on the Chariot rose 3500 feet on a 62% grade. It was then necessary to transfer to another electric trolley car which wound its way over 20 bridges and 127 curves to the Alpine Tavern, 1100 feet below Mt. Lowe. The tavern served meals and had comfortable accommodations by day or week.

To get to the top you ascended the summit on horseback to 6100 feet where the view was an inspiring sight.

The maps today say Mt. Lowe is 5593 feet but the railway said 6100 feet so the mountains have either shrunk or they did not measure too good in those days.

ROBIE K. BEAN,
Santa Cruz, California

Kudos For A Ranger . . .

We thoroughly enjoy your magazine and particularly articles concerning the Anza-Borrego Desert State Park. It was there we first learned to love the desert, a love which ended in our moving to the Mojave Desert.

The major reason for our desert love affair was the boundless enthusiasm and knowledge of ranger George Leetch, whom Mr. Ernie Cowan mentioned in his article, "Desert Love Story" in the February issue. George Leetch has not only a huge love for the desert, but the willingness to learn, study and discover

OUR FACES ARE CHERRY-RED

In response to the many inquiries regarding the fact the "Date-Cheese Loaf" recipe in our February, 1973 issue did not list cheese in the ingredients, we apologize for a typographical error. The heading should have read, "Date-Cherry Loaf."

everything he can about the area he patrols. He knows by their first names all the vegetation, geologic formations, wildlife, washes and even scenic views; and, what is more, he is able to communicate, if not all his knowledge, at least his interest, with the most ignorant of neophytes, such as we were fifteen years ago (and still are in comparison with him).

George's concern and interest in nature, however, does not eclipse the same kind of interest and concern in his fellow man. He has the courtesy, patience and tolerance which can teach city-dwellers more about conservation and good camping practices than all the lectures ever given. George Leetch has made more friends in his ranger career than you would really believe and what is more, has made good campers out of bad, conservationists out of litter-bugs, and desert lovers out of sight-seers.

The mention of Mr. Leetch's name in Mr. Cowan's articles may cause an influx of campers who want to meet such a fine man, and he will likely be embarrassed and flustered to find his fan club so large. But that won't keep George from doing his job in the very best way he can (and that is very fine, indeed). The good he does, for mankind and for nature in his own small and fairly secluded corner of the universe, is invaluable. Truly, George Leetch is the kind of ranger whose value can't be calculated; there are probably many more like him, working for the good of all of us, in little-seen and little-appreciated ways—and our hats are off to them. But George is tops!

MR. AND MRS. CLAUDE WOOD
China Lake, Calif.

DESERT Inspires . . .

We enjoy your magazine very much. It inspires our search for scenery as well as supplying us a great deal of pleasure in making trips to far off and remote places, all from our armchair.

GEORGE PUTMAN,
Evanston, Ill.

Time Flies . . .

It does not seem possible nineteen years have slipped by since my first introduction to the magazine. It has given us much pleasure and information of your area of the U. S. Last year, following the article in the April 1968 issue, we visited Carefree and Cave Creek, Arizona, believing we were to see some old Ghost Towns. I would like very much to live in just such a ghost town!

THADDEUS J. CZERNIEJEWSKI,
Hamburg, N. Y.

New Eastern Fans . . .

Having traveled on my first trip through Death Valley two weeks ago, I wanted to say how very exciting your magazine made the valley sound—and it was just as you said: simply breathtaking and unbelievable.

Please accept the admiration of a brand new fan of your efforts. Keep up the good work.

M. FULLER,
Fitzwilliam, N. H.

Calendar of Western Events

APRIL 28-29, DESERT GEM ROUNDUP OF ANTELOPE VALLEY, co-sponsored by the Palmdale Gem & Mineral Clubs, to be held in the Fair Center Hall, Antelope Valley Fairgrounds, Lancaster, Calif. Choice of Field Trips. Free admission, parking and door prizes.

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, FIRST ANNUAL MILLION DOLLAR GEM SHOW, L. A. Co. Fairgrounds, Pomona, Calif. Free parking, donation \$1.25. Contact: Del Smith, 544 Osborn, Covina, Calif. 91790.

MAY 12-28, 47TH ANNUAL WILDFLOWER SHOW sponsored by the Julian Woman's Club, Julian Community Hall, Washington and Main, Julian, Calif. Admission free.

MAY 19 - 20, SAN JOSE ANTIQUE BOTTLE COLLECTORS Sixth Annual Show and Sale, Santa Clara County Fairgrounds, Tully, Rd., San Jose Calif. Admission free. Sales of all types of bottles and related items by dealers. Contact: Show Chairman, P. O. Box 5432, San Jose, Calif. 95150. Phone: 408 293-6597.

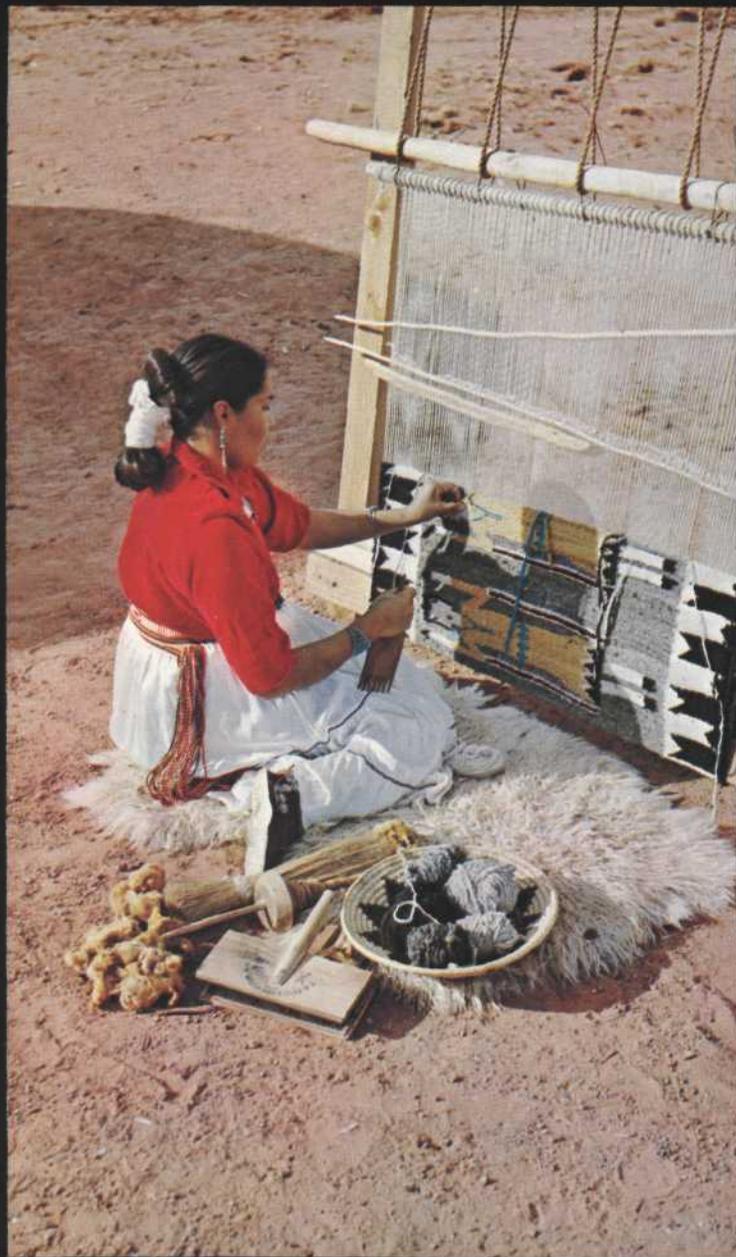
MAY 19-20, 26TH ANNUAL MAY FESTIVAL OF GEMS sponsored by the Glendale Lapidary and Gem Society, Glendale Civic Auditorium. Free admission and parking.

MAY 19-20, EIGHTH ANNUAL YUCAIPA VALLEY GEM AND MINERAL SHOW, Yucaipa Valley Community Center, First Street and Avenue B, Yucaipa, Calif. Free admission and parking. Chairman: Mr. James Wisse, 35347 Sunlight Dr., Yucaipa, Calif. 92399.

MAY 25-27, YUCCA VALLEY 23RD ANNUAL GRUBSTAKE DAYS. Horseshoe Tournament, Square dancing, Pie Eating contest, pancake breakfast, other misc. events. Accommodations for Campers or trailers or motel rooms for visitors. Contact Yucaipa Valley Chambers of Commerce, 56297 29 Palms Highway, Yucaipa Valley, CA 92284.

MAY 26-27, SIXTH ANNUAL DARWIN DAYS, DARWIN, CALIF. Four-wheel-drive country, pancake breakfast, refreshments, sales booths free. Contact: P. O. Box 115, Darwin, CA 93522.

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Navajo Weaver

Photo by Terry Alderman

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