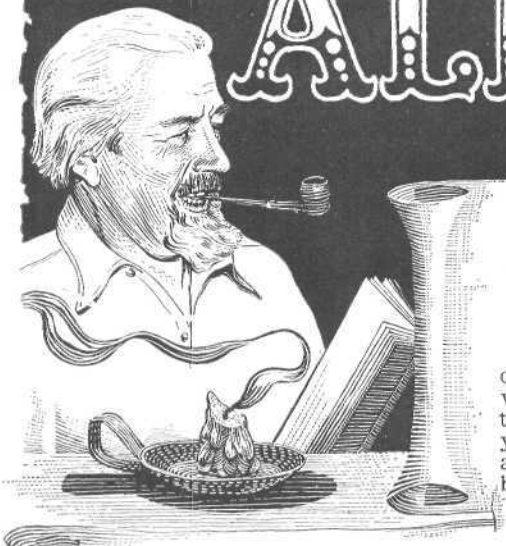
Desert

...magazine of the Outdoor Southwest

OCTOBER, 1959 . . . 35 Cents

DESERT RAT HARRY OLIVER'S ALMANAC

1888 · 1999



DESERT RAT CIRCUS

The desert is the greatest show on earth. After years as editor of the Desert Rat Scrapbook (only newspaper you can open in the wind) I have taken up the side-task of "almanacing" in the hope that I can get a little humor into the days, weeks, months and years. I will use a "circus" touch in this first effort. The heading above is good old circus type and it is printed in circus tent-pole blue.

OCTOBER 1959

The little desert critters are my clowns and that old bugaboo, the weather, is the whip-snapping ringmaster.

Indians used to broadcast weather messages by holding a wet blanket over the fire. Now we've got television and get to see the wet blanket in person.

The Indian weatherman did not send up smoke-signals in the rain — but the other Indians knew it was raining. The old Chief spent most of his time in his teepee, and he merely called in his dogs —if they were wet, he knew it was raining.

Hints for Shack & Shanty Dwellers

The Shack-and-Shanty Dwellers of which I write are our tens of thousands of five-acre jackrabbit homesteaders. They are concentrated in the mountain sides and valleys of the High Desert. Being an Old Timer, I give them helpful hints.

In baiting a mousetrap with cheese always leave room for the mouse.

* * *

Don't plant too large a garden around that shanty. Remember about the lack of water, and also remember it is not enough for a gardener to love flowers, he must also hate weeds.

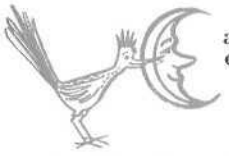
* * *

Never speak loudly to one another unless the shanty is on fire.

New Moon
2nd and 31st

First Quarter
8th

Full Moon
16th



Last Quarter
24th

A Santa Fe poetess is doing well. She sent a New York magazine three poems, and they sent her back five.

* * *

The rumor that young Jack Dill, Congress Junction prospector, made a big strike is slightly in error. Truth is his rich uncle had a stroke.

* * *

A Twentynine Palms woman gained 20 pounds while in jail. I bet she behaves herself after this.

* * *

Pat Boomer out Cactus City way started a chicken farm and wound up mining after he found gold nuggets in his rooster's crop.

* * *

The Little Desert Dramas above are "too short to get old."

THIS ALMANAC IS DATED

Some of this stuff dates back to 1888, and some of it will be knocking around in 1999. I was born in '88—the last year without a "9" in it until the year, 2000. This just proves I am an old fool—an old fool that believes in moderation in all things—including virtue. That was the code of the monks at Shangri-la and they lived for hundreds of years. Maybe it'll work for me—it has so far.

Old Whiffletree, ex-stagecoach driver, says: "My philosophy—never go see a doctor, but when the doctor has to come to you—then LISTEN!"

Desert

. . magazine of the

OUTDOOR SOUTHWEST

Volume 22 **OCTOBER, 1959** Number 10

ABOUT THE COVER . . .

. . . When autumn comes to the Circle Cliffs Country of southeastern Utah, the cottonwoods seem to absorb the golden glow of the spectacular canyon walls. Soaring, weathered and golden in reflected light, these rock walls provide a never-to-be-forgotten background for the lovely and familiar trees. Photographer Josef Muench took this picture in spectacular Harris Canyon, a tributary of the Escalante River.

Publisher's Notes . . .

Two old friends who have appeared in *Desert Magazine* in earlier years return this month. Harry Oliver, an interesting genus of Desert Rat, appears on the opposite page, and John Hilton, author, painter and raconteur, starts a four-part series on page six.

* * *

Harry Oliver's Almanac, a collection of whimsy, philosophy and fantasy, is no doubt stolen from his own famous *Desert Rat Scrapbook* (the only five-page newspaper in the world).

Oliver, once a Hollywood art director with such titles as "The Good Earth," "Ben Hur," and "Viva Villa" to his credit, has been a desert dweller for many years.

Harry's Almanac will appear in *Desert Magazine* as long as we can stand him, or he us.

* * *

John Hilton, a loyal alumnus in *Desert's* school of authors, is starting this month a series on his recent trip to Baja California. Next month's front and back covers, painted by Hilton, will be of two Baja California scenes.

* * *

It is encouraging to see so many early Christmas shoppers putting in their orders for *Desert Magazine* gift subscriptions for friends and relatives. Our Circulation Department asks me to distribute this word to the many *Desert* readers who have written in, asking for Christmas order blanks: as usual, a large general mailing, providing forms for ordering gift subscriptions, will be sent out soon. Your special Christmas subscription blanks should reach you within the next two weeks.

The activities, to date, of the "early shoppers" indicates a record-breaking Christmas season for *Desert* and thousands of soon-to-be new members of the *Desert* family.

Thank you,

CHUCK SHELTON
Publisher

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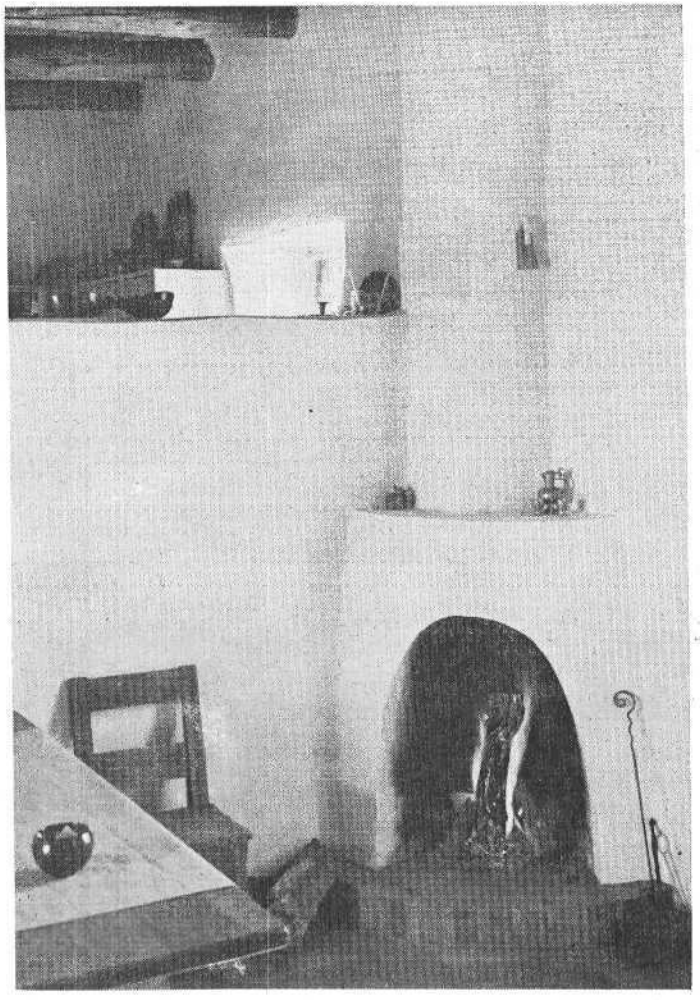
New Mexico's *Distinctive* Fireplaces



THE TRADITIONAL CORNER FIREPLACE ABOVE IS IN THE 150-YEAR-OLD HOME WHICH ALBUQUERQUE BUILDER ROBERT KOEBER RECONSTRUCTED FOR HIS OWN RESIDENCE. KOEBER KNOCKED OUT TOP PART OF WALL AT LEFT WHICH SEPARATES THE KITCHEN AND DINING ROOM.

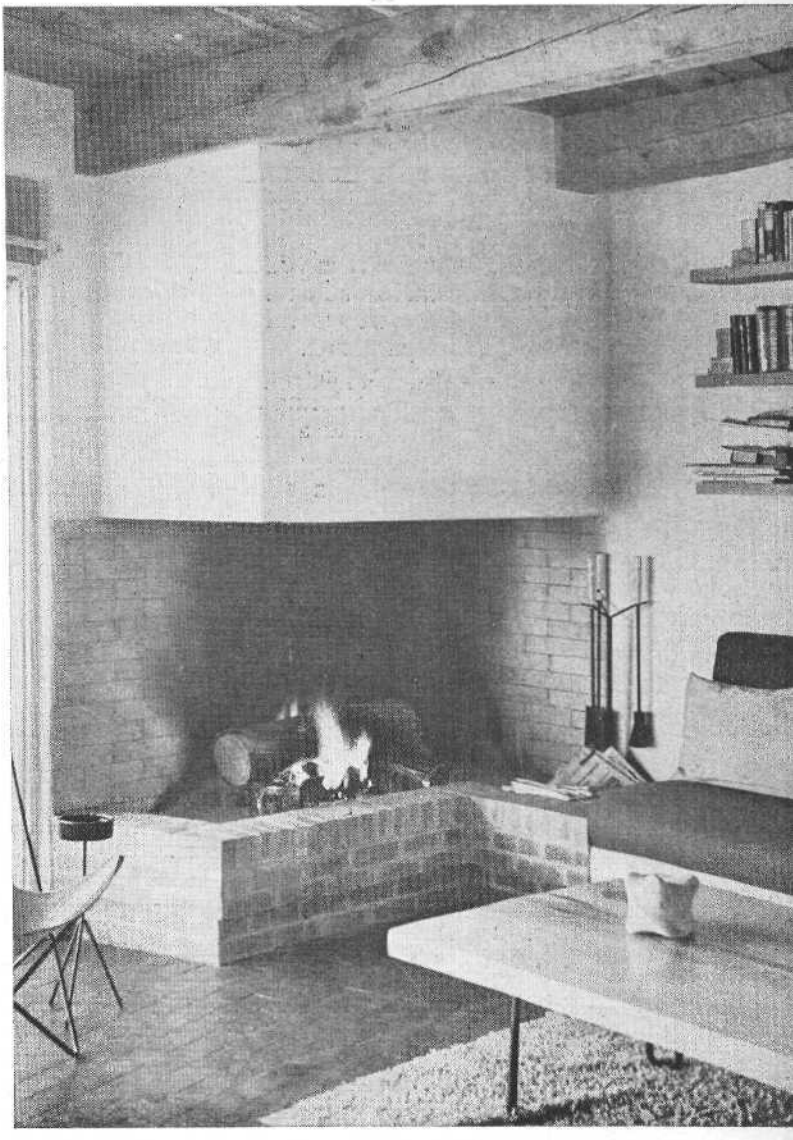
. . . a fireplace adds warmth to the home-- a warmth that pleases the spirit as well as the body . . .

By AMY PASSMORE HURT

A FIREPLACE IS AS necessary to a Southwestern home as the roof itself. Besides being functional the fireplaces shown on these pages enhance the warmth and charm of the Spanish-Colonial or pueblo style homes of which they are a part.

In New Mexico — more than anywhere else — the traditional fireplace often is built in an angle formed by two walls. The corner fireplace traces its beginning to pre-American times along the Rio Grande Valley, was copied by Spanish explorers, and then by the later Americans, from the pueblo Indians.

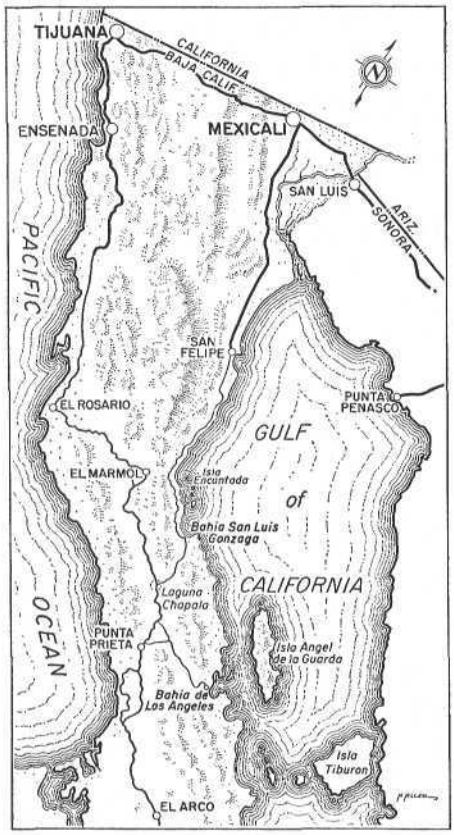
Early fireplaces of this type were made entirely of adobe and mud. Although native Indian or Spanish-American masons are usually hired to construct them, modern materials such as fire clay, fire brick and flue-liners, are frequently used. When plastered, these fireplaces can't be distinguished from their early prototypes.—END.



AT RIGHT IS A MODERN VARIATION TO THE TRADITIONAL CORNER FIREPLACE—IN KEEPING WITH THIS CONTEMPORARY NEW MEXICO HOME'S SOUTHWEST MOTIF. UPHOLSTERED BENCH AGAINST WALL AT RIGHT IS CONTINUATION OF FIREPLACE BRICKWORK.

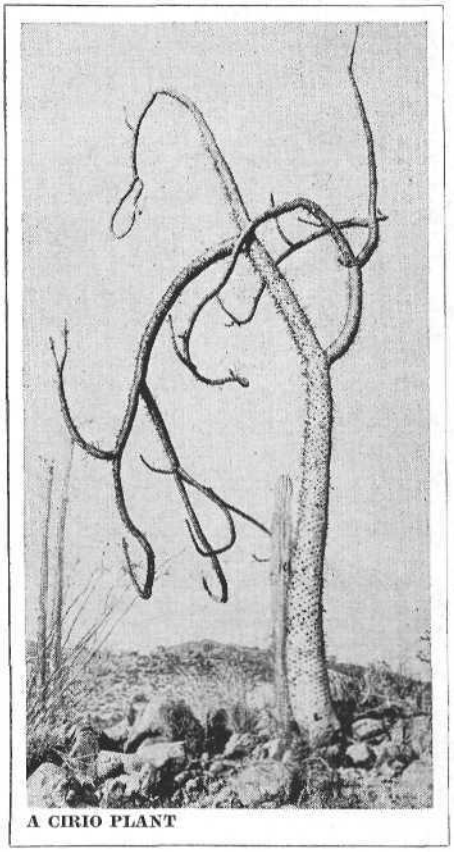
PHOTO ON OPPOSITE PAGE SHOWS MUSIC ROOM IN THE WALTER KELLER HOME IN ALBUQUERQUE. SIMPLE LINES OF THIS FIREPLACE HARMONIZE BEAUTIFULLY WITH BEAMED CEILING, POLISHED BRICK FLOORS.

To the Bay of the Angels



Part I of a
four-installment account
BY
Artist-Writer
JOHN HILTON
of his most recent travels
and explorations
IN
Baja California

NEXT MONTH:
Part II: Bahia de Los Angeles
And on Desert Magazine's covers, in full-color reproduction, Hilton's paintings:
Whispering Canyon
and
Bahia de Los Angeles


A CIRIO PLANT

"IN THE GULF there is an island, on the island is a flat-topped mountain, and on the mountain is a cloud."

It was a Yaqui Indian speaking. A group of us were seated around a campfire high in the Sierra Madre of Sonora. We had been swapping experiences, and this man wanted to prove to me that during his work as a commercial fisherman he had been to a certain spot on the Baja Coast.

"And the cloud rotates in a clockwise direction," I added.

My Yaqui friend looked up and smiled. "He has been there, *mi amigos,*" he said to the others around the fire. "He has been to Bahia de Los Angeles, and has used his eyes or he would not know that the cloud turns. This man will go back to the bay or wish he could for the moving cloud has cast its spell. There are people who go to the bay for a day or two and never go back, they do not look up and see the cloud. They only see the fish they catch, the food they eat, the money they spend, the miles they travel. They do not see the cloud and the spell of the place is not upon them. They might never come back."

Then my friend launched into a long account of the difficulty of reaching the bay by sea from the mainland port of Guaymas—the sudden blows that come up out of a clear sky, the treacherous currents offshore from Tiburon. But despite all of this he felt that each trip had been worth it.

I, naturally, had to tell the group of the road down to the bay—the worst and yet the most interesting route I have ever driven.

Ensenada is the natural take-off point on this road south. It is good to pick up supplies as well as some Mexican money here, although U.S. currency is accepted all down the way if it is in small bills. One should have a tourist card to go below Ensenada, obtained at Mexican Consulates in the U.S., at the border in Tijuana, or at the office of immigration in Ensenada. The latter keeps odd hours, and time can be saved if the cards are bought before reaching Ensenada.

The pavement ends where the first real Baja desert begins. On the banks of the canyon, at this point, are seen the first good examples of the myrtillo cactus which grows in great clusters of pipe-organ-like stems, and bears small daisy-like flowers and berry-like purple fruits.

The graded but washboard road follows the coastal plain down to El Rosario through the cultivated desert communities of Colonia Guerrero and San Quintin.

South of San Quintin, civilization thins out and the first giant cardon cacti begin to make their appearance. This used to be a terrible stretch of road, but is much improved now. Side-roads running down to the Pacific every few miles beckon to those who are not in a hurry, and like to explore. The traveler with time to follow these trails should have Gerhard and Guelick's *Baja California Guidebook* in the glove compartment.

At last the road leaves the sea and starts a long, winding climb onto a high flat-topped mesa. Beyond the southern end of the mesa the trail plunges down a slope that seems to have no end. When it does level off, you are at the village of El Rosario. This is the last genuine agricultural community for over 200 miles. It is also the last dependable supply point for gasoline until Bahia de Los

Angeles. The telephone line ends at El Rosario, and the really rough road begins.

Mrs. Espinoza, who has the second business on the left, sells groceries, cold drinks and gasoline. She also has a service unique in all of Baja California. She speaks excellent English and likes to keep track of all tourists who pass that way. She keeps a register in which those who pass sign their names and list their home addresses, date of arrival in El Rosario, destinations and approximate date of return.

Mrs. Espinoza is not nosy; she acts as a sort of clearing house for all American tourists. One may leave messages with her for friends that are coming later, or ask about friends who have gone ahead, and she can furnish the details. On my last trip down I was traveling with my daughter, Sharon, in the station wagon loaded with supplies for the summer for four (my wife, Barbara and son, Bill had gone on by plane). We stopped and "checked in" with Mrs. Espinoza and got the latest news of friends who had gone ahead and were already down at the bay.

The road up El Rosario wash is no bed of roses—it is a bed of dust. Once this land was under water, and this dust is the ancient silt of a sea bottom. It is fine for growing corn, beans, melons and squash, but it can hardly be recommended as a highway. It is one of those things one just goes through in order to reach his destination.

The First Cirios

The road was a bit better after it left the wash and started climbing a side arroyo, at least the dust was not so deep. Here were the first cirios growing in a veritable forest with cardon cacti. The cirios are related to the ocotillo botanically, but not in appearance. They look like 40-foot carrots that have been uprooted and replanted with the tops down. Some have a diameter of more than three feet. From their root-like tips grows a bouquet of creamy-white ocotillo-shaped blossoms. Here, also, are hundreds of red-spined barrel cacti, the hairy organ pipe cacti, and many others. Moist Pacific fogs reach far up this canyon and drape the cirios with trailing lichens that resemble Spanish Moss, adding to the already fantastic appearance of the landscape.

As we rode along, I wondered if we would be able to make the hill of the turquoise mine. We had been told that there had been cloudbursts and the road was a mess. I remembered from other trips the steep, winding route that climbs the bare mountain at an almost impossible angle, and mentally held my breath.

Finally, we came to a sharp bend in the road, and dead ahead was the hill. It looked as steep as ever until we got right to it. Then we saw that the first heart-stopping pitch had been changed. A switchback had been added. We got out to check the tires, water, gas and oil. We rearranged the load a bit to equalize the weight on the steep rise. Then we climbed in, threw the station wagon in low gear and started up. We rolled easily to the top and were agreeably surprised and relieved.

Turquoise Miners

At the turquoise mine, I stopped to say hello to the workmen who take care of it for Mr. Vega. The men allowed us to gather matrix specimens of turquoise from the mine dumps which come right down to the road. I remarked that the road was not nearly so bad as we had been led to believe, and the miners shook their heads and informed us that the bad part was just ahead.

It was! It took us the next two hours to travel six miles. The mother rock of the mountain had been bared by the rains. Driving was a matter of easing the vehicle from one rock mass to another.

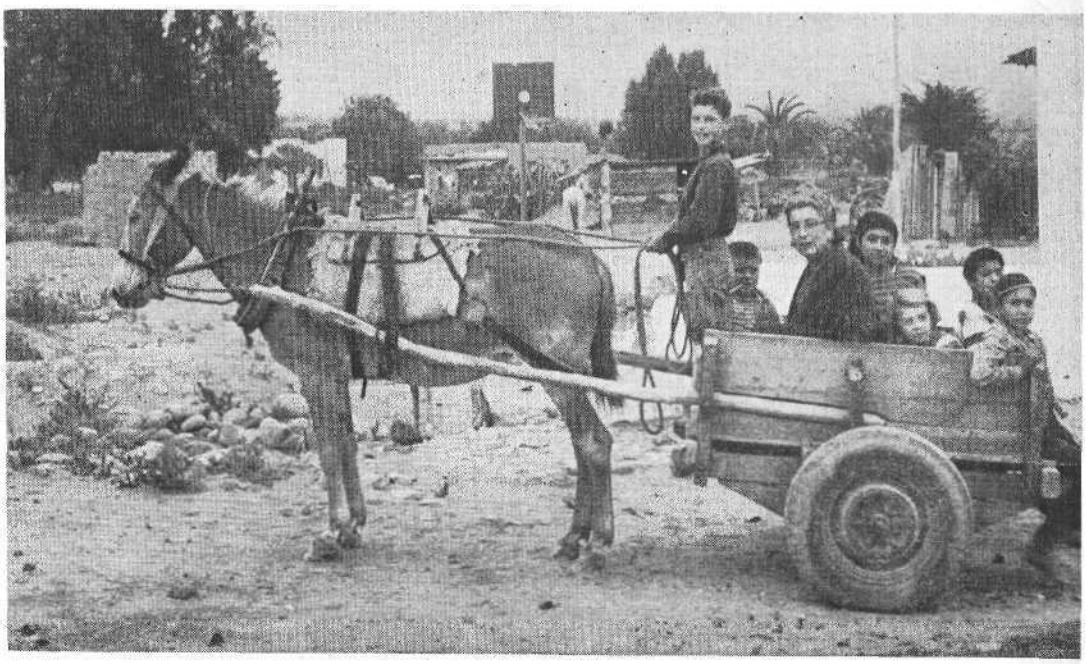
When we reached El Arenoso, at the foot of the grade, we were ready for a breather and a cold drink. Everyone there assured us that the worst was over. Sharon drove some stretches that afternoon as we reached better ground. Five miles beyond the station of Arenoso we stopped to gather some jasper specimens. Here the almost flat desert is covered with pieces of jasper ranging in size from a marble to a cocoanut. Most of it is in shades of red, but some is shot with streaks of white chalcedony or pinkish inclusions. There will certainly be enough cutting and polishing material here for many a day.

El Marmol By-passed

The weather became warmer as we passed Penjamo and El Aguila. We stopped for another cold drink at the friendly little ranch of San Augustin. The sun was still high so we decided to go on, although it was a temptation to stay and eat with these people who serve very good food. The left road-branch leads to El Marmol, the onyx capitol of America, but it is 10 miles farther and we were too loaded to collect onyx. For rockhounds, this side trip is worth while as there are tons of beautiful scrap onyx to pick over.

The main road climbs from San Augustin past Agua

THE EL ROSARIO SCHOOL BUS.



A WONDERLAND OF WIND-CARVED GRANITE AND WEIRD DESERT PLANTS.

Dulce, an abandoned cattle ranch, and up into a tableland of eroded granite rocks that take the shapes of animals and monstrous people. Imagine the wonderland of rocks in Joshua Tree National Monument, add the cardon cacti, the cirios, the hairy organ pipe cactus, and you have a picture of this interesting tableland. At its southern edge appears the first blue palms, as the road drops into the arroyo of Catavina.

A few miles beyond this spot we made camp for the night, cooked dinner and went to bed early for we hoped to arrive at the Bay the next day.

Cactus Fruit

There is an unmatched quality to the morning light in this part of the peninsula. A blazing dawn awakened us early in our camp amid towering cirios and cardons. We found some ripe red fruits on a nearby cluster of the carambullo; they were good appetizers.

With breakfast over we started down the road. There were just two more dreaded spots to pass. The first one came in the first hour. It was the grade of Jaraguay—a very long and narrow incline, but not as steep as the slope to the turquoise mine, and certainly not as rough. Jaraguay's main danger is in meeting another car or truck coming down the grade. We were lucky—there was no traffic. From the summit we could look away to the southeast and recognize certain mountain peaks of our "promised land."

The road was far from good, but we averaged about 10 miles an hour from the summit to the edge of the Laguna Chapala Seca, our next dreaded spot. Rains had washed terrific gullies across the road in places, but we got over them by using patience and common sense.

Laguna Chapala is a dry lake as flat as a dance floor. It is the fastest piece of road in Baja California, but to reach it one must go through a baptism of burning dust. Here again we were lucky. By taking all turns to the left we skirted the worst of the dust, and—wonder of wonders—we did not have a tail-wind. On previous trips there had been tail-winds no matter which direction I traveled on this stretch, and the dust was carried ahead of the car faster than I dared to drive.

At Grosso's Ranch, at the edge of the dry lake, I turned the station wagon over to Sharon with instructions to dust it off. We attained the unimaginable speed of 40 miles per hour on that natural race track, but the excitement was quickly over, and we were back on the rutty bumpy road again as soon as we crossed the lake.

A couple of hours later we had our first and only flat tire. The change took over an hour because we wanted to travel with a workable spare. The temperature was high and our spirits were low, but an hour after we got going again we came to the turn-off where one fork leads to Punta Prieta and the left branch goes to Bahia de Los Angeles.

We spelled off each other driving, for we were both tired from fighting the steering wheel. Every mile we went seemed to get easier. We passed the old ghost town of the Desingano Mine. From there we dropped into the "Valley of the Giants" where all of the cacti and cirios are oversize. Then, at last, we crossed the old road from Punta Prieta and turned left on the "Home Stretch."

The last 25 miles was a breeze. There were times when we got up to 15 miles per hour. The temperature dropped and our spirits rose. Each turn in the road and every cactus was now a familiar friend.

The Blue Gulf

The trail got a bit worse as we ground up a rather steep hill, but once on top we could see the glittering sapphire expanse of the Sea of Cortez.

In the distance was a range of mountains on the fabled Angel de la Guarda Island. Rising between La Guarda and the bayshore, on a small point known as Smith's Island, was the flat-topped peak—El Coronado—with a cloud resting on its summit. From our vantage point we could not actually see that it was, but we knew the cloud was rotating clockwise.

It was like coming home when Sharon pulled up in front of the Antero Diaz establishment and we were greeted by my wife, Barbara, and son, Bill. The airplane ride down had taken them two hours and 20 minutes. They had missed all the dust, rocks and heat, but they also missed the unreal beauty of El Rosario, the turquoise and jasper collecting, the friendly folks along the way, the forests of cacti and cirios, the glory of a campfire in the early dawn, and cactus fruit before breakfast.—END

Desert Quiz

Here are 20 steps to a better understanding of this unique land we call the desert. These questions cover a wide range of subjects—history, Indians, geology, wildlife and others. A score of 12 to 14 correct answers is good, 15 to 17 is excellent, and 18 or over is exceptional. Answers are on page 26.

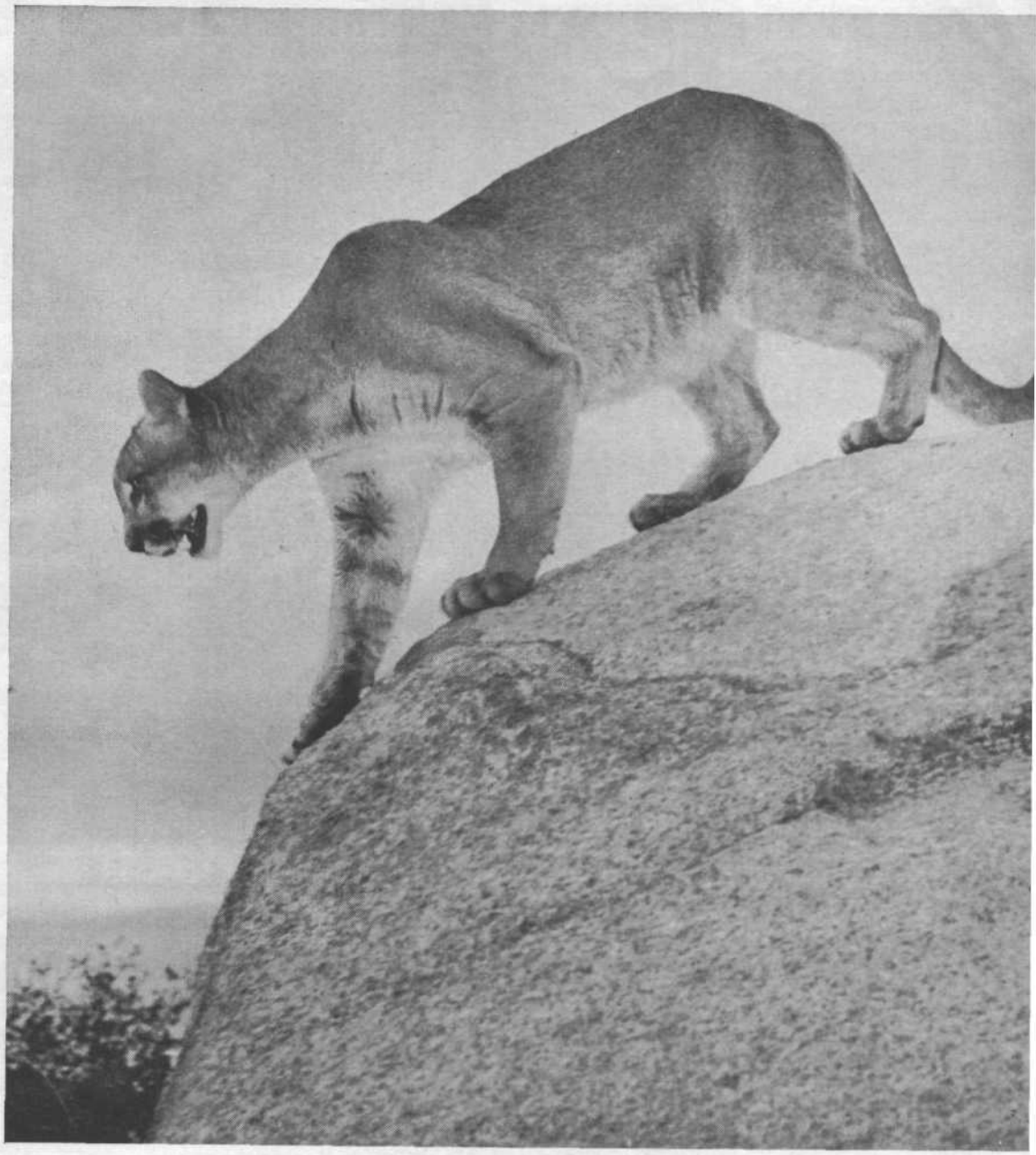
1. Leader of the first expedition to navigate the Colorado River through Grand Canyon was—Powell___. Sutter___. Bill Williams___. Fremont___.
2. The river flowing near Carlsbad, New Mexico, is the—San Pedro___. Pecos___. Rio Grande___. San Juan___.
3. One of the main sources of food for early Indians living on the Southern California desert were beans from the—Mesquite tree___. Ironwood tree___. Smoke tree___. Joshua tree___.
4. Ganado is a Presbyterian mission on the reservation of the—Navajo Indians___. Yumas___. Paiutes___. Papago___.
5. Color of azurite is — Green___. Red___. White___. Blue___.
6. The Mountain Men who trapped the Western territory during the middle of the last century derived their income mainly from the furs of — Goat___. Beaver___. Mink___. Coon___.
7. Establishment of the State of Deseret was once the fond hope of the —Apaches___. Mormons___. Spaniards of New Mexico___. West Texans___.
8. Blossom of the nolina is—Yellow___. Crimson___. Blue___. Creamy white___.
9. Prehistoric Americans ground their meal in a — Metate___. Atlatl___. Mescal pit___. Kiva___.
10. If you drove from Tucson to Guaymas, Mexico, by the most direct route, you'd cross the International border at—Mexicali___. Tijuana___. Nogales___. El Paso___.
11. The Gulf of California was once known as—Sea of Cortez___. The Tranquil Lake___. Sierra Ocean___. Gulf of the Cactus Shores___.
12. The historian who translated and published the diaries of Juan Bautista de Anza was — Lockwood___. Hunt___. Bolton___. Martin___.
13. Grand Falls is on the — Gila River___. Salt River___. Little Colorado River___. Mojave River___.
14. The Kaibab squirrel found in the forest of the same name, is identified by its—Black tail___. Brown tail___. White tail___. Red tail___.
15. The roadrunner does most of its hunting—On the wing___. In trees___. Afoot___. In running water___.
16. Executed for his part in the Mountain Meadows Massacre was—Butch Cassidy___. Billy the Kid___. John D. Lee___. Walkara___.
17. Dick Wick Hall sold his "laughing gas" at—Yuma___. Winterhaven___. Salome___. Kingman___.
18. Mogollon is the name of an Arizona — Opera company___. Dam___. Mountain barrier___. Hawk___.
19. William Lewis Manly told of his desert experiences in the book — *West of the River*___. *Into the Unknown Desert*___. *Death Valley in '49*___. *Trials of a '49er*___.
20. Fiddleneck is the common name of a desert — Snake___. Wildflower___. Bird___. Tree___.

October Prize Winners

BEST PHOTO

"Mountain Lion"

By **Stewart Cassidy**
of Prescott, Arizona



BEST POEM

"The Joshua and the Poppy"

By **James Rhodes**
of China Lake, California

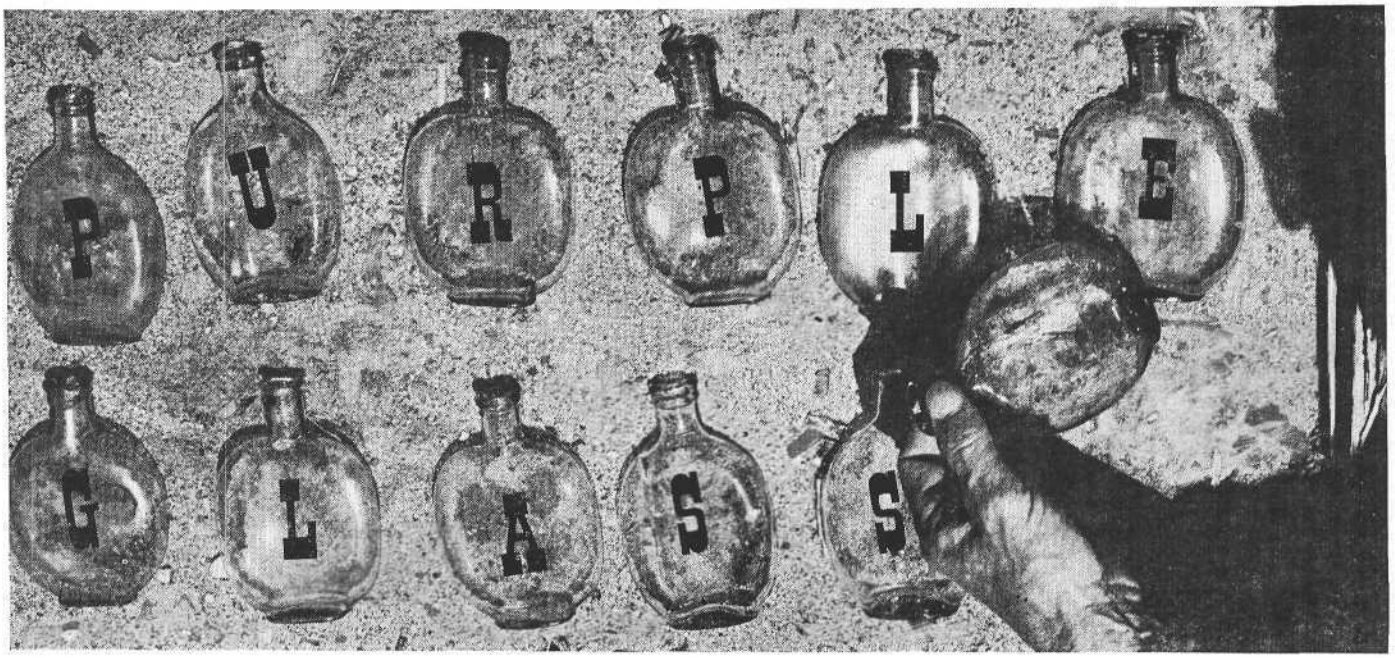
A tiny poppy flower
Grew by a Joshua tree
Though the shade felt cool and good,
She sighed regretfully,

"I might as well be dead,
Who'll ever notice me?
I'm just a microscopic speck
Beside you, Joshua tree."

Then the Joshua said in comfort tones
To the poppy in the dew,
"Though people stare me in the eye,
They bow to look at you."

(For Poem-of-the-Month and Photo-of-the-Month contest rules, please see Page 38)

THERE'S NO HOBBY QUITE LIKE THE DESERT HOBBY OF COLLECTING - -



By HARRIETT FARNSWORTH

WHEN I FIRST took up the hobby of "purpling" glass, I went about it sanely enough. Here and there on desert treks I picked up old bottles already purpled or tinged with color by the sun's intense rays. I stopped to admire old-timers' collections, devoured their stories about this glass piece and that, then departed with an eye cocked for glass at my next stop.

Then the hobby took a firmer grip. When I discovered a sugar bowl, pitcher, cruet set, or anything else made of glass that appeared to be old, I tried to buy it, or even swap for it. If this failed, I found myself sorely tempted to steal it. In time my friends and relations acted as though their glassware wasn't safe when I was around, and it may be that it wasn't. I was developing "itchy fingers."

Purpling was becoming a pretty expensive hobby, too. Glass invaded my thoughts everywhere I went. When I discovered a coveted piece, I left no stone unturned in my effort to acquire it, and often went home with pocketbook empty. Securing the glass wasn't the end of my cash outlay. Often, after paying more than a piece was worth in some shop far from home, the treasure had to be packed and shipped. On several occasions glass pieces arrived home in splinters. Did the postal authorities recognize the value of that old pressed glass so roughly handled in transit? They did not, until I purpled some broken pieces, took them back to the post office and showed the folks there the rare beauty in these fragments.

Failures

I had my failures, too. Some pieces, after months of sunlight exposure, remained completely unchanged in color. As I acquired more glass, I also gathered more facts about glass.

Purpling is simply a matter of chemistry. Glass is made from molten sand which, more often than not, contains iron and other impurities. These give the glass an undesirable greenish tint. To offset this, a decolorizing agent is used by glass manufacturers—and the glass thus produced has a transparent colorless appearance.

Prior to 1915, manganese dioxide was the primary decolorizing agent. When such glass is exposed to the sun's ultraviolet radiation, there is a chemical breakdown and the hobbyist's coveted violets and amethysts result—the intensity of color dependent upon the total amount of manganese present, and length of exposure to the sun's rays.

The first war with Germany, at the time chief exporter of manganese, changed the glass picture. Selenium replaced manganese as the chief decolorizing agent for glass manufactured in the U.S. The selenium-treated glass pieces develop a brownish straw color when subjected to the light of the sun. All modern glasses, with few exceptions, are made with selenium and therefore will not develop the more highly prized bluish casts when exposed to sunlight.

Modern Glass

Since most of today's glass contains a varying percentage of iron, a diversity of color varying from straw to amber is produced when the glass is exposed long enough to the sun's rays. The density of color depends upon the amount of iron present and the state of oxidation.

Highly oxidized iron—ferric iron—gives off the lovely amber and straw colors. Highly reduced iron—ferrous iron—imparts the greenish and brownish shades. An old-timer I chanced upon had a striking example of the latter.

While living on a ranch in the desert, she placed a cherished clear glass flower basket under a bush and promptly forgot about it. Ten years later she stumbled across it, and what a surprise! The little basket had turned to the deepest, clearest and richest of browns imaginable—a priceless treasure for her glass collection.

Like any novice with a new hobby, I made my mistakes. I bought many beautiful but "worthless" pieces—specimens that would not purple. It would take an expert to pre-judge some unexposed pieces. That's when purpling became as thrilling—and expensive—as betting on the horses—until I learned another secret that took doubt out of the venture.

If a bottle or dish containing manganese is filled with

slack lime and held before a strong light, it will cast faint (sometimes strong) traces of blue around its edges and seams. This same test seldom fails if the piece is held against a dead-white background in strong sunlight.

A Discovery

Most hobbies teach quite a few facts the hard way. In time I learned to shun cut glass; expansion under the sun's hot rays and contraction at night invariably cracked specimen after specimen. After a treasured old bottle popped, I learned to remove all stoppers and to turn all bottles and concave pieces upside down to keep them from collecting moisture which, in freezing weather, would be sure to play havoc. Another trick is to place sand around the outside of the glass piece, leaving the inside free to receive the sun's rays. This reduces the extreme shock of temperature change. One of the reasons cut glass breaks so readily is because of inferior annealing of some of the heavier pieces.

From its slim beginning, my glass garden began taking on interesting proportions. Then came the worry of vandals and souvenir collectors when I wasn't at home. I took a hint from more advanced collectors who put their glass on rooftops under wire mesh to keep the wind from blowing it down. A lot of trouble? Yes, but worth it when I look over beautifully colored pieces that may never be duplicated —hobnail, peacock eye, giant's thumbprint, horn-of-plenty and rare tree-of-life patterns. After weeding out the specimens that would not color, I discovered I owned an enviable collection.

Will glass purple elsewhere other than under the desert sun? Yes, despite the widely-held but erroneous belief that it will not. It just happens that because of our over-abundance of sunlight in the Southwest, glass will purple here in quicker order.

The hobby of purpling old glass—intentional or otherwise—is widespread throughout the world. In watery New England's sunlight, some windows in Boston are colored to unbelievable shades of lavenders and purples. Kansas City, in 1915, turned up some glass door knobs that resembled huge chunks of pure amethyst. Close to the Pacific in smoggy Hollywood, old street lamps in some districts have turned to lovely lavender colors.

GLASS PIECES UNDERGOING COLOR TRANSFORMATION BY SUN'S RAYS.

One compilation of America's 10 most popular hobbies placed the collecting of old pressed glass as second on its list. Purpling, it seems, will soon become a hobby as rare as the old glass itself, and future generations may hear of it through their grandparents, and see exciting collections only in museums.

But, some glass manufacturers still use manganese as a decolorizer, and the purpling hobby's hopes for a long life rest with them. One firm, Brock Glass of 202 Santa Fe St., Santa Ana, Calif., uses manganese in its milk glass and opal glass. Brock's crystal glasses are decolorized with selenium and cobalt.—END

A Glass Expert's Comments

Desert:

I received the pre-publication draft of Harriett Farnsworth's article on purple glass and read it with a great deal of interest. I found this manuscript true in fact, and do not believe anyone can be led astray by following the suggestions made by the author.

One interesting point: she mentions a test for determining if a glass piece will turn purple under the sun's rays (filling the vessel with slack lime, etc.). This is a new one on me, but sometimes tests unknown to scientists are discovered by laymen.

It is my belief that a collector can achieve excellent results with this hobby if he concentrates on learning the difference between potash-base and soda-ash fluxed glass. This is a difficult assignment. Potash glass is more likely to contain manganese and therefore more likely to "purple." Soda lime glass is used for bottles and cheaper glassware. Sunlight will turn it a straw color and sometimes almost an amber, depending on amount of selenium used.

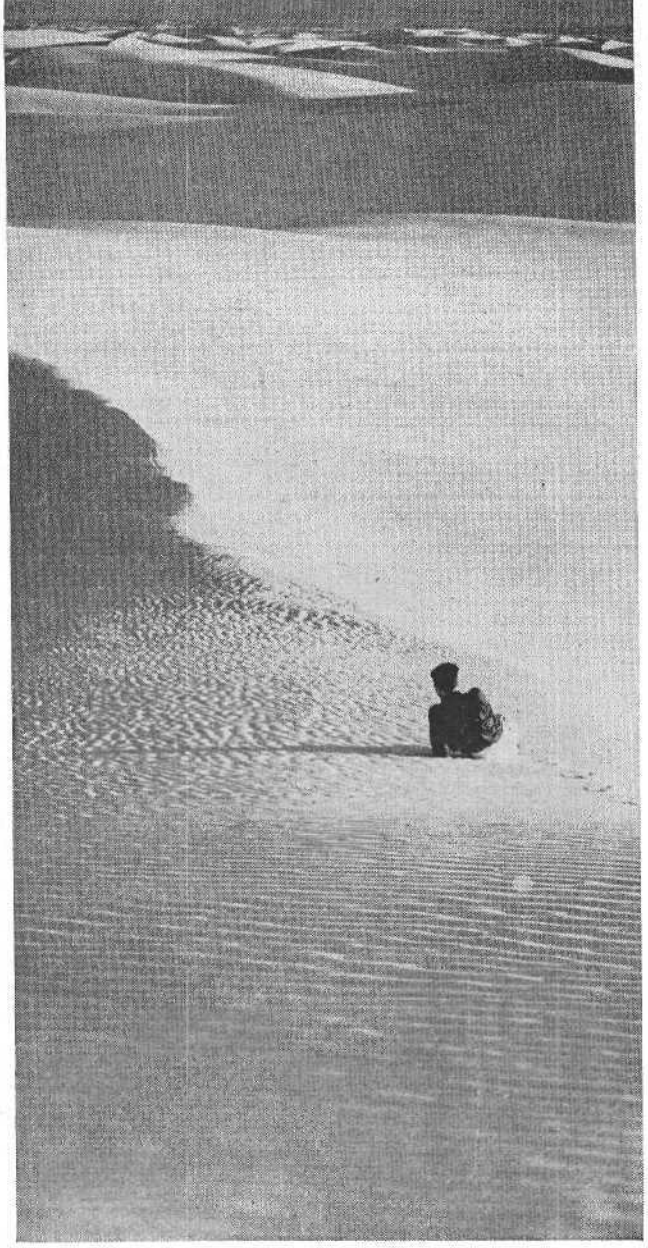
It would also be valuable for an amateur collector to be able to distinguish glass made in a pot from that manufactured in furnaces. Pot glass was common up to 1915. Such glass, therefore, is more likely to contain manganese.

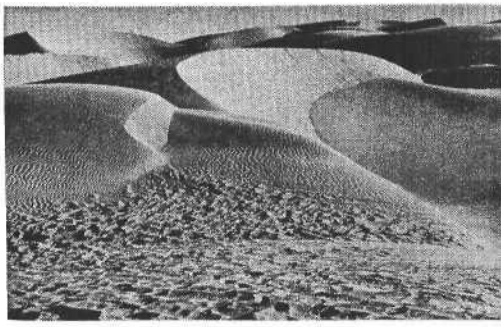
I could go on and on, but after looking at glass for 50 years, I still do not regard myself expert enough to distinguish pot glass from tank glass. Some people say they can tell by the feel.

A simple skill the amateur collector can learn is determing—by the "ring" of glass struck with a pencil or similar object—if glass contains lead in its composition. Glass that does must be decolored with manganese (and will "purple"). Lead glass produces a bell-like ring when struck. It is impossible to decolorize lead glass with selenium. Lead and selenium combine to turn glass brown.

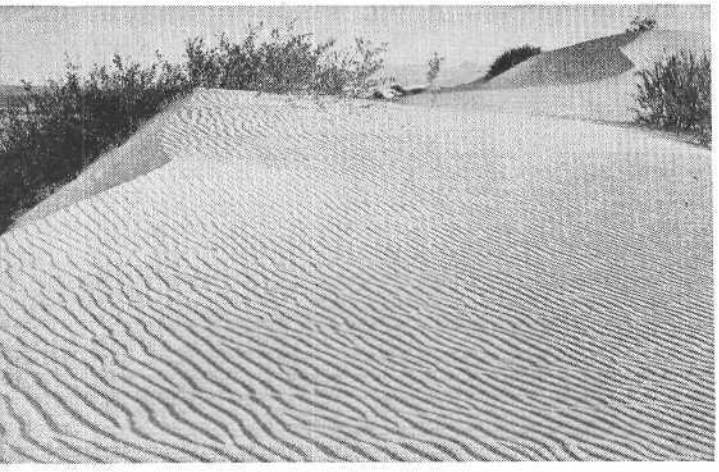
I believe the Farnsworth story on purple glass will be read with much interest for the purple glass hobby has many devotees. If at any time I can be of assistance to you or your readers, please feel free to call on me.

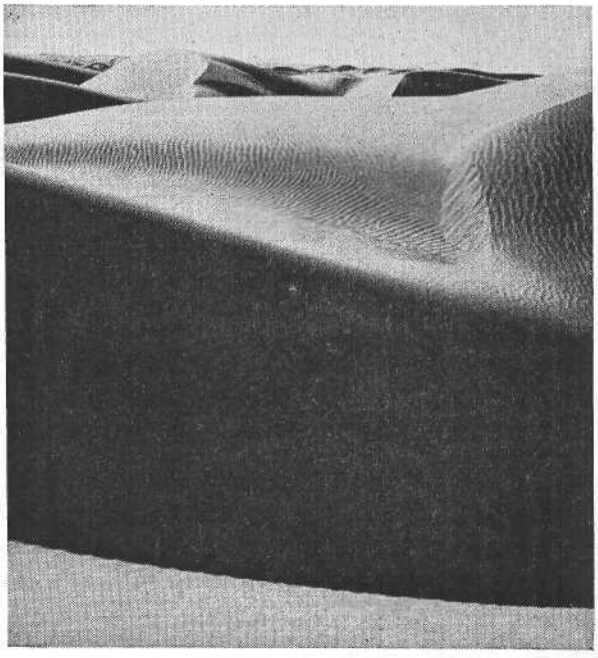
W. J. MATHEWS, general manager
Brock Glass Company, Ltd.
Santa Ana, Calif.





SAND.





What is sand? Where does it come from?

By EDMUND C. JAEGER*

ANYONE WHO has traveled over sand-desert plains or across great areas of dunes when a gale is blowing has found it easy to convince himself that a sandstorm is one of the most awesome phenomena of Nature. I have purposely braved such storms to experience the drive and grand push of the wind, witness the cutting power of sand in motion, hear the shrieking clatter of swirling sand-laden gusts. While walking, I must brace my body to maintain a standing position, and turn my face away from the direction of the wind to protect my eyes and skin from being cut by the sharp-edged sand grains.

Wrote J. Walther, the great German student of Old World deserts, of the sandstorm's fury:

"In such cases the ground becomes alive, everywhere the sand is creeping over the surface with snakelike squirmings and the eye quickly tires of these writhing movements of the currents of sand."

While not peculiar to deserts, sand is always associated in the mind with desert lands. This is probably due to the conspicuousness of large accumulations of sand in dunes or in the broad clean bottoms of wadis (washes or dry stream beds). Moreover, in deserts the vegetational cover is so thin that sand is much more readily seen than in moister lands.

The very finest soil particles of both deserts and moister lands are impalpably fine (about 1/1000 inch in diameter) —this we call dust. Such is the substance of clay and adobe. If mixed with organic matter from decaying vegetation and small amounts of sand these minute particles form loams; if without sand they may constitute loess (lo-es) such as there is in China and the Mississippi Valley.

When dry, dust furnishes "the stuff" for the fierce black dust storms of the vast Sahara, or for tornillos ("dust devils")—whirling tall spires of dust seen on hot desert days. Some of the dust storms of the Sahara drop fine silt as far away as England, France and Germany more than 2000 miles distant.

The term "sand" is reserved for fine particles of hard minerals larger than dust and up to two millimeters in diameter. This sets it aside from gravel whose individual grains may be as large as peas. Sand is only readily picked up by winds traveling 25 miles or more per hour; gravel, even the finer grades, cannot be air-transported until the winds register a velocity of 35 miles or more per hour.

Sands usually consist of the debris of hard quartz-bearing rocks such as granite, but they may be derived from softer gypsum or lime rocks. Because made of many different kinds of rocks, sand takes on many different colors: black from basaltic rocks, white from gypsum rocks as at White Sands National Monument, gray from granitic rocks.

Tan and red sands often bear evidence of having been externally stained by the more common compounds of iron. Magnetic black sands rich in iron are abundant along the east shore of the Gulf of California.

In all deserts (even the rocky ones with their great *harnadas* or stone fields) definite ridges and irregular hills of sand are more or less common. On the north end of the Sahara, south of the Atlas Mountains, there is an

How does life endure on the White Sands?

By EARL JACKSON*

"THIS IS ONE desert where they can always count on a white Christmas," remarked Betty as we slipped out of our shoes and stockings to cavort like children in the gleaming dunes of White Sands National Monument. Located in the Tularosa Basin of southern New Mexico, the Monument takes in most of the world's largest known surface deposit of gypsum sand.

"How could anything possibly live here?" I thought aloud, but we knew that there were many creatures and plants native to these white wastes. There is little chance at mid-day of seeing any wild residents—with one exception: the lesser earless lizard. In warm weather these energetic fellows, varying from brownish gray to nearly white in color, will occasionally be seen running from bush to bush, or taking shelter in some open rodent burrow. They seem to lead the life most any child would envy—a giant sand box to call home, and no hair or external ear openings for sand to get into, plus overlapping scales on their upper lips to keep sand out of their mouths.

Those who visit White Sands in early morning might be lucky enough to see an Apache pocket mouse. Pocket mice are an abundant clan in the western United States, but the White Sands subspecies — *Perognathus apache gypsi*—is found nowhere else in the world. Mostly nocturnal, they sometimes move about in daytime—traveling so slowly through the grasses that at first glance they are sometimes mistaken for horned toads.

Although generally described as being "white" in color, actually this pocket mouse is darker than either wet or dry gypsum sand. Individuals vary considerably in color, from almost white to the yellow normally found in another subspecies. But, they have made by far the most complete color adaptation of any mammals occurring in the White Sands.

It has long been known that desert animals are usually paler in color than those from more humid regions, because desert backgrounds are in general blanched and ashen. But, the Apache pocket mouse—"gypsi" we call it—is decidedly lighter than his Southwest neighbors.

The pocket mouse has found the forbidding desert of White Sands very much to its liking. Gypsi won't drink water even when it is available! He gets his liquids from the dry seeds which make up most of his diet. (I can't blame gypsi for not liking water, for the water in the Tula-

*Edmund Jaeger is one of the world's foremost authorities on arid lands, and the author of several books on desert subjects. His Nature articles appear regularly in Desert Magazine. Earl Jackson is Park Naturalist at the Southwest Archeological Center at Gila Pueblo, Globe, Ariz.

Jaeger: the essence of sand

enormous flattened arc of reddish brown dunes lying in parallel chains 50 to 300 miles wide and about 1300 miles long! Travelers tell of other vast dune areas in all of the great deserts, particularly in Arabia, India, Mongolia and Australia. In comparison, our American areas of wind-built sand hills and ridges are small indeed.

Dunes are formed much after the manner of snow drifts. They are started by obstructions such as rocks and bushes which cause local eddies in the wind currents. And like strange slanderous stories once begun, they tend to grow. The source of sand may be a dry sandy wash or river plain or disintegrating sandstones such as occur in the broad northern Sahara or in western Australia.

Sickle-Shaped Dunes

Where the supplies of sand are detached and meager and the winds moderate, beautiful sickle or hoof-shaped dunes of moderate height called "barchans" are formed. Here the wind blows the sand both over and around the ends of the crescents. Some of the best-formed, symmetrical and most beautiful barchans are on the east side of the Big Dune southeast of Beatty, Nevada, or on the southwest side of the Salton Sea. In the African deserts are found really remarkable barchans, many from 200 to 300 feet high, some actually near a thousand feet high!

When the supply of sand is large and the winds are comparatively moderate, irregular sand ridges transverse to the wind are formed. Good examples of such dune formations are the Kelso Dunes (*Desert* May '54) in southeastern California, and the sand hillocks of Death Valley.

Violent Winds

When really large sand deposits are disturbed by constant violent winds, they tend to form unique long parallel ridges in the direction of the wind. Because of the prevalence and great numbers of dunes of this kind, certain of the Australian arid waste lands are called "sand-ridge deserts."

Almost always the clean plantless dune surfaces are marked by beautiful fantastically arranged small furrows and ripples, each ripple a dune in miniature. On a windy day they are constantly changing. They are caused by small "friction eddies" in the wind currents.

I am always intrigued by the sight of the constant spill of wind-blown sand over the sharp backbone ridges of dunes. As long as the winds blow, there is a never ceasing transfer—yet the sharply defined edges mysteriously seem to retain their height and form.

As a rule desert dunes are quite stationary. It is the

Jackson: life at White Sands

rosa Basin's brackish pools contains more than its share of alkali.)

Gypsi is only two to four inches in length, with a tail about as long or longer. It is truly a beautiful and dainty little creature, equipped with long hind legs for jumping and standing tall to harvest or scout. Gypsi stays close to the dunes, although of necessity does a large part of his feeding near dune bases where there is more variety and abundance of plants. There is little if any plant life on the more "active" dunes—those that the wind is moving about, but on the quieter dunes are found skunkbush (*Rhus trilobata*) and yucca, and with them sometimes are other plants that can "stick their necks" out higher than the moving sand can build up around them. These include cottonwood, saltbush, ephedra and rabbit brush.

The sands ceaselessly drift northeastward, and after a particular dune has passed, it may leave behind several plants on "stilts" of compacted gypsum held together by roots. Near the edge of the dunes are gama grass hollows with low shrubs, including ephedra and skunkbush. Wet valleys occur between the dunes, the water level being so near the surface that the gypsum soil is encrusted and moist. This high water level explains how plants, and consequently animals, can survive on the White Sands.

Gypsi's Ways

Our wee mouse's burrow entrance is usually closed during the day. Since few of his enemies are active in daylight, plugging the passage entrance with sand is probably done from a survival instinct to check both heat and loss of body moisture.

After sundown, gypsi quickly opens his door and sets out in quest of food. Standing tall on stilt-like hind legs, he plucks seeds from grasses and other plants with his tiny white hands. Each hand independently stuffs seeds, as they are collected, into the cheek pouches, with motion so fast it becomes a blur. These cheek pouches account for gypsi's scientific name, *Perognathus*—Pera is Greek for "pouch" and gnathos means "jaw." "Pouch-jaw," however, is not very definitive, for White Sands pocket gophers and kangaroo rats also have fur-lined cheek pouches.

Underground Home

When gypsi's pouches appear ready to burst, he returns in early morning to his burrow and unloads the gathered harvest with sweeping motion of both hands. Then he firmly "closes the door" behind him. Try digging him out, and he throws up sand road-blocks in your way. Gypsi's burrow is almost certain to be a network of runways, with numerous storerooms in the system, and a sufficient number of "escape hatches." Ordinarily, a predator is wise to gypsi's ways, and does not waste time pawing the sand after him.

Pocket mice in the Sands, being so tiny and helpless, could never have made their way without color adaptation. Most live only a few months, as it is, with coyotes, kit foxes, snakes, owls and hawks, and even larger rodents, after them. Animals with so many enemies usually are prolific, and pocket mice ordinarily produce two families a year, with from two to eight young in a litter.

Another burrowing animal, the pocket gopher, is thought to be the most abundant mammal of the White Sands. And it is not color-adapted at all! Possibly the pocket gopher is a fairly recent comer here, since this is the extreme periphery of range for both the genus and species.

The spotted ground squirrel lives all through the Sands, and is paler and has larger white dorsal spots than others of the same species from elsewhere.

Two species of kangaroo rats, Ord's and Merriam's,

dunes of sea and lake shores that are the great migrators. However, certain small dunes in high velocity wind areas in Asia have been known to creep forward at the rate of 60 feet a day! Such moving dunes may engulf forests and even villages, then move on to re-expose them.

Desert sands not built into dunes are widely disposed in layers in plains or deposited around bushes and against steep hill and mountainsides. Near Cronise Dry Lake on the Mojave Desert is the remarkable large "Sand Cat of Cronise" composed of such wind-cast sand lying steeply on a mountainside. The huge sand mass, appearing for all the world like a sitting Maltese cat, has long been a familiar landmark. The name "Cronise" is said to have been derived from the Paiute word for wildcat.

Sandy areas, either of plains or of dunes, are favorite sites for the finding of reptiles and many other specialized animals. A number of snakes and lizards, especially the carnivorous species, are very prone to live about dune borders and lower slopes where they find good opportunity to take their prey. Special adaptations of the snout enable some to quickly shovel their way beneath the sand to elude their enemies or seek shelter from cold and heat.

Lizards which dig beneath the sand do not use their feet, but bury themselves by a wave-like motion of their lithe bodies. It is always a fascinating sight to see a disturbed Uma dive in and almost instantaneously bury itself beneath the sand. Dig it out and it immediately repeats the whole ludicrous performance.

Some lizards, such as the beautiful Colorado Desert Sand Lizard (*Uma notata*), have scale-fringes on their toes to help them in running over sandy surfaces.

Dr. P. A. Buxton tells how the marsupial mole (*Notoryctes*) of central Australia is especially adapted to living in sand. This mammal has a cylindrical body, very strong shovel-like feet, no eyes, and a very short tail. It cannot excavate definite tubular runs as do our true moles because the sand falls in immediately behind it as it digs, but it pushes forward through the loose sand just the same to seek out insects, especially ants which are its chief fare.

Sand Dwellers

On our American deserts several kinds of kangaroo "rats" (*Dipodomys*) are sand dwellers. The numerous entrances to their intricately branching burrows are seen in many places. Associated with them is the gentle but crafty kit fox, and often the coyote. The fennec fox (*Vulpes zerda*) occupies the same place in Nature in the sandy areas of the Sahara.

Certain ants are prone to seek out sandy areas, and it is amazing how far beneath the surface their tubular domiciles penetrate. Excavations 10 to 15 feet deep are not uncommon. Sand-frequenting ants often have special beards of stiff hairs to help them remove fine particles of sand from the strigil of the foreleg which is used for cleaning the sensitive antennae.

There are specialized ant lions or myrmeleonids, crickets, cockroaches and beetles dwelling in and on sands; also spiders, solpugids, millipedes and strange "tailless" whip-scorpions, all showing unique habits. Most of these creatures are active at night or just before and after sunset when the sands are still warm but not scorching hot.—END

live in the dune edges. They dig deep burrows, which help keep them from getting too hot and dry, for they too live without taking liquid water. They store mostly seeds, but eat succulent foods as a wholesome snack when such are available.

It is interesting to note how protective evolution has worked out in the Tularosa Basin. While gypsi became almost the color of the White Sands, on the beds of black lava (Tularosa Malpais) a few miles north has evolved another pocket mouse subspecies almost black in color! Other small mammals living on the malpais, such as the rock squirrel, rock deer mouse, white-throated woodrat and Mexican woodrat, also have distinctly dark coats.

Outside the Basin, only 75 miles southwest of White Sands, is the Kenzin Lava. This bed is brownish in color, and is the home of a small short-tailed pocket mouse that is brownish in color.

To Betty and me as laymen, the most understandable ideas we could get from reading technical reports by a number of competent biologists on the Basin boiled down to this:

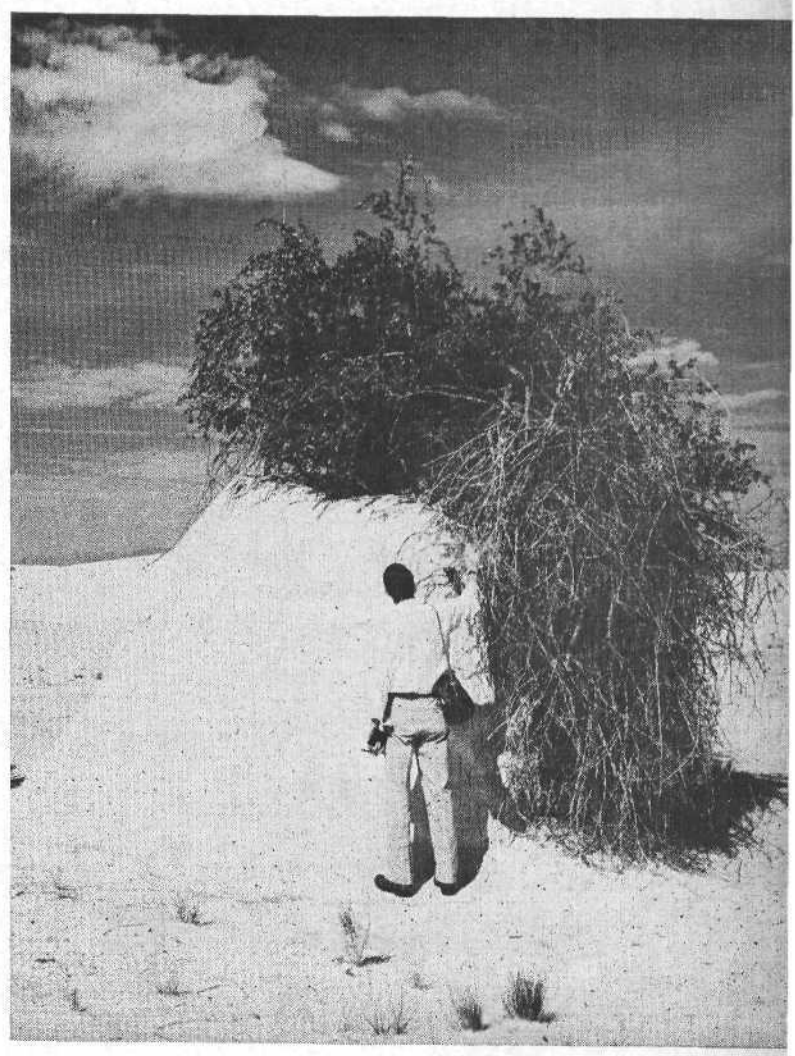
a. Isolation (in white sand, black lava, or wherever) is essential for development of a color pattern which will breed true.

b. Contrasting colored animals are the first ones eliminated by predators. Those whose colors blended, live to reproduce, and so on.

c. Geographic subspecies are probably entirely responses to a local type environment.

d. Mutation is always a possibility, but rarer than most people think.

We concluded that, whether we could understand the little critters or not, we would come back to the Sands any chance we had, to observe the earless lizard, and the light-colored spotted ground squirrel, and the white Apache pocket mouse.—END



A GYPSUM PEDESTAL REMAINED TO SUPPORT THIS TANGLED GROWTH AFTER THE DUNE MOVED ON.

An open letter to all wives whose husbands have that "Let's Buy A Jeep" gleam in their eyes . . .

YOU HAVEN'T LIVED YET !

If your husband hasn't come home and eagerly said to you, "Let's buy a jeep!" you haven't lived yet.

It usually doesn't take long after that opening salvo before you become the proud owner of a new jeep, and the great adventure is about to begin.

But wait—not just yet. His job is driving—yours is packing—and where a jeep is concerned, that takes some learning.

Tie the shovel onto the vehicle's front end where it can be easily removed in case of an emergency. Remember: no fancy knots. What goes on has to come off—eventually.

Sleeping bags and cots I place on the wheel wells (fenders on conventional cars, but merely interesting developments in a jeep). Into the jeep bed goes grub box, stove, lantern, cooking utensils, camp stools, table and a box of ETC.s ("entire trip conveniences" such as towels, wash cloth, wash basin, change of underclothes, toilet articles).

By VIRGINIA RICH

Are all the things we want to keep relatively dust-free in? Okay—slip the tarp down over the whole works. Oops! The tarp isn't long enough. Out come the camp stools—we won't need them. Still too short? Toss out the table. Now it reaches.

Up goes the tail gate and the entire canvas bulge is lashed with rope. The water and gas cans are tied to these spider webs.

Plenty of water is the order of the day. Our water supply is the most traveled in the land because more often than not we bring the same water home with us—but, it's best to be safe.

With your three-by-four-foot cargo space loaded with everything you will need to survive a week end trip (except chairs and table), you are at last ready for the great adventure—almost.

It takes a good deal of practice for a lady to get into (and out of) one of these little monsters. Do it this way: throw your left leg into the cab, put your head through the open door, grab something—anything—then, with a little jig on the right foot, you're in. Most important thing to remember is the proper sequence of these little acts. Never, but never, use the step.

At last you are off. All is wonderful as you cruise along the suburbs at 30 miles per hour. The wind flaps the canvas top—a steady tattoo that reminds one, with very little imagination, of a cruise around the Horn. The road noises are nice, too.

By the time you stop for your first coffee break, you have exchanged rather hostile glances with four dozen 70 m.p.h. motorists who have patiently waited their turn to pass you.

Off again, into the great desert beautiful—awe-inspiring and exhilarating. Do you stay on the modern high speed highway? Heavens, no! You turn off onto the first unlikely-looking road.

Does your husband cut the speed? Of course not. This is what a jeep is made for (he says). So grab on and hold on.

We never travel into the back country without a load of friends following in a second jeep. This is another precaution explorers of the great outdoors regularly and wisely take.

But, how often have I heard from my husband: "check and see if they are following!" The rear window is blocked, of course, by camping equipment and canvas. Whip your head out the window, open your eyes, then make a fast retreat. Don't be slow about it. Those beautiful non-skid hard-gripping heavy-duty tires kick up a lot of dust.

While you are unclogging your eyes and nose, you invariably ask your husband, "Why don't you look out your side view mirror?" This device is mounted on a long arm to facilitate looking around the camping gear which by now has settled slightly so that its sides are beginning to bulge.

"Can't," he always answers. "The mirror's vibrating too much."

This soon becomes an old exchange, and after awhile you don't ask your silly question. So make your report, which is always: "Yes, they're coming."

That same mirror is what you look into to check your lipstick upon descending at your first rest stop. It is usually at this time you discover you have forgotten your hair brush. Nothing you can do about it—you'll have to wear that "eternally scared" look for the entire trip.

Once more on the trail, you soon come to rough country. Your husband drops the jeep into four-wheel-drive—"grandma" he calls it. It seems he has his choice of gears even after making this move—and all three gear shifts are between your knees.

Now 10 miles per hour is top speed. Off in the distance—over gaping ravines and crumbled boulders—you see a peaceful low-lying saddle in the hills.

"I wonder what is on the other side?" you ask in complete innocence—later to rue uttering such a challenge to a new jeep owner.

Your husband spots a trail that turns into a wash that turns into a "general direction"—and that direction is up, up, up.

"It's impossible to make it up there!" you cry.

That—dear fellow female—is the last thing you ever want to say to a jeep jockey. It is very much akin to waving a red flag in the nose of el toro. The last pitch is a 25 percent incline. No rocks before you now—only blue sky. The saddle, luckily, is wide enough for the jeep to straddle. But, the view is beautiful—no denying that.

Let's skip the details of that first night in camp. The equipment tumbles off the back of the jeep much faster than it went on, but, oh, how much appreciated is the stillness—how beautiful is sleep!

Off again before dawn. By mid-morning you are in a better frame of mind. Begrudgingly, you give the jeep credit. It's quite a machine—at least you'll never have to buy one of those expensive mechanical reducing tables.

You're tired and muscle sore—but it's a happy kind of tired. Your face, with its various layers of dust, resembles the dog-eared contour map your husband has been trying to follow.

At last, the inexhaustible jeep is burrrrring its way home—the canvas is snapping and cracking, the gears chase each other, the mirror jiggles to a highway tune.

Home! Camping gear put away. Shampoo! Bath! Hot coffee! Friends come by. When shall we go jeeping again? they ask.

"Next week end's fine," you sing out—and mean it! You're kind of proud of yourself. You've seen some country that perhaps has never before been seen by a human being.—END

Desert's October Travel Fare

By LUCILE WEIGHT
P.O. Drawer 758, Twentynine Palms, Calif.

FABULOUS SILVER wealth poured from the colored jumbled Calico Hills which loom above the thousands who travel U.S. 91/466 between Barstow and Yermo. Starting almost 80 years ago, the Calicos produced the wealth which was back of two California governors and one lieutenant governor.

No one knows how much silver came from the Thunderer, Garfield, Orientals, Occidentals, Mammoth, Red Jacket, Total Wreck, Bismarck and the great Silver King. Estimates run $20-65 million. Calico's first strike was in the spring of 1881 and by 1882 the camp's paper, *Calico Print,* was publicizing the boom.

Turn north off U.S. 91 at Yermo or Daggett crossroads, and soon the road leaves Calico Dry Lake to start up Wall Street Canyon. Suddenly a living mining camp of the 1880s comes into sight on a slope at the canyon's east edge, and you join the bustling activity. Girls in calico or satin swing along the streets of Calico, miners in slouch hat and plaid shirt step into the Sarsaparilla Bar, or the sheriff appears 'round the corner.

This ghost town is lucky, for it was adopted by a man who not only knew how to restore it but who had a personal interest in it. Walter Knott, of Knotts Berry Farm & Ghost Town at Buena Park, is the nephew of John C. King, 1879-82 sheriff of San Bernardino County, who grubstaked the discoverers of the Silver King. Knott homesteaded near Newberry and worked in some of the last operations at the old camp. He and his family bought Calico in 1951, and are restoring it.

Besides the many attractions in the town itself, there are notable scenic tours in nearby canyons. The dark volcanic hills that

CALICO SILVER CAMP IS BEING RESTORED BY WALTER KNOTT FAMILY.

tower above Calico only hint of the chaotic geology and color awaiting you there. The canyons, connected with the road around the base of the Calicos, are composites of twisted upturned lake beds with many-colored pastel strata, interthrusted by dark and brilliant volcanics, riddled by wind-carved caves and earth-faulted canyons.

First left turn beyond the Calico turnoff is to the one-way drive up Odessa and down Bismark, named Doran Drive after long-time road supervisor Art Doran of Barstow. He opened this spectacular drive by hacking away at the heads of the canyons to join them. In less than five and a half miles you see—besides the riotous color and geology—remains of prodigious labor, as you gaze (mostly upward) at tunnel openings and mine shaft ruins far up the walls,

Continued on page 20

By THOMAS B. LESURE
6120 N. 18th St., Phoenix

LIKE THE old gray mare, the once boisterous mining camp of Tombstone "ain't what she used to be, many long years ago." But this month —on October 16-18— it will be temporarily rejuvenated when the Vigilantes give it a few shots in the arm. The result is expected to be another lively re-enactment of the gun-toting days of the 70s and 80s when rich silver lodes like the Lucky Cuss and Tough Nut poured out their ores to the clink of round-the-clock honky-tonks and a tattoo of splattering bullets.

THE "EPITAPH" STILL PRINTS THE NEWS.

John Heath will be "lynched" again for his sneaky part in the Bisbee massacre, Doc Holliday and the Earps will "decimate" the Clantons and McLowerys in 30 bloody seconds at the O.K. Corral, and other hell-bent-for-Boothill events will vivify the lusty spirit of an outlaw era made famous in scores of books, stories and movies. Occasion will be the annual Helldorado when some 10,000 visitors lend the town a "population" greater than it ever had in its heyday.

In a way, the crowd's a drawback. But if you think of Tombstone—as most people do—in terms of its gun-slingers rather than the host of more respectable citizens who finally proved crime doesn't pay, the Helldorado is the only time to conjure up the visions you expect. Every other day, Tombstone is just a ghost of its former self, rundown and hardly glamorous.

A movement has been going on for several years to restore the community to its original appearance. A few strides have been made—such as the reconditioning of the Old Cochise County Courthouse which now houses a local museum—but it will take the league-boot steps of a millionaire patron to make Tombstone a Virginia City, Mont., or Williamsburg, Va. And such aid hasn't been forthcoming.

In the meantime, commercialism (the old Bird Cage Theater—only remaining honky-tonk of the Old West—for example, now is geared for the tourist) has taken over.

Don't get me wrong; workaday Tombstone continues to be worth visiting. But you need the right mental attitude. If you think of the movie or television versions of town, you'll find it drab and disappointing. On the other hand, if you look beneath the surface, remembering the old tales and characters and don't expect too much atmosphere, "the town too tough to die" assumes a more significant meaning.

Schieffelin Hall, once a theater—the office of the *Tombstone Epitaph*—adobe St. Paul's Episcopal Church, oldest Protestant church in the state—the San Jose House—Wells Fargo Office—the cavernous Million Dollar Stope—and even Boothill Cemetery, despite its curio stand and wooden headboards that point up the most vicious elements of early life—these and other remaining

Continued on page 20

√ Calico Ghost Town √ Tombstone Helldorado

√ Mission Country √ Zion - Bryce

NEW MEXICO

UTAH-NEVADA

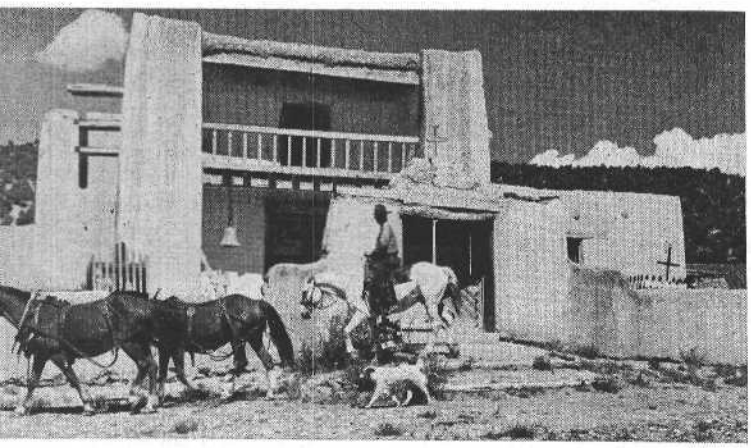
By W. THETFORD LeVINESS
P.O. Box 155, Santa Fe

THE ONE SCHEDULED Indian *fiesta* in New Mexico in October is on the 4th at Nambe, a much-Hispanicized pueblo north of Santa Fe. It's a lovely old village in a picturesque setting, and there's a kiva built in the traditional style in the center of the plaza. But dancing at Nambe has lost its vitality through the years, and often the dancers must be "borrowed" from other pueblos nearby.

Aspencades into high levels of the Sangre de Cristo Mountains originate on Sunday mornings in early October at Santa Fe and Taos. Dates for these are announced a few days in advance by local Chamber of Commerce offices. All who join these trips spend a day in a golden paradise of aspens at the height of their color and glory. Horizons stretch for miles from these altitudes, which in spots reach way above the 10,000-foot mark.

Trips in early autumn are cool and refreshing in many parts of New Mexico. Perhaps the most rewarding this year would be to two old missions which were built a century apart and are having anniversaries now. Both are older than the first of better-known missions in California. They are widely separated within the state, and represent distinct phases of Franciscan zeal in church-building in the Southwest.

One is at Humanas Pueblo, now Gran Quivira National Monument. Begun in 1659 and never finished, its walls stand majestically in the Estancia Valley after 300 years. The other is at Trampas, a mountain village to the north. Called the Church of the Twelve Apostles, ground was broken for this structure in 1759, and after two centuries it is still used for regular services.



CHURCH OF THE TWELVE APOSTLES AT TRAMPAS WAS STARTED IN 1759.

Gran Quivira is on State Route 10, and is reached by driving south 25 miles from U.S. 60 at Mountainair. Ruins of two other 17th-century Franciscan missions, St. Gregory's at Abo and the Church of the Immaculate Conception at Quarai, are in the same general area. Both sites are state monuments. Abo is on U.S. 60 a few miles west of Mountainair, and Quarai is just north of Mountainair on State Route 10.

Spaniards were driven out of New Mexico in the Pueblo Rebellion of 1680, but with their return 12 years later brown-robed friars again built churches. One was constructed among Jicarilla Apache Indians along the Trampas River in 1733, and in 1751 12 Spanish families settled the town, Santa Tomas Apostol del Rio de las Trampas. Desiring a larger place to worship, and with a Franciscan priest to direct them, one male member of each

Continued on following page

By PEGGY TREGO
Unionville, via Imlay, Nev.

THIS IS THE TIME of year when the sun gets around to establishing post-summer headquarters in Southern Utah. That's just one good reason a trip to Zion and Bryce Canyon National Parks is particularly happy right now. There are other reasons: fall colors in hills, valleys and lakeshores belie the sunshine; the clear long-shafted October sunlight enhances all the towering natural drama of this amazing part of the world, pointing up rock hues ranging from pastel to petrified fire. Then, too, October offers a peculiar freedom on uncrowded highways and park roads —those who spend the lovely nostalgic fall days in such surroundings are usually lovers of country, rather than mere time-haunted "trippers."

Both Zion and Bryce are open all year, and at least through the middle of this month there are full accommodations for visitors at the inns, cabins, cafeterias and stores in both places. Campgrounds are open, and there is more chance of finding the "perfect campsite" now than during the summer "tourist season." A few of the regular facilities—bus tours at Bryce, for instance—are ended for the season, but the pleasure of being "on your own" more than makes up for this. Ever-obliging Park personnel will give you all the help you'll need in planning an itinerary to the major marvels of the two areas.

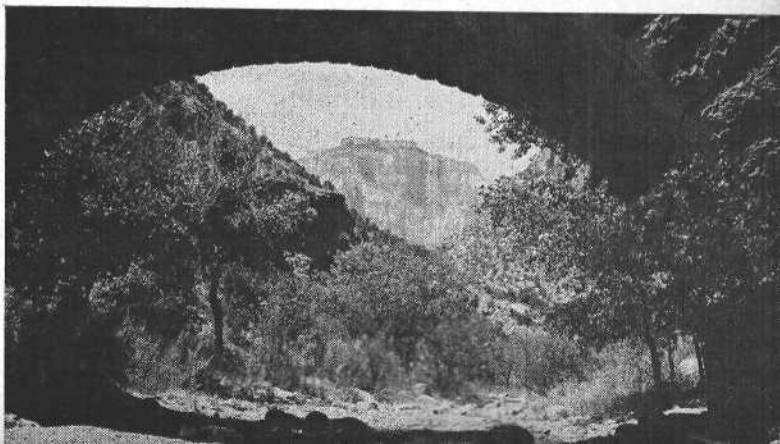
Two main highways lead into the Zion and Bryce country, U.S. 91 from Las Vegas, Nev., and U.S. 89 from Arizona's Grand Canyon country. Enter from Las Vegas and you pass through the Shivwits Indian Reservation, then over the 4600-foot-high Beaver Dam Mountains to St. George, only 41 miles from Zion Park headquarters. U.S. 89 takes you from Arizona first to little Kanab, famous for its nearby caves, cliff dwellings and coral-pink dunes. From Kanab it's 31 miles via a 6650-foot summit and a crossing of the Virgin River's east fork to the Park's east entrance. Chances are you'll find some movie-making going on at either St. George or Kanab; these are favorite locations for "Westerns," and for good reason.

Zion Park itself is hard to describe, even with superlatives rampant on the page; descriptions seem overdone—that is, until you've seen with your own eyes this tremendous marvel of stone, form and color. There are places the highway wanders a narrow canyon floor below massive vari-colored rock cliffs 3000 feet high; the Virgin River ambles quietly along in the canyon depths, seeming to ignore the fact that it carved this magnificence. Zion isn't to be seen in one day—take your time, try to soak up as much of it as you can by hiking, driving or merely gazing.

From Zion, the Mt. Carmel Highway to Bryce Canyon is a masterful engineering job through 86 miles of beautiful country.

Continued on following page

WEST TEMPLE, BACKGROUND, IS THE HIGHEST POINT IN ZION PARK.



Southwest Travel --- continued from preceding pages

California - -

at ore dumps almost overhead, at rock ruins that sheltered Cousin Jack miners.

Up these almost vertical walls trudged burros, each loaded with four 16-foot mine timbers. They came down carrying sacked ore to the waiting wagons. The canyon was so narrow—and still is—that mules hitched front and back to the wagons slid them around on a sort of turntable to head them back downhill. In the Narrows near the head of Odessa is a double-twisting up-pitch that calls for careful driving.

Going down Bismarck, the other side of the circle, you will see burrowed earth on the right that looks like a troglodyte ruin. Here, at Bismarck, men tunneled for silver, gullying the area into a fantastic maze. Just below, left, is what remains of the boarding house of Yung Hen, the Chinaman. Further down Bismarck, sections remain of a footpath connecting with Wall Street Canyon. The school bell at Calico, it is said, could be heard by Bismarck children who trudged this path with their lunch-pails.

Over this path, too, padded the famous dog Dorsey who carried the mail from Calico to Bismarck.

The second side-trip is a multiple one, for up Mule Canyon there is another scenic circle, Phillips Drive, beginning and ending at Mule Camp, while the canyon proper leads to a favorite haunt of rockhounds, as well as the remains of Borate, considered the world's borax center in the 1890s. At Mule Camp teamsters made overnight stop, for it took three days to make two round trips from Borate to Daggett. Later a narrow gauge railroad—remnants of its grade remain—was built by "Borax" Smith down this colorful canyon.

Beyond the Borate right-hand turnoff are collecting areas for moss agate, palm root, some sagenite. Selenite and fluorescent colmanite also are found. First called to wide attention by *Desert Magazine* in January, 1948, clubs still take field trips here, and find digging profitable.

Plans are underway for a Calico Pageant to be given in October, this year proclaimed Desert Month.—END

Arizona - -

sights can be a travel lodestone to perceptive visitors.

There's more, though — area magnets you'll remember as much as Tombstone. A few miles west and southwest lie the ghost towns — once almost as vibrant as their more famous neighbor—of Fairbank and Charleston, and a bit farther on is Fort Huachuca, an up-and-coming military electronic proving ground. Southward rise the lofty Huachuca Mountains hiding floral wonderlands and peaceful camping retreats overlooking the point where the Spanish explorer, Coronado, entered Arizona in 1540. Nearby, mining operations at the Lavender Pit in old Bisbee rock the region with periodic blasts that unearth one of the Southwest's finest stores of low-grade copper. And, just a step away lies Naco, on the Mexican border, with its "Bullet Proof Hotel" that hardly shielded guests during revolutionary uprisings of the past.

Apaches, too, still seem to linger in the land. Somewhere, amid the jutting rock fastness of Cochise Stronghold—with its delightful camping area in the Dragoon Mountains—lies the grave of one of the tribe's most famous chiefs. Almost due eastward, in Chiricahua National Monument—that fairyland of balanced rocks and strangely eroded pinnacles—shades of marauding Apaches still stalk the narrow canyon trails.

Indeed, if you're looking for spooks in this Hallowe'en month, the Tombstone area is sure to oblige. The spirits may, at times, appear jaded, but they certainly haven't faded. After all, being "too tough to die," why should they?—END

New Mexico - -

family volunteered work on the present structure—called the Church of the Twelve Apostles in honor of its dozen builders.

This church is one of the most remarkable in use in America. Built of adobe, it has been replastered many times and in 1932 underwent extensive repairs. But its exterior hasn't changed; erosion has rounded its lines, adding grace and charm. Inside, it has retained much of its original furniture and altar decoration.

The pulpit is typical of the use of native materials in construction. Its floor and decorated panels are supported by a sturdy hand-carved spiral log. There are sculptured *santos* on the altar; a retable with six saints painted in separate panels flanked by smaller screens containing two paintings each. Planks form the floor of the nave, and the soffit of the choir-loft bears small designs in color — animals, humans and objects of several sorts.

The interior of the Trampas church is the most authentic of its period to survive in New Mexico. Mass is still heard here on Sundays and holy days; visitors are welcome at other times, too, if they tip the sexton.

Trampas is on State Route 76 on the historic "back road" from Santa Fe to Taos. Reached from U.S. 64 at Espanola, New Mexico, this artery is famous as the chief locale of Willa Cather's novel, *Death Comes for the Archbishop*. Spanish is still the dominant tongue in the area; Trampas and other towns in the vicinity are largely agricultural; they retain, indeed, the milieu of medieval Spain. Yet all are within a two-hour drive of Los Alamos, with its nuclear research laboratories.—END

Nevada—Utah - -

Cutting across the southernmost tip of Dixie National Forest, it travels near the 9756-foot eminence of Strawberry Peak, follows the Silver River, then bends easterly into the Park.

You'll want to take time in Bryce, too. Be sure to drive to the soaring natural bridge in the southern part of the park, and to wander the many pine-dotted slopes that accent this strange world of terraces, pinnacles and cathedrals that erosion has formed. There are no less than 14 huge amphitheaters to compare, and 60 color variations in them to try to capture in memory and on film.

Other natural wonders between Zion and Bryce are worth a return trip by a different route—for instance, the 41 miles across Dixie National Forest on State Route 14 to Cedar City. The Forest boasts its own natural bridge a few miles off the main road, and Cedar Breaks National Monument lies in this region, less than 20 miles from Cedar City. Here again is fabulous shape and color, this time on one vast amphitheater two miles wide, nearly half a mile deep. Most tourist facilities at Cedar Breaks are closed by this time of year, but the Monument is nearly always open through October, despite its 10,000-foot elevation.

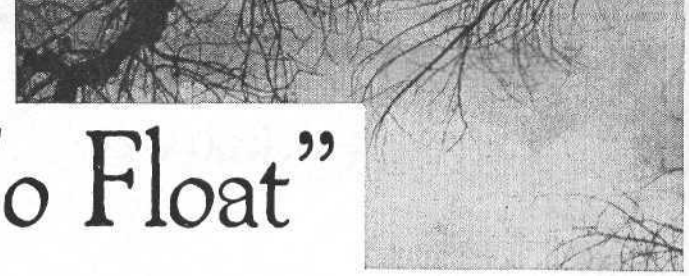
Remember that all of this country is high. It is wise to bring equipment and clothing to withstand the chill of upper-elevation nights.

Not too many Nevada-Utah public events are scheduled this month, but if you're around St. George October 14-15 you'll enjoy attending the annual deer hunters' dance. And if you come to Southern Utah by way of Las Vegas, keep in mind the unusual spectator sports opportunities offered by the Air Force jet gunnery meet (Oct. 12-18), the Sahara Cup hydroplane race (tentatively set for Oct. 13-17) and the Black Mountain golf tournament at Henderson (Oct. 23-25). On October 31, Carson City celebrates Nevada's admission to the Union with parades, pageantry, Indian dances and exhibits—a state birthday party well worth attending.—END

MEXICAN MEAT BALLS

1½ lbs. ground meat (½ lb. each beef, pork & veal)
1 teaspoon salt
1 teaspoon chili powder
1 teaspoon grated onion
1 cup bread crumbs
1 egg, beaten
1 quart meat broth, highly seasoned

Mix meat with salt, chili powder, onion, bread crumbs and beaten egg. Shape into balls, using as little pressure as possible to avoid hardening. Heat broth to boiling point, drop in meat balls, reduce heat. Simmer until meat balls are done, about 40 minutes. Arrange in platter and pour sauce, slightly thickened with flour, over them. Garnish with onion rings, green pepper and parsley. Variation: boil meat balls in chili sauce, pour over cooked spaghetti.—Carol Sorensen, Mira Loma, Calif.



"It Was Built To Float"

The shipwright who designed the Pine Valley, Utah, Church, wasn't taking any chances . . .

By FRANK JENSEN

NOAH'S ARK and a New England-style Mormon church in southwestern Utah have two things in common: In the event of a flood, they both would float.

The Pine Valley Church, which dates back to 1867, is unique among frontier churches because it was designed by a shipbuilder who constructed his land buildings as he did the hull of a brigantine. This chapel, probably the oldest Mormon church in use today in Utah, was built to last. It has the simple austere lines of Atlantic coast architecture, for the folks who lived here were mainly New Englanders.

Its rough-hewn timbers, from a foot to two feet in diameter, were tied together with wooden pins and fastened at the corners with green rawhide. The fact that the Pine Valley church has given a century of service attests to the sturdiness of its construction.

Chief architect of the Pine Valley Church was Ebenezer Bryce, a Scottish shipwright who was converted to Mormonism in the late 1840s. This salty seaman turned church builder and cowman, gained a certain amount of local fame when he said the canyon of pink spires near his ranch (now Bryce Canyon National Park) was a "helluva place to lose a cow."

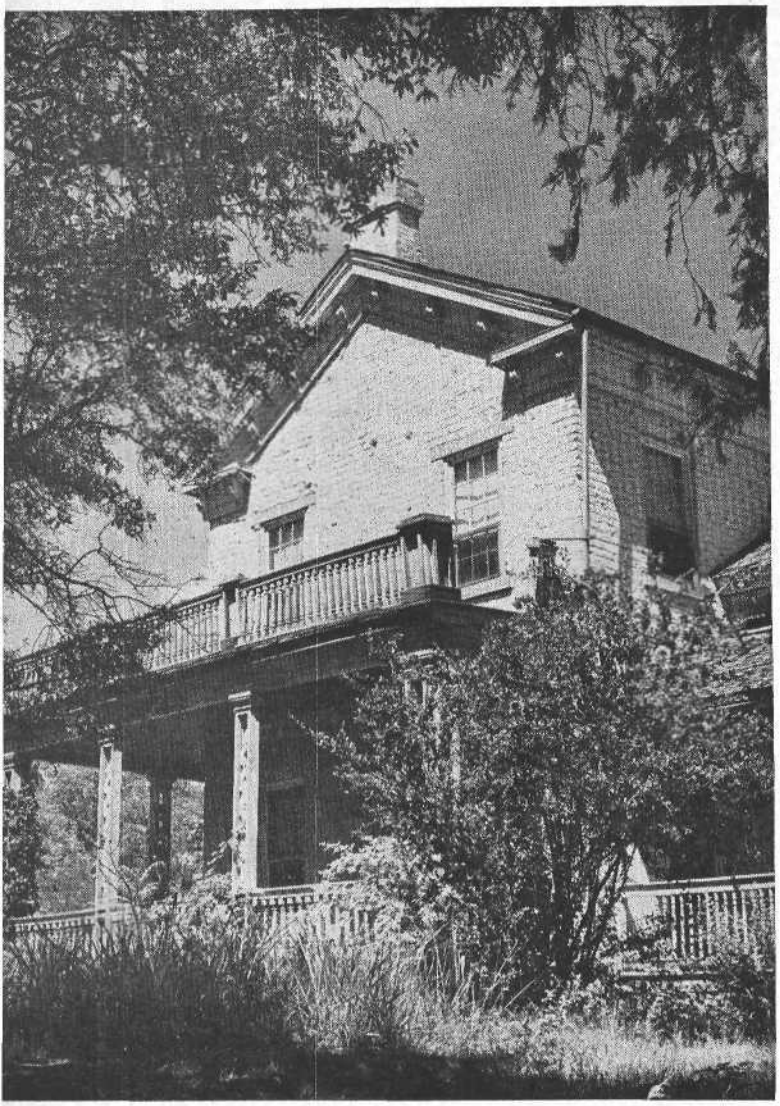
Of his church building, Bryce prophesied: "should you have a flood it will float, and should you have a cyclone it might tip over but wouldn't break up." Fortunately, neither of these catastrophes have occurred to test the structure.

The history of Pine Valley and its century-old church has been chronicled by Mrs. Elizabeth Beckstrom, a St. George librarian and college English teacher who was reared in that remote southwestern Utah community.

"Raising the church was a community effort," she said. "The sides of the building were assembled on the ground. After each section was completed, the townspeople got together and hoisted the sections into vertical position with ropes."

To make the elliptical-shaped arch which spans the width of the chapel, the great logs were tied together and hewed out on the underside with broadaxes. The church also had two chandeliers holding six lamps apiece which could be lowered or raised by ropes for desired interior lighting.

For more on pioneer Southern Utah architecture, turn the page . . .



YOUNG'S WINTER HOME, BUILT IN 1873, IS BEING RESTORED AS SHRINE.

Brigham Young's Winter Home . . .

THE SOLID ADOBE of the southwest has proved itself a lasting building material. Coupled with the simple lines of pioneer architecture, the adobe clay lends a certain charm that is enhanced by the passing years.

The Mormon pioneers of Southern Utah used adobe liberally in their two-storied, high-gabled homes. The clay was ground and mixed with water in a horse-powered pugmill. The plasticized mixture was then poured into molds, sun dried into bricks, and finally cemented in place with a lime mortar.

A good example of Mormon architecture is the Brigham Young winter home in St. George, built in 1873 to enable the Mormon leader to oversee the building of the St. George temple. The two-story home has a veranda that circles the front and sides to give a sweeping effect to the entire building.

The ornate woodwork of the veranda and cornices was the work of one Miles Romney, an English carpenter who also helped build the St. George Tabernacle. The woodwork was done entirely with hand planes and chisels. Both the interior and porch floors were made of native pine lumber and tacked down with old fashioned square nails.

During the four years the home was used by Brigham Young, the downstairs consisted of a single large living room and kitchen, the bedrooms were upstairs. A fireplace with a cast iron front heated the home during the winter. Following Young's death in 1877 the home passed through several hands. One of these former tenants was a dentist who partitioned off the living room for an office.

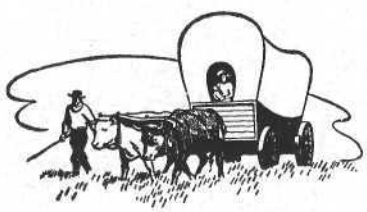
The old home is being restored as a Utah shrine by the St. George Chapter of the Sons of Utah Pioneers.

Mormon Outpost During the Blackhawk Indian War

ONE OF THE best preserved bastions of the Southwest is a little known sandstone fort located just below the Arizona-Utah border on the Arizona Strip.

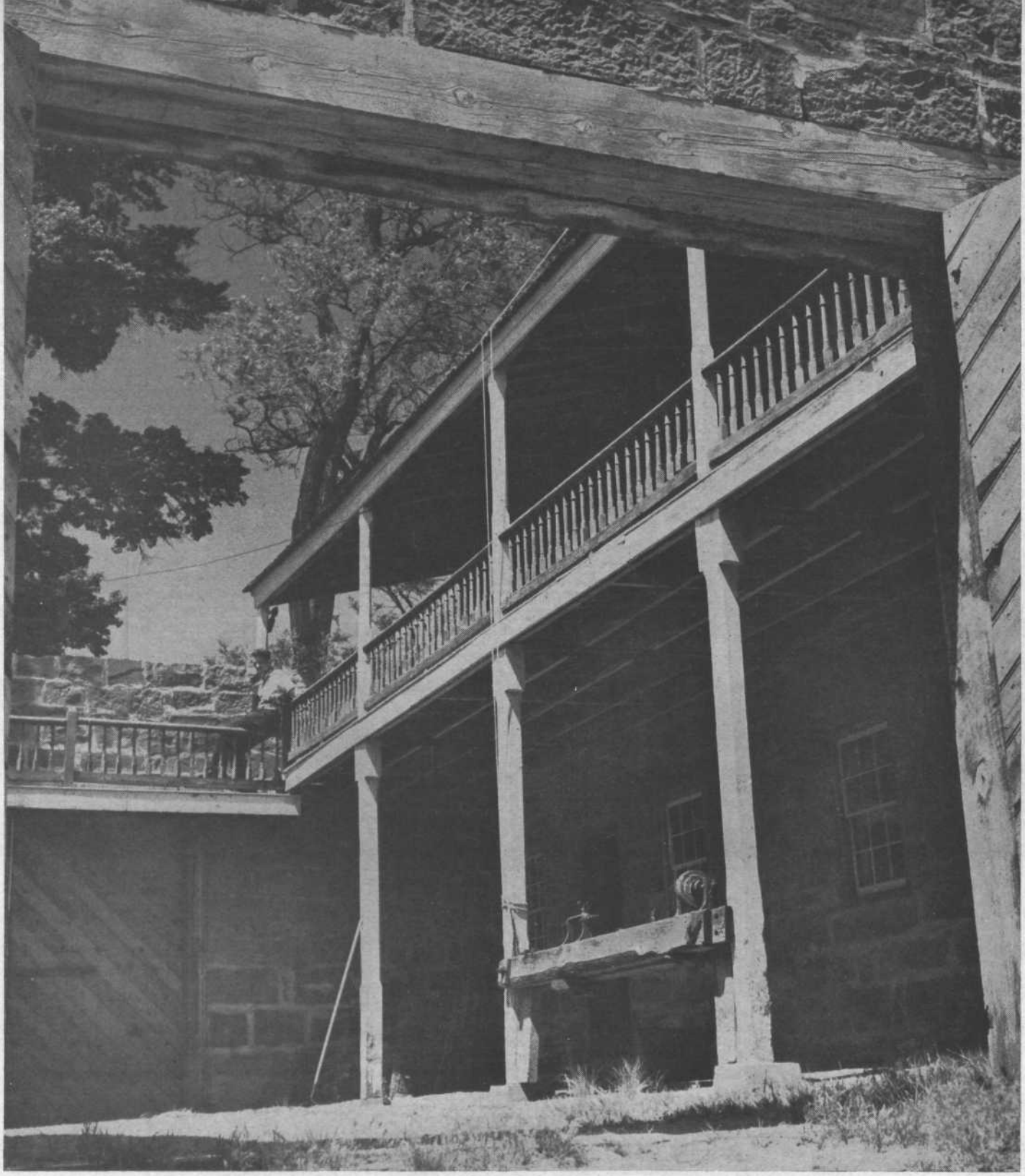
The historic fort at Pipe Spring was built in 1869 as a Mormon outpost during the Blackhawk Indian war. Its high rock walls enclose rather comfortable living quarters for the time, built on two levels surrounding an inner courtyard. The fort has a dairy and cheese - making rooms on the ground floor where the springs literally flow through the floor and drain off into a wooden trough. Opposite the dairy and across the courtyard are a parlor, kitchen and bedroom equipped with such remnants of the past as headboards of a bed with a rope-mesh bottom in place of slats, an old muzzle loader, rockers with genuine rawhide seats, and a kerosene lamp. Upstairs are bedrooms, work room, and Arizona's first telegraph office.

The springs that gave the breath



of life to Pipe Spring trickle through the Sevier Fault, a crack in the earth's crust that extends from Southern Utah to the Colorado River. The Pueblo Indians, who lived in Northern Arizona 800 to 1000 years ago, left extensive ruins just outside the monument. They, in turn, were followed by the Paiutes and their warlike neighbors, the Navajos, who used Pipe Spring as a watering place during their raids on the west side of the Colorado.

Pipe Spring was named in 1858 when a Mormon scouting party led by Indian missionary Jacob Hamblin camped at the springs. A brother, William "Gunlock Bill" Hamblin, who purportedly was a crack shot, wagered he could shoot through a silk handkerchief at 50 paces. Instead of passing through the cloth, however, the ball merely wafted it aside. Infuriated, Hamblin had an old Indian pipe placed on a rock with the bowl to-



ROOMS IN FORT OVERLOOKED COURTYARD.

wards him and boasted he would shoot off the bowl without touching the rim. He did. The pipe went spinning into the water, giving the spring its name.

The fort was built by another Mormon, Anson P. Winsor, a bishop who was said to have been related to English royalty. After the building's completion in 1870, it was referred to, with tongue in cheek, as "Windsor's Castle." Fortunately, the "Castle" never had to be defended against attack. To obtain its built-in water supply, the fort had to be erected on the side of a hill, making it nearly indefensible against a concentrated assault.

In spite of its grim purpose and the fact that its 28 gunports let little light into the dingy rooms, the fort retains much of the charm of the past century. The National Park Service this year will restore the building to the condition of the 1870s under its Mission 66 program. Doors, windows and partitions not part of the historic period will be walled up. Since only a telegraph key and an old musket are original with the fort, the Park Service will canvas Southern Utah and Northern Arizona for chairs, beds, lamps, crockery, tables, "thunder mugs" and the like dating back to the late 1800s to furnish the fort. Some $20,000 in all will be spent to bring the past back to Pipe Spring.—END

Information Free

By ARNOLD E. HAGEN

The following sources of free and inexpensive materials are made available to the readers of Desert Magazine as a convenient service in obtaining worthwhile information concerning timely topics of the day. We hope that this information will be both helpful and informative. Send requests to the addresses listed below. Each source represented reserves the right to withdraw its offer whenever it sees fit.

« « » »

THE HISTORY OF CATTLE BRANDS — And How to Read Them—History shows that use of the branding iron has not always been restricted to the hides of livestock. Slaves, fugitives and criminals were often stamped for life with the indelible mark of the brand. Learn more about this interesting subject by reading this informative booklet.

Carter Oil Company, Dept. IFD, Box 2514, Billings, Montana.

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WESTERN PACIFIC MILEPOSTS — Golden Anniversary Issue — This 40-page booklet is filled with historic facts about the growth of railroads in the West. Excellent material for educational use. Many photographs and illustrations.

Western Pacific Railroad Co., Public Relations (IFD), 526 Mission Street, San Francisco 5, Calif.

« « » »

INDIAN ART FROM NEW MEXICO—Why is Indian art so easily recognized, and yet so hard to imitate? Why, among a small population, are there so many excellent painters, potters, weavers and silversmiths? Send for this beautifully illustrated brochure that tells the Indian art story.

New Mexico State Tourist Bureau, Dept. IFD, Santa Fe, New Mexico.

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FOODS OF MEXICO—Mexican foods are increasing in popularity. Send for this colorful brochure that includes favorite recipes and information about Mexican foods.

Ashley's Inc., Dept. IFD, 6590 Montana St., El Paso, Texas.

« « » »

WESTERN TRAVEL GUIDE — This 99-page guide shows miles between towns and total mileage between larger cities. Covers highways to all principal points of interest, including National Parks. Explains how certain members of Best Western will honor Credit Cards in payment of room. Contains list of first class motor hotels, lodges, inns and motels.

The Best Western Motels, Dept. IFD, 4217 East Ocean Blvd., Long Beach 3, Calif.

« « » »

PETS FOR ASSURANCE OF A FULLER LIFE —Owning a pet is like playing a good game. It's exciting, stimulating, absorbing, challenging and—above all—it's fun. This 48-page booklet gives information about choosing, training, keeping pets.

The Equitable Life Assurance Society of the United States, Dept. IFD, Box 572, General Post Office, New York 1, New York.

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ROADS TO ROMANCE MAP—A large colorful map of Southern California showing in detail the many tourist attractions, missions, cities, etc., of this Sunshine Empire. This beautiful map is of excellent quality and suitable for framing. 35x22 inches.

Roads to Romance Association, Dept. IFD, West Third St., San Bernardino, Calif.

100 QUESTIONS AND ANSWERS ON LIMING LAND—This booklet presents answers to the many questions that arise regarding liming of the soil. Excellent information in this easily read booklet.
National Lime Association, Dept. IFD, 925 15th St., N.W., Washington 5, D.C.

« « » »

RECIPES AND SUGGESTIONS FOR OUTDOOR COOKING—This 31-page barbecue cookbook has been prepared to help the experienced cook and the newcomer to the outdoor culinary arts. The recipes are simple and easy to prepare.
Chattanooga Royal Company, Dept. IFD, Chattanooga 6, Tennessee.

« « » »

IDEAS FOR OUTDOOR LIVING—Four ways to add beauty and convenience to your yard or patio. Booklet has plans for building a garden storage unit with room for all your garden gear; a patio dining set of table and chairs; easy-to-build garden fences. Complete instructions for cutting parts from fir plywood, putting them together, and finishing.
Douglas Fir Association, Dept. IFD, Tacoma, Washington.

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MORE FUN OUTDOORS WITH COLEMAN—The information in this 39-page booklet is published with the hope that these ideas and suggestions will make outdoor living more fun for you and your family. It provides hints that both novice and veteran will find helpful.
Coleman Company, Dept. IFD, Wichita 1, Kan.

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CATALOG OF PUBLICATIONS OF THE BUREAU OF INDIAN AFFAIRS — Write for this free catalog which contains a list of pamphlets and leaflets which may be obtained free of charge from the Institute.
Publications Service, Dept IFD, Haskell Institute, Lawrence, Kansas.

« « » »

THE MISSIONS OF CALIFORNIA—The Golden State's Mission Trail is one of the most fascinating highways in the world. This brochure is especially designed for those interested in the history and romance of California's Missions.
California Mission Trails Association, Dept. IFD, 6912 Hollywood Blvd., Los Angeles 28, Calif.

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A SELECTED LISTING OF MOTION PICTURE FILMS ON CONSERVATION AND NATURAL HISTORY—67 pages of 16 mm. films and film sources to assist in planning interesting and enjoyable programs.
Servicing Division, National Wildlife Federation, Dept. IFD, 232 Carroll St., N.W., Washington, 12, D.C.

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CALIFORNIA STATE PARK SYSTEM MAP—A large map of California, suitable for framing. It shows camping and picnicking areas, historical monuments, parks, highways, cities, etc. Also many interesting facts about the State Park System.
Division of Beaches and Parks, Dept. IFD, 1125 10th St., Sacramento 14, Calif.

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NATIONAL FOREST VACATIONS — Opportunities for outdoor recreation. 64-page booklet is loaded with facts, maps and photographs.
Forest Service, U.S. Dept. of Agriculture, Washington, 25, D.C.

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WOODWORKING FOR BEGINNERS—A 30-page booklet that is prepared for the use of volunteer leaders of woodworking groups of boys and girls between the ages of seven and 12. Program consist of 11 woodworking projects and one in cardboard, accompanied by drawings and appropriate general directions.
Rural Research Institute, Inc., Publications Office, Dept. IFD, 500 Fifth Ave., New York 36, New York.

READER RESPONSE

Riding Into Hot Water . . .

Desert:

The cover picture of the falls in Havasupai (August) is a darb, but why, oh why, would photographer Stewart Cassidy have that guy ride his horse and take his pooch right into that beautiful pool? It's sacrilegious. I trust Cassidy had shutter trouble for a month afterwards.

HARRY C. JAMES
Banning, Calif.

"Coyote Appreciation Day" . . .

Desert:

I lived on a ranch the first 18 years of my life, and so I cheer Dr. Edmund C. Jaeger's potshots at government poisoners, and his praise of the coyote. Government poisoning, state and federal, has become a racket at the expense of the taxpayers.

The following item in the June, 1959, *Oklahoma Wildlife* is good news for Dr. Jaeger and others who know something of ecology:

John Biggs, Manager of the half-million acre Waggoner Ranch in northern Texas, is advocating the establishment of a "Coyote Appreciation Day," the National Wildlife Federation reports. "We used to shoot coyotes on sight," Biggs is quoted as saying, "but now we leave them strictly alone." He indicates people in his area have come to appreciate the coyote's value in controlling populations of such fast-breeding nuisance animals as cotton-rats and jackrabbits.

The Colorado ranchers found this out some years ago. Now if you shoot one of their coyotes or bobcats or hawks or owls, you're likely to get shot at yourself.

L. FRANK O'NEAL
Fallbrook, California

Misrepresenting the Coyote . . .

Desert:

Thanks to Dr. Edmund Jaeger for rightly evaluating ("senseless and nefarious") in your August issue the campaigns by paid poison squads to eliminate the valuable coyote.

The squads usually are sections of governmental bureaus representing their activities as protection for agriculture or for game. Because the bureaus' allegations are official, the public is deceived into believing they are authoritative. All competent naturalists long have known better. My own experiments between 1924 and 1930 with chickens vs. coyotes absolved coyotes and indicted farmers' dogs.

I have been compelled to conclude that agriculturists, ignorant of how coyotes operate, have poison campaigns foisted on them by bureaus that are really appropriations-motivated.

OBED E. SMELSER
San Bernardino, Calif.

Road Runners' Colors . . .

Desert:

In the August Quiz the statement is made that the road runner has a brown-green back and is white underneath.

During the past two years we have had a wonderful opportunity to observe road runners, for they have nested in our patio. We have watched them court, lay their eggs, and come and go at regular intervals during the incubation period until the little paisanos appeared. And we have observed our feathered friends feeding—lizards for breakfast, grasshoppers for lunch, lizards for dinner, and bugs for between-meal snacks.

Regarding color: while there is a great variation in the play of colors, depending on the angle of light, I would say that the road runners' back generally appears to be dark-gray to blue-gray, while the underbody is a light-tan, the breast a streaked buff.

At times these birds show a remarkably brilliant display of color, especially when they raise their crests or when the males are putting on their courting dance. At these times, there is a play of purple about the back of the head, and red patches appear at the sides of the head.

HUGH B. SLOAN
Tucson

Income for Indians . . .

Desert:

On a recent visit to the Navajo and Hopi reservations, it struck me that one does not see any well-tanned sheepskins with the hair left on. From a Hopi in Hotevilla I did buy some very nice moccasins, the tops of which are made of a beautifully soft buckskin-like leather, but that is a different process from tanning with the hair left intact. While in Hotevilla, a group of Navajos came down to trade for some apricots. They brought quite a few sheepskins, but all just dried and stretched, not tanned.

Since the Navajos and Hopis butcher so

DESERT QUIZ ANSWERS

Questions are on page 8

1. Powell.
2. Pecos.
3. Mesquite.
4. Navajo.
5. Blue.
6. Beaver.
7. Mormon.
8. Creamy white.
9. Metate.
10. Nogales.
11. Sea of Cortez.
12. Bolton.
13. Little Colorado.
14. White tail.
15. Afoot.
16. Lee.
17. Salome.
18. Mountain barrier.
19. *Death Valley in '49.*
20. Wildflower.

many sheep, it would help their income if they could be shown how to tan the hides properly. Inquiry has shown me that in the trade a well-tanned hide retails for $1.10 a square foot; the average hide bringing around $10 or more.

When living in Pemberton, B.C., years ago I had a friend who used to tan all sorts of hides beautifully. He was always going to teach me, but somehow or other we never got around to it. His method required no big heavy crocks to soak the hides in, or other costly or cumbersome material. The only thing I do remember definitely is that his main ingredients were rolled oats and sulphuric acid. As I said, the process I never learned, but the results certainly would have been hard to beat!

If you or any of your readers would happen to know of this or a similar inexpensive and not too complicated process, I would appreciate it no end. I am asking this not for myself, but to pass on to my Indian friends.

FRED TELLANDER
Yarnell, Arizona

Utah Back Roads . . .

Desert:

Recently my companion Kerry Townsend and I made an exploratory trip into southeastern Utah. I'd like to pass on to your readers road condition information on a few of the trails we traveled.

The road to the Hole-in-the-Rock crossing is good. All the gates have been replaced by cattle guards. No soft sand is encountered if you stay on the road.

Harris Wash is too poor for other than four-wheel drive. Summer floods scoured the sand out of Silver Falls Wash at a point 2½ miles past the Escalante River, leaving only boulders.

Pavement extends from Monticello to the Arizona line in Monument Valley, and from Crescent Junction to Hanksville. The side road into Goblin Valley is paved for half its 15-mile length.

Worst road we encountered was the one to Four Corners. It is paved from Shiprock, N.M., to the Arizona border—but the remaining eight miles are very rocky and rough.

JACK HARRIS
Riverside, Calif.

Misplaced Yuccas . . .

Desert:

Your Eastern readers will be interested to know that the Southwest's exotic yucca will do well in these parts. About a dozen yucca plants are growing in Jones Beach, Long Island, New York. They have survived a number of winters, and bloomed beautifully this summer.

A condition which is imperative to the successful growing of this plant in the North is that the soil be quite sandy. In places where the soil is not sandy, sand should be mixed liberally into the ground within a three-foot radius of the place where the yucca is to be transplanted.

HENRY A. PIERCE
Flushing, New York

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By BENN KELLER, *Manager*
Ford Desert Proving Grounds
Kingman, Arizona

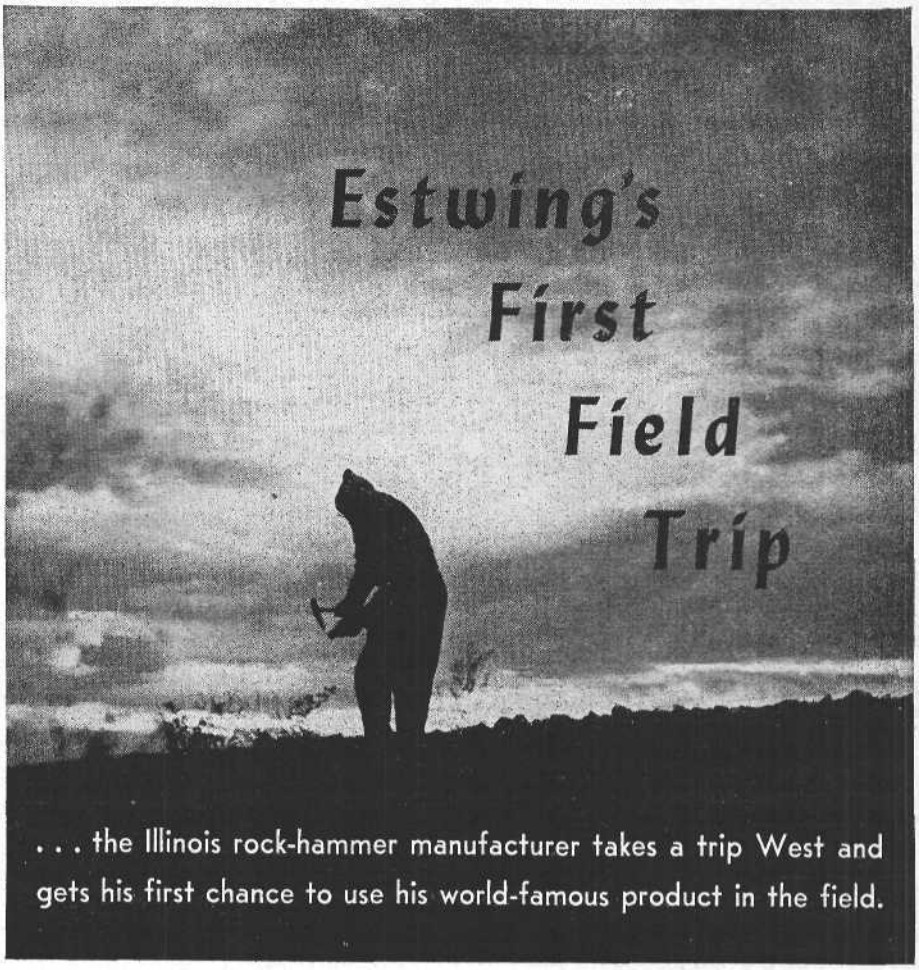
Tire Wear

The straight, flat, well-surfaced highways of the Southwest present an uncontrollable urge to most desert travelers to "dust their engines out." The driver usually is not aware that factory tires he received with his car will not stand speeds above 90 mph, in 90 degree air temperature for more than a very few miles. The tires will slowly start to disintegrate by "chunking" (losing small portions of tread) until substantial and irreparable tread loss results, as evidenced by extreme roughness in the vehicle. Tire deflation seldom results, hence, no particular hazard is presented; but, replacing tires become quite an item of expense.

"Chunking" is caused by the tremendous centrifugal forces set up by the tire tread and the elevated tire tread temperatures. Oftentimes, premium tires are worse for chunking and tread loss than standard tires because the additional tread has more weight and sets up higher centrifugal forces.

Overinflating the standard tires (to 30-35 pounds per square inch) will make them less susceptible to "chunking" but will, of course, result in a much harsher ride. Some drivers have been misled by the erroneous theory that tires should be under-inflated for hot weather highway driving because the higher road temperature will automatically raise the tire pressure to the specified value and prevent over-inflation. Moderate over-inflation is not detrimental (except to wear pattern and harshness) but rather is an asset to hot weather tire reliability characteristics. When a tire is under-inflated, it tends to flex more on each revolution, and this condition rapidly raises the tire temperature and promotes deterioration.

By EUGENE L. CONROTTO



Estwing's First Field Trip

. . . the Illinois rock-hammer manufacturer takes a trip West and gets his first chance to use his world-famous product in the field.

SHORTLY AFTER Ernest Estwing's recent retirement I received a letter from him. He was planning a trip to the desert and wanted to know if I could recommend someone to lead him to a good gem and mineral field. He ended on an intriguing note: "Although I have been manufacturing prospector's picks since 1934, I have never had the opportunity to use one in the field."

Here was the Rockford, Illinois, hammer and axe manufacturer who had armed mineralogists, amateur and professional, with the first and best rock-cracking hand tool in the world, and he himself had never swung one into a rock ledge or used one to pop open a geode! I volunteered to make the necessary arrangements for the trip.

I picked up Estwing at one of the better Palm Springs area resort hotels. Erect, bespeckled, white-thatched and the possessor of friendly blue eyes that are forever searching out interesting facets of the world around him, he looked for all the world like the Man of Distinction in this oleander-and-palm setting—except for the stiff new sweat shirt he was wearing. I shuddered to think what the catsclaw and cholla would do to his small-checked wool slacks, or what the sharp desert rocks had in store for his shiny black shoes.

In one hand he carried a pair of galoshes (it had sprinkled that morning); in the other an assortment of rock hammers.

After cheerfully but critically surveying *Desert Magazine's* overloaded jeep, he climbed in and we were off for the northern shore of Salton Sea to pick up the third member of our party, Herb Ovits.

Desert Savvy

Herb is a desert man. He has thirsted and hungered and walked over most of the back country in the Salton area. Herb, who is in his 60s, took a different road to success than did Ernest; truth is Herb took several roads. He grew up with the West and tried almost every occupation the new country offered — from cowboy to mechanic to fry cook. He later concentrated on the restaurant business, and now is "retired," but a string of rentals he owns and maintains keeps him hopping.

Herb's rock collecting hobby has taken him into the remotest corners of California's deserts. At his suggestion, we set our sights for the mineralized area near Midway Well and Wiley's Well.

First Chance

Before making camp that first night, Ernest had his long-awaited chance to slam one of his picks into a rock ledge. I watched him closely as he fingered the impermeable flow of agate growing out of the side of the sun-blackened hill. Then he took aim and drew back his hammer. Wham! Ernest sent a small piece of rock flying, but he looked first at the tip of his rock pick. Then he grinned. We had a hard time dragging him from the diggings before darkness caught us.

That night as we poked ironwood branchlets into the campfire, Ernest told about his prospector's pick and how it came into being.

In 1934 an Arizona mining engineer put a footnote to his order for two dozen Estwing all-steel carpenter's hammers: "My blacksmith has been welding pick points to the claws of your hammers, but that still doesn't do the job where busting rocks is concerned. Have you ever considered manufacturing a special hammer-pick for prospectors and mining men? There might be a market for such a product."

Estwing is not the kind of man who looks down his nose at new ideas. He is fond of saying that since cave man days, there hadn't been a basic change in man's most rudimentary tool — a stone head attached to a wooden handle — until Estwing invented the all-steel one-piece balanced hammer.

After surveying the prospector's pick market and satisfying himself that a potential existed, he added this item to his already successful hammer and axe lines. Design of the Estwing all-steel rock hammer has not changed since the first units were manufactured: a short blunt square head tapering to a long sharp pick point; thin shank leading from the head to the leather-bound handle.

Sales Mount

To introduce his new product to the world, Estwing sent free rock hammers to the geology departments of leading colleges. Soon students were writing to the Estwing sales office for information on where they could purchase hammers like those their professors were using on field trips. The college boys, armed with their new tool, rubbed shoulders in the field with self-reliant prospectors who broke their rocks with all manner of homemade striking tools.

Some of the desert rats swore by their individualistic mauling master-

ESTWING COLLECTS HIS FIRST DESERT GEODES.

pieces (many still do), but few were unimpressed by the lightweight, specially designed, unbreakable and highly functional implement that Estwing had made. Soon orders scrawled on wrapping paper and smoothed-out tobacco-can liners began arriving at the Estwing plant. It did not take long for the rock hammer to become the symbol of the mineralogist.

The big spurt in prospector's pick sales came during the post-war uranium boom. Although the big U-ore strikes were concentrated in the Colorado Plateau, the demand for rock hammers was nationwide. However, the West, on a per capita basis, was and still is Estwing's best rock hammer market.

Early Life

Ernest Estwing was born in Sweden 74 years ago. As a lad at play on the pebble-strewn Baltic beaches, he was prophetically known as the "Rock Boy" — an allusion to his bulging pockets forever crammed with pretty rocks.

He came to America in 1901 as a young man of 16, and started in the metal working trade in Rockford for six cents an hour. After two years he moved to Chicago and a job as a toolmaker.

While learning his trade by day, at night he pored over books on mechanics, machinery and metal sciences. During these early years he took out his first patent—a firearm with magazine in the stock.

In 1907 the young master mechanic and inventor quit his job and went to Washington, D.C., for a winter of patent procedure study. Then he moved to New Haven as foreman of a computing machine manufacturing company. After a year he was promoted to the model room where he helped design one of the first noiseless typewriters.

In 1928 Estwing made his big move. He took out a basic patent for a "striking tool with balanced steel handle," and set up a small manufacturing shop in Rockford. Not one of his fellow workers indicated faith in the revolutionary all-steel hammer. Some strongly advised him to reconsider giving up his promising career with an established firm. Estwing was not the first, nor will he be the last man to buck the odds and win.

In the early part of 1959 he turned over active management of his 100-employee firm to his son, Norman, 37. The Estwings also have four daughters.

When Ernest finished his story Herb threw another limb on the fire, and we turned in. Next morning as soon as it was light enough to see, our mid-western guest was sitting on his sleeping bag in his pajamas chipping away at a few agate specimens he had brought into camp the night before.

First Lessons

We moved on to new diggings after breakfast. Before the day was over Herb had taught Ernest how to spot outcroppings, mine dumps and likely agate areas in the gray landscape.

Aside from the semi-precious stones Ernest's hammer gouged out of the desert hills, he was most impressed

with the desert's great malpais lava flats — the burnt "desert pavement" that resembles a varnished mosaic covering, in many cases, thousands of acres of land.

"Who leveled off this area?" Ernest asked upon seeing his first "desert parking lot."

"No one," answered Herb. "That's how Nature left it—every stone in place."

We met several rockhounds during the second day—all of them armed with Estwing rock hammers, some tools having seen considerable service.

I pointed out to Ernest that the condition of a man's rock hammer was a pretty good index to his length of service as a rockhound. The more battered the hammer, the more likely its owner was a died-in-the-wool desert rat.

Last Forever

"It may be," said Ernest with mock concern, "that my hammers are *too* good. There won't be many sales if they last forever."

"Don't worry about that," broke in Herb. "They may be 'unbreakable' but they're not 'unlosable'—I mislay one every now and then."

We dug at the nodule beds for the good part of the afternoon, and I don't think I ever saw a man work harder at a pleasurable pastime than did Estwing.

The diggings are in trenches earlier rockhounds cut into the side of a very steep desert-varnish hill. The fist-sized agate nodules lie loose in a hard layer of gray ash about a foot below the malpais.

"Chuff, chuff, chuff," the picks sounded as they cut through the ash. Ernest worked without a break for three hours.

Treasure Hunt

"This is a real treasure hunt," he said once, not taking his eye from the exposed ash bank in front of him.

I wandered all over the hill, occasionally looking back toward the steady beat of Ernest's pick. When the "chuff, chuff" stopped I could see the white head bend over a specimen, examine it for a brief moment (Herb had given him a two-minute lesson on what to look for in a good geode), then the stone would either be discarded or placed in a special pile, and the "chuff, chuff, chuff" again drifted out across the desert.

The Baltic "Rock Boy" could not have been as happy with his beach treasures as was Ernest that night with his nodules.

HERB OVITS LED THE WAY ON THIS FIELD TRIP.

The third day out we spent the morning digging, ate a quick lunch on the hood of the jeep, then turned for home. We hadn't gone far when the vehicle's clutch arm broke and we, seemingly, were stranded 30 miles from the highway and 70 miles from the nearest telephone. Neither Herb nor Ernest batted an eye. While the former, rock hammer in hand, crawled under the jeep, the latter, also with

hammer in hand, made straight for the nearest rock outcrop. Herb banged a piece of metal back into place while Ernest cracked open a few more samples. Then we were back on the bumpy trail.

"You look like a real desert rat, now," I said to Ernest as we approached the hotel. I could not help thinking that perhaps the hotel manager would insist we use a back entrance. Three days prospecting in the open desert can make changes in a man's appearance.

The shoes were ruined, the slacks torn, the sweat shirt looked as if it had been used for a rock sack which, in truth, it had. But the man within was bouncy and full of good humor. We carried two cardboard cartons of rocks through the lobby and up to Ernest's room.

"I'm going to wash these and ship them back to Illinois," Ernest said. "I've got some ideas for improving the cutting and polishing end of this hobby, too."

I must confess that I was pleased with myself. "Here," I thought, "will be something I can tell my grandchildren: Ernest Estwing — inventor of the tool that chipped more rocks than any other single piece of hand equipment in the world—had at last had his chance to crack open a few himself—and I was there."—END

Gem and Mineral Field Reports

Good Hunting at Opal Mt. . . .

Barstow, Calif.—Several Southern California clubs reported having good luck collecting specimens at Opal Mountain. The Ventura Gem and Mineral Society said its members found green, yellow and red pastel nodules. Farther down Black Canyon they collected rainbow-colored jasper. Opalite also was found. Opal Mountain is a dry camp, and in addition to water, the rockhound should bring wood for a campfire. This is not recommended as a summer trip.

Honey Onyx—At a Price . . .

Trona, Calif.—M. Brissand, owner of the Searles Valley Rock Shop in Trona, is allowing rockhounds to collect honey onyx on his claim in the Argus Mountains. The vein is a vertical strata approximately six feet wide, and is exposed on the surface for approximately 100 feet. Brissand blasts the material to loosen it, and collectors follow up with sledge hammers and wedges. He charges $1 per collector plus 20c per pound of material for every pound over 30. No charge for aragonite crystals, according to the Convair-Pomona rock club.

Stonewall Pass Petrified Wood . . .

Goldfield, Nev.—Directions to the Stonewall Pass collecting field south of Goldfield come from the Downey, Calif., gem-mineral club. The pass area, from 5 to 6000 feet in elevation, contains petrified wood of "top notch quality" according to the hobbyists. Here are directions to the field: drive 44.4 miles north from Beatty on the Goldfield highway; turn left (west) at Stonewall Pass sign; 5.1 miles from the highway make another left turn (south) and follow the top of the ridge 3.2 miles to road which intersects your trail. Petrified wood is found in hills about a mile west, south and east of junction. Those visiting the area should bring water and firewood.

Nevada Opal . . .

Winnemucca, Nev.—Limited dump collecting and mining privileges are available "at reasonable rates" at the Firestone Opal Mine north of Winnemucca. Hobbyists interested in searching for opal should make reservations with Ed and Doug Coleman, P.O. Box 341, Winnemucca. The Firestone opal is beautiful, reports the South Bay Lapidary and Mineral Society of Hermosa Beach, Calif. Specimens are found in colors ranging from deep brown to white, with green and red "fire." Occasionally, hobbyists uncover a rare specimen showing blue or purple "fire."

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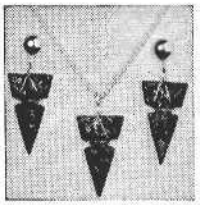

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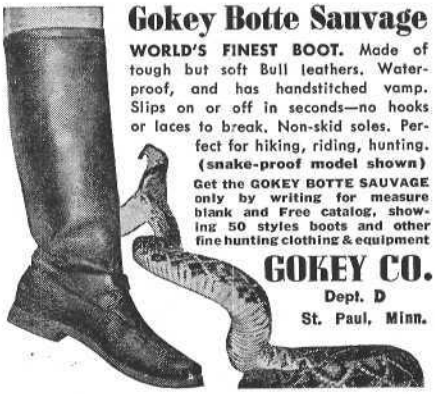

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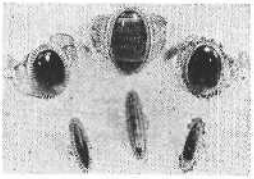

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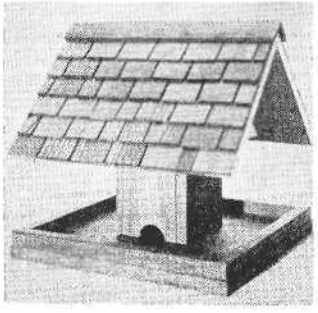

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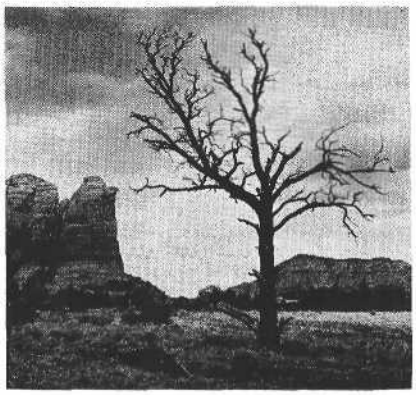

Mood Pictures

Many camera enthusiasts believe that unless the sun is shining brightly, outdoor pictures are out of the question, and the otherwise trusty camera collects dust.

This isn't so, for cloudy overcast days provide even amounts of light, and no shadows—perfect ingredients for "mood pictures." These conditions can give character and feeling to otherwise ordinary scenes. No sun, threatening clouds, and an old house in the foreground add up to the feelings of loneliness and solitude—there is just as much emotion (if not more) in an approaching storm as there is in a sun-filled day. Other focal points-of-interest for such pictures can be boats, ghost towns, old wagons, a windmill, old farmhouses.

Overcast days give a soft pastel effect to color photographs, and you can also catch "mood results." Try to have a foreground subject in red or blue colors for "zip" in your picture.

Even lighting provides excellent and often flattering results when photographing people's faces. This subject will be discussed in a later column.

As always, I take a minute or two to check the light with my meter. Most of the time a ½ to 1 full stop increase in exposure (opening the lens for more light) will be correct for both color and black and white. Use a slow shutter speed for depth of field, and a yellow filter (no filter when shooting color). The degree of light or darkness desired in your scene can be controlled in printing.

As with scenics, the subject matter and composition of "mood pictures" are important. If the subject is a dead tree, fill your negative area so the branches will silhouette against the dark sky.

Next time you have an overcast day, get out your camera and see what "feeling" you can capture on film. In the meantime, make a mental note of "mood picture" subjects in your locality.

The accompanying photo was taken near Oak Creek Canyon, Arizona. Despite the overcast day, the tree's black branches were sharply outlined against the dark sky. Camera data: Rolleicord V camera; Tri-X film; 1/125th second; f. 8; yellow filter.

BOOKS of the SOUTHWEST

CLASSIC COMSTOCK REPORT REPRINTED

The 100th anniversary of the discovery of Nevada's fabulous Comstock bonanza sees the reprinting of an important Comstock reference work: *Comstock Mining and Miners.* Originally published in 1883 for the U.S. Geological Survey, this book is far more than a "government report." Author Eliot Lord was justly impressed with Virginia City and its mountain of silver, and his book reflects the excitement of this spectacular mining district.

Western mining today is in a bad way, and *Comstock Mining* helps us remember just how important mining was in the West. Addition of a hundred superb historical photographs, drawings and maps to Lord's book adds a great deal to helping the reader drift back to mining's Silver Age.

Two other factors add interest to *Comstock Mining*: Lord reported on the Comstock four years after it had reached its peak (thus gaining a few years of perspective over other "on-the-spot reporters"); Congress very strongly questioned the need for so elaborate a record (which means the early-day taxpayers' loss is our gain).

Published by Howell-North, Berkeley, Calif.; 451 pages; $8.50.

RICHARD PEARL ANSWERS 1001 GEM-MINERAL QUESTIONS

Geologist Richard M. Pearl of Colorado College is a leading figure in the world of gems and minerals, and as such does a good job of supplying the answers in an interesting new book titled, *1001 Questions Answered About the Mineral Kingdom.* Professor Pearl knows his field—and also his audience of amateur collectors. He has written a worthy book that will entertain as well as teach.

1001 Questions covers the entire gem-mineral spectrum—from the origin of minerals and crystals, to the rockhound hobby. There are 326 pages; bibliography; index; line drawings and eight very excellent halftone plates. Published by Dodd, Mead & Co., New York; $6.

FAST-PACED INTRODUCTION TO GEM-MINERAL HOBBY

Trend Books, the publishing house that specializes in "one-shot" hobby booklets (Trend has over 150 titles covering a wide range of subjects—from *Hot Rod Annual* to *Tropical Fish*) has a new number out entitled, *The Exciting World of Rocks and Gems.*

Author Elsie Lee covers the rockhound field with enough depth to make *Rocks and Gems* a good buy. This is an ideal booklet for that uninitiated friend you think might find pleasure in the rock hobby.

The editors make generous use of photographs; paper cover; 75c.

Books reviewed on this page can be purchased by mail from Desert Magazine Book Store, Palm Desert, California. Please add 10c for postage and handling per book. California residents also add 4% sales tax. Write for free book catalog.

DESERT TRADING POST

CLASSIFIED . . . . . COLUMNS

Classified Ad rates are 15c per word, $3 minimum per issue. Copy deadline for the November issue is October 1. Mail copy to: Trading Post, Desert Magazine, Palm Desert, California.

• BOOKS - MAGAZINES

"GEMS & Minerals Magazine," largest rock hobby monthly. Field trips, "how" articles, pictures, ads. $3 year. Sample 25c. Box 687J, Mentone, California.

CALIFORNIA-NEVADA — Gem Hunters Atlas. A whole book of maps showing hundreds of rock collecting areas in these two highly mineralized states. An excellent all purpose atlas showing highways, mileages, towns, campsites, points of interest. Price $1, postpaid. Also, Gem Hunters Atlas—Southwest. Covers Arizona, New Mexico, Utah, Colorado. $1, postpaid. Scenic Guides, Box 288, Susanville, California.

OUT-OF-print books at lowest prices! You name it—we find it! Western Americana, desert and Indian books a specialty. Send us your wants. No obligation. International Bookfinders, Box 3003-D, Beverly Hills, California.

TREASURE TRAILS by Santschi, 117 pages, Doodlebug Edition, illustrated, dowsing for treasure, many devices described. A scarce item now available $1.50. Foul Anchor, DM, Rye, New York.

TRAVEL WRITERS wanted! Editors are looking for articles and photos on travel and tourism. Get your share of this profitable market. The 44-page manual "Travel Writer's Passport" gives you detailed magazine and newspaper markets and editorial requirements; foreign and American information sources; travel books and publishers. Send $1 for "Travel Writer's Passport." Martin H. Gross, 1118 Boynton Avenue, New York 72, New York.

BOOKS: "PANNING Gold for Beginners," 50c. "Gold in Placer," $3. Frank J. Harnagy, 701½ E. Edgeware, Los Angeles 26, California.

DIAMONDS IN California (new book), $1; Guide to the Comstock Lode Area, map and book, a self-guiding tour to the mines, also new, $1.50. Postpaid from Pages of History, Box 6, Sausalito, California.

• CLUBS - ORGANIZATIONS

ARE YOU interested in prospecting for minerals, or rockhunting? Write for literature to United Prospectors, 701½ E. Edgeware, Los Angeles, 26, California.

• COLOR SLIDES

GHOST TOWNS—Choice shots of Nevada Ghosts plus brief histories. Three each of Belmont, Candelaria, Marietta, Midas, Rawhide, Tybo. Two of Broken Hills, Hamilton, Kennedy, Quartz Mountain. Others available. 30c each. Packet of 20—$5. Polizzi, Box 181, Battle Mountain, Nevada.

BEAUTIFUL KODACHROMES—Desert plant collection, science, National Parks, missiles and aircraft, animals, Western states. Send 30c for sample slide and catalog. Coventry Colorviews, 10989 Roebling, Los Angeles 24, Calif.

NATURAL ARCH: In Southern California. Two color slides (35 mm.) and location furnished. Wonderful picturesque, mountain-desert dry camping area. All for $1. Explorations Unlimited, P.O. Box 402, Altadena, California.

WILD BURRO slides in Southern California—two 35 mm. color slides and location furnished, wonderful area for nature photography. Prolific with cactus and animals. All for $1. Explorations Unlimited, Post Office Box 402, Altadena, California.

• EQUIPMENT-SUPPLIES

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FOR SALE: Highland Park Comb. Unit, stand, $165. Indian jewelry, costumes, baskets and blankets. Fine custom-made jewelry, gold or silver. Canyon City Rock Shop, 830 No. Azusa Ave., Azusa, California.

• GEMS, CUT - POLISHED

TUMBLE POLISHED gemstones—best varieties—satisfaction guaranteed. $2.35 lb. plus postage. Capped: 25c each. Spring Creek Agate Shop, Lewistown, Montana.

GENUINE TURQUOISE: Natural color, blue and bluish green, cut and polished cabochons—25 carats (5 to 10 stones according to size) $3.50 including tax, postpaid in U.S.A. Package 50 carats (10 to 20 cabochons) $6.15 including tax, postpaid in U.S.A. Elliott Gem & Mineral Shop, 235 E. Seaside Blvd., Long Beach 2, Cal.

AUSTRALIAN TUMBLED gemstones, 8 different polished baroques, identified, suitable for necklace or chain bracelet. $1.10 postpaid. Or 10 different polished baroques, identified, from around the world. $1.25 postpaid. Bensusan, 8615 Columbus Avenue, Sepulveda, California.

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OPAL, AMETHYST, etc. 10 ringsize stones, ground and polished ready to set, $5. Opals, deep red, blue, green, golden flashing in all colors of the rainbow, direct from the mine, 15 for $5. Kendall, Sanmiguel d'Allende, Guanajuato, Mexico.

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POLISHED PETRIFIED wood from Mexico. Many colors. Four nice pieces for 25c plus postage. Refund if not satisfied. Paul McDonald, 1315 27th Street, San Diego 2, California.

FLUORESCENT SPECIMENS and others, from Franklin, New Jersey. Large or small quantities. Write needs. C. Clinton, 120 Broad Street, Matawan, New Jersey.

• GEMS, DEALERS

CHOICE MINERAL specimens, rough and cut gem material, lapidary and jewelry equipment and supplies, mountings, fluorescent lamps, books. Valley Art Shoppe, 21108 Devonshire Street, Chatsworth, California.

DESERT ROCKS, woods, jewelry. Residence rear of shop. Rockhounds welcome. Mile west on U.S. 66. McShan's Gem Shop and Desert Museum. P.O. Box 22, Needles, California.

VISIT GOLD Pan Rock Shop. Beautiful sphere material, mineral specimens, choice crystals, cutting materials, jewelry, bolo ties, baroques, spheres, bookends, paperweights, cabochons, faceted stones, fluorescents, jewelry findings, lapidary equipment and supplies, Navajo rugs, custom sawing—by the inch or shares. Saws, up to 30-inch diameters. John and Etta James, proprietors, 2020 North Carson Street on Highway 395 north end of town. Carson City, Nev.

"SELL ROCKS?" Yes! Sands, clays, soils, rocks, ores, fossils, many outdoor items sell for cash, trade for things wanted. Let Mother Nature finance outings, hobby, business. Details 4c stamp. "Suppliers' Bulletin" 25c. D. McCampbell, Box 503, Calexico, California.

WHY BREAK your back and your car, too? Hunt rocks in my big yard. No charge except for purchases. Walt's Rocks, on 20-26, No. of Nyssa, Oregon.

MINERALS, SPECIMENS, slabs, rough material, mountings, lapidary supplies, etc. Shamrock Rock Shop, 1115 La Cadena Drive, Riverside. Phone OVerland 6-3056.

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12 POUNDS of beautiful Colorado mineral specimens, $8 prepaid. Ask for list of others. Jack the Rockhound, P.O. Box 245, Carbondale, Colorado.

COMPLETE STOCK of crystallized and massive minerals. Please send for free list to: Continental Minerals, P.O. Box 1206, Anaconda, Montana.

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GEMMY FLUORITE octahedrons. 3 pairs $1. Each pair a different color. Gene Curtiss, 911 Pine St., Benton, Kentucky.

FOR YOUR collection—Florida's beautiful coral agate. Send one dollar (no tax) for polished specimen to The Agatery, 851 Bay Point Drive, Madeira Beach 8, Florida. Money back if not satisfied.

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WOOD, VERY colorful and good gem quality. State color and size wanted, 75c per pound, postage paid. Simonds Mines, Box 511, Hanksville, Utah.

DESERT LOVERS, collect sand. 50 specimens: $5.50; 100: $10; trial: 25c. Also plastic boxes for collections. Lor-Lew Designs, P.O. Box 324, North Haven, Connecticut.

HUBNERITE TUNGSTEN, rhodonite; good dark pink, Zunyite in Guitermanite matrix at $1 pound, sphalerite crystals, quartz and calcite crystals. For details write: The Prospect Hole, Silverton, Colorado.

MINERALS, LAPIDARY materials wanted: Wholesale lots; cash or consignment; Highgrades; crystals, groups, micros; Massives; rocks, sands, clays, fossils; Luminescents; slabs, baroques. Specifications, instructions: 25c (Refundable). D. McCampbell, Calexico, California.

MINERAL COLLECTORS—Once again we have limited number well defined borate roses 2" to 3" diameter $2 to $5. Hourglass selenite crystal singles, 75c to $2. Have rare borate crystals—inquire. Paul's Desert Gems, Box 271, Rosamond, California.

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WE ARE mining every day. Mojave Desert agate, jasper and palm wood shipped mixed 100 pounds $10.50 F.O.B. Barstow. Morton Minerals & Mining, 21423 Highway 66, R.F.D. 1, Barstow, California.

WHY FOREIGN Gemstones? Gem quality opalized and agatized woods and algae, agate geodes, white agate nodules, desert rose chalcedony, 50c lb., 10 lbs. $4.50, slabs 15c sq. inch. Add postage and tax. Rogers Brothers, P.O. Box 662, Orange, California.

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AUTHENTIC INDIAN jewelry, Navajo rugs, Chimayo blankets, squaw boots, old Indian collection. Closed Tuesdays. Pow-Wow Indian Trading Post, 19967 Ventura Blvd., East Woodland Hills, Calif. Open Sundays.

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FINE RESERVATION-MADE Navajo and Zuni jewelry. Old pawn. Hundreds of fine old baskets, moderately priced, in excellent condition. Navajo rugs, Chimayo homespuns, artifacts. A collector's paradise! Open daily 10 to 5:30, closed Mondays. Buffalo Trading Post, Highway 18, Apple Valley, California.

THREE FINE prehistoric Indian war arrowheads $1. Flint scalping knife $1. Rare flint thunderbird $3. All $4. Catalog 10c. Arrowhead, Glenwood, Arkansas.

FOUR ARROWHEADS $1; 3 birdpoints $1; 5 scrapers $1; 2 drills $1; atlatl point (used before bow and arrow) $1; 3½" spear $1.50; 4" spear $2.50; flint celt $2; granite celt $2; flint tomahawk $2.75; grooved axe $3.50; grooved war club head $4; ancient Yuma type point, small $1.50; medium $2.75; large $5. Strand white trade beads $1.50; strand black beads $2.75. Zuni carved turquoise fetish $3.75. (Will buy collections Indian relics—Beadwork.) Paul Summers, Canyon, Texas.

PINE VALLEY Trading Post deals in authentic Indian goods, rugs and jewelry, also gift items, imports. On Highway 80, 43 miles east of San Diego. Mailing address, Box 208, Pine Valley, California.

RARE COLLECTION; seven sinew sewed leather items, genuine dyed porcupine quillwork decorated. Lost art. Excellent condition. James Coe, 5336 No. 34th Street, Phoenix, Arizona.

INDIAN CRAFTS and artifacts, buffalo skulls, mounted Texas longhorns. Price list free. Thunderbird Trading Post, Highway 80, P.O. Millsap, Texas.

INDIAN RELICS, illustrated pipe booklet, illustrated relic guide, two tribal maps, $1. (Dealers write). Allen Brown, 510 North Dearborn, Chicago 10, Illinois.

APACHE TRADING Post, Angeles Forest Highway, R.R. 3, Box 94, Palmdale, California, featuring Indian artifacts, antiques, gems and minerals. Open Sundays.

• JEWELRY

JEWELRY PARTS—why pay retail? Catalog lists bracelets, sweater clips, tools, bails, cuff links, bell caps, Epoxy-Adhesive, earrings, belt buckles, chains, neck clasps, key chains, lariat slides, tips or cords, as well as ring mountings, pendants, brooches, silver, and lapidary machines. Prompt first class mail delivery assured. All items sold on money-back guarantee. Send 4c stamp to cover postage on your catalog. Rock Craft, Box 424D-1, Temple City, California.

APACHE TEAR Necklace, earrings, key chain, bola tie, all four pieces $5.00 or $1.50 each. Free specimen with each order. Include 10% Federal tax. Rock Baubles Shop, 8922 No. Forest, Sunnyslope, Arizona.

HANDCRAFTED GEMSTONE jewelry — Individual design—Bolo ties, Masonic emblem mounted on drilled gemstones. Western Gems, 2407 Ames, Edgewater, Colorado.

"WANTED!" PRETTY little pink ears for lovely earrings. Ideal Christmas gifts. Apache tears earrings gift boxed $1. Limit of four, please. George, 3229 W. Taylor, Phoenix, Arizona.

BOLA AND jewelry finding price list. Compare our prices before you buy. Please include 10c to cover cost of mailing. Dealers send resale number for wholesale list. The Hobby Shop, Dept. DM, P. O. Box 753, 619 North 10th Avenue (Hiway 30), Caldwell, Idaho.

LET US mount your gems. Send us your own personal design. We manufacture mountings and set your stone in 14K gold, silver, or platinum. Quality workmanship, reasonable. Snearly Mfg. Jlr., 307 Schuter Bldg., El Dorado, Arkansas.

UNIQUE, LOVELY bracelet, of ten different identified gems from around the world, set flat on untarnishable gilt Hamilton Plate mounting. $3 postpaid. Bensusan, 8615 Columbus Avenue, Sepulveda, California.

BLACK JADE and sterling silver necklace or earrings, screw or pierced. In attractive box, $3.75. Both $6.75. Oregon Gem Supply, Box 298, Jacksonville, Oregon.

• MAPS

SECTIONIZED COUNTY maps — San Bernardino $1.50; Riverside $1; Imperial, small $1, large $2; San Diego 50c; Inyo, western half $1.25, eastern half, $1.25; Kern $1.25; other California counties $1.25 each. Nevada counties $1 each. Topographic maps of all mapped western areas. Westwide Maps Co., 114 W. Third St., Los Angeles, California.

"TREASURE MAP of the Great Mojave Desert," finest guide to Mojave's treasure of gems, minerals, rocks and recreation, 22x33", 26 detailed maps to special localities. $1 postpaid. Gemac, Box 808J, Mentone, Calif.

• MINING

ASSAYS. COMPLETE, accurate, guaranteed. Highest quality spectrographic. Only $5 per sample. Reed Engineering, 620-R So. Inglewood Ave., Inglewood, California.

WESTERN MINING News, monthly, for miners, prospectors, claim owners, $2 per year. Sample copy 25c. Box 787, Sonora, Calif.

$1 FOR gold areas, 25 California counties. Geology, elevations. Pans $2.75, $2.25. Poke $1. Fred Mark, Box 801, Ojai, California.

HAVE SIMPLE inexpensive process to obtain crude oil from dry oil shale rock. Also have the shale. Need partner with finances. Contact John H. Medlen, Box 102, Plainview, Nebraska.

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CHIA AS featured in article, "Hot Cakes and Chia" for sale—limited quantity, $7.50 lb. Inquiries to Bruce Gregory, Box 147, French Camp, California.

DESERT WILDFLOWER seeds. Six kinds in separate packets mailed for $1. Theodore Payne, Wild Flower Specialist, 2969 Los Feliz Blvd., Los Angeles 39, California.

RAISE GOURDS—colorful, very fascinating, take little space, make wonderful hobby or crafts can develop into commercially profitable business. Complete instruction kit, craft sheets, seeds, copy magazine, etc., all $1 prepaid. Price lists of allied crafts included. Joycrafts, 337D Pittock Block, Portland 5, Oregon.

MORE CLASSIFIEDS ON NEXT PAGE

TRADING POST --- *(Continued)*

• REAL ESTATE

DESERT ACREAGE and lots, improved, 6 acres in China Lake suitable for trailer park, $8000. Need one here. 2 acres Hesperia, trees, a steal at $1500 ½ acre. One of the first and best Salton Sea, $3,295. 29 Palms highway lot, $3000, mountain lot, $2500. All bargains. Edith Billmyer, 3282½ Bay Side Lane, San Diego 8, California.

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80 ACRES near Lockhart, level, $125 acre, 25% down. 20 acres Highway 395, level, north of Adelanto, $150 acre, 10% down. 2½ acres west of Adelanto, level, $1495, 10% down. 2½ acres Lancaster on paved highway, shallow water, level, $2495, 10% down. Dr. Dodge, 1804 Lincoln Blvd., Venice, Calif.

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BOOMING ARIZONA: $5 down, $5 monthly, $95 per lot full price. Utilities available, boating, fishing, rock hunting nearby. Write Box 3314, North Las Vegas, Nevada.

20 ACRES: $6,000, $300 "or submit" down, $60 month. 5 acres, $1750, 10% "or submit" down, $25.00 month. Well located. Write owner for details. Grant Williams, P.O. Box 133, Phelan, California.

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FOR SALE desert-colored objects; ink wells, whiskey flasks, Ford headlight—all very old. Many others, desert antiques, rocks, old tobacco cutter, collector's items. 35035 77th St. Box 147, Littlerock, California, at Shirley Lumber Company, 2 blocks off Highway 138.

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LADY GODIVA "The World's Finest Beautifier." For women who wish to become beautiful, for women who wish to remain beautiful. An outstanding desert cream. For information, write or call Lola Barnes, 963 N. Oakland, Pasadena 6, Calif., or phone SYcamore 4-2378.

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1951 4-WHEEL drive Jeep station wagon, has 1956 4-cyl. F-head engine. Excellent condition, good tires, $785. Albert Starr, 1615 Sweetbrier Street, Palmdale, California.

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Photos should be black and white, 5x7 or larger, and of a Desert Southwest subject. For non-winning pictures accepted for publication, $3 each will be paid. Address: Photo Contest.

$5: Poem of the Month

Poems must be original, previously unpublished and not more than 24 lines in length. Only desert subjects considered. Address: Poetry Contest.

$2: Recipes of the Southwest

Recipes limited to Mexican, barbecue or camp-out dishes. Address: Recipes.

* * *

Contributions cannot be acknowledged or returned unless postage enclosed.

Mail to:

DESERT MAGAZINE

Palm Desert, Calif.

A WINTER VISIT TO GRAND CANYON

Grand Canyon in the "off season": the crowds have gone . . . the awesome view is sharp and clear . . . the winter air is like wine.

By WELDON F. HEALD

THERE IS NO best time to visit the Grand Canyon. That smashing, breathtaking Arizona gorge is oblivious to seasons. However, each month of the year shows it in a slightly different mood. Summer, winter, spring and autumn all bring out special characteristics that make the Grand Canyon one of the nation's most pleasant and fascinating year-round vacation centers.

But those who know the Southwest country well and have seen the subtle changes of the seasons are apt to have a favorite time of year. Mine is winter. Then, I am convinced, the vast mysterious enchantment of the Canyon is strongest.

In the first place, the summer crowds have left. Of the more than one million visitors to Grand Canyon National Park during the past 12 months, over 700,000 came in June, July and August. At that time human activity on the South Rim sometimes resembled Los Angeles' Seventh and Broadway during rush hour. On the other hand, in the three winter months last year only 72,000 people entered the Park. So the ratio is about 10 to one! Park Superintendent John S. McLaughlin puts it this way: "The chief difference is that in winter everything slows down to a quiet leisurely pace. Even the casual visitor notices it."

This lack of crowds, noise and restless human movement seems to bring the silent immensity of the Grand Canyon much closer. Its impact then can be as powerful as a physical blow. In summer, people look, admire and exclaim with thousands of others, as they would at a great painting in an art gallery. But in winter one can feel the Canyon, live with it and become a part of it.

From November to March the weather there is pure delight. The clear thin air has a tingling winelike energy-giving quality that makes one glad to be alive. Gone are the high-piled thunderclouds and slightly blurred edges of summer. Instead, each butte, mesa and cliff stands out in sharp relief under the blue Southwestern sky. And at night myriads of stars shine crisply overhead and extend undimmed to the distant horizons. The occasional snowstorms are also memorable events, and never are the Canyon's kaleidoscopic colors more brilliantly displayed than when sharply contrasted with a white carpet of snow in the foreground.

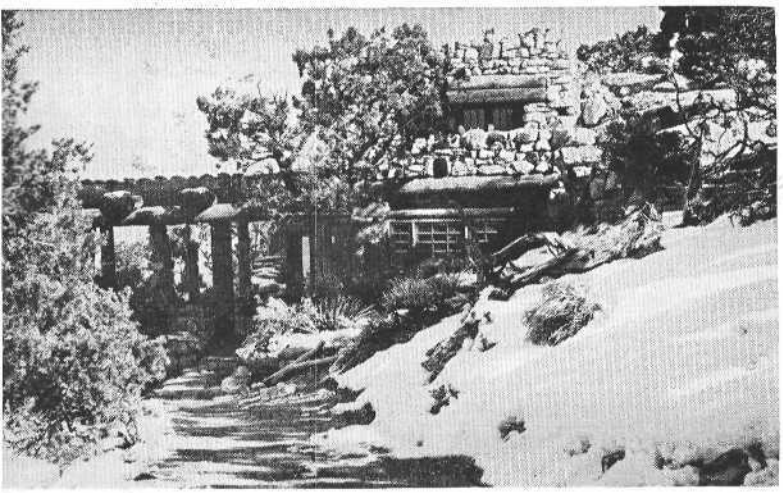
No one really knows the Grand Canyon who hasn't hiked or ridden the trails into its depths. And winter is obviously the best time for that. Temperatures below the rims in summer may be anywhere from 90 to 120 degrees, and shade is almost non-existant. But winter climate in the Canyon is cool and pleasant, with daytime readings

between 50 and 75 degrees. The sun is warm and life-giving, but never hot.

Finally, there's the matter of accommodations. During the summer one hasn't much chance of staying overnight at the hotel, lodges or cabins unless reservations are made at least four weeks in advance, while day after day the campgrounds carry the "Sorry, Full Up" sign. At the height of the season people not equipped for camping have had to drive 60 to 100 miles from the Grand Canyon to find a place to sleep. It's a good idea to have reservations in winter, too, but there's usually a chance of gettting some kind of accommodations without them.

So by all means visit the Canyon in spring, summer or fall, and consider yourself fortunate whatever the season. But take my advice and don't overlook the winter. For I believe it is then that the wonders of the Canyon Country can be appreciated to their fullest.

Most years the road over the high forested Kaibab



HERMIT'S REST IS A CHARMING PLACE AT GRAND CANYON'S EDGE.

Plateau on the Canyon's North Rim is blocked by snow by November, and it remains closed until mid-May. However, the South Rim is open all year. State Highway 64 is kept cleared throughout the winter, and I have driven the 60 miles from Williams at a good clip without chains after a foot-deep snowfall the night before. Bus and railroad connections are maintained, and nearly all facilities, services and accommodation at the South Rim are available during the winter months. Most of these are efficiently operated by the Fred Harvey Company, famed subsidiary of the Atchison, Topeka & Santa Fe Railway. There is no off-season advantage in lower costs, though, since the rate schedule is set by the Park Service and is the same throughout the year.

The Village

It takes a couple of hundred people to administer and operate the 1050-square-mile Grand Canyon National Park. Headquarters and housing for the permanent employees of the Park Service and concessionaires are centered in Grand Canyon Village. This is a rustic settlement among the pines, south of the rim. Here are various stores, market, post office, garage and gas station. Protestant, Catholic and Mormon church services are held each Sunday, and two evenings a week there are movies at the Community House.

West of the Village is the Auto Lodge, which has the most economical tourist accommodations. These include cabins with or without showers, housekeeping units and a reasonably priced cafeteria. For winter visits the Auto Lodge is preferable to the nearby campgrounds for, unless one has a trailer, the below-freezing night temperatures can be pretty rugged. A large new campground and a Trailer Village, with utility hookups, are being built a half mile east of Grand Canyon Village, but they won't be ready until the summer of 1960. Also located in this area is the recently completed Yavapai Lodge, providing motel-type rooms.

But, of course, the Rim is the main attraction. Right on the brink are Bright Angel Lodge and El Tovar Hotel. The former forms a picturesque little village of log and stone construction, comprising a main building and guest cottages, coffee shop, grill, cocktail lounge, soda fountain and gift shop. There is, I am told, even a beauty shop there. The El Tovar, named for one of Coronado's lieutenants, has been one of America's most famous resort hotels for over half a century. It is a spacious three-story structure of boulders, logs and thick pine planks, with more than a hundred rooms. Perhaps it lacks grace and beauty, but it is almost as distinctive as the Canyon itself.

Several times Phyllis and I have stayed at the El Tovar over New Years. There are no festivities or raucous parties, but we always find a quiet heart-warming cheer in its roomy comfort, big fireplaces crackling with pungent pinyon and juniper wood, and delightful meals in the huge dining room. At midnight we stand on the edge of the Canyon, feeling rather than seeing the gigantic black void below us. We also sense the compelling power of complete silence. Then we know that we can face whatever may happen in the coming year.

Indian Neighbors

East of El Tovar is the Hopi House, a reasonably authentic reproduction of a terraced Indian pueblo dwelling. It contains a varied collection of Southwestern curios and souvenirs, as well as examples of native arts and crafts. In the Canyon region live the Navajos, Hopis, Paiutes, Havasupai and Hualpai, and here each afternoon members of these tribes perform their dances. Some of them are excellent, and the most agile and skillful hoop dance I've ever seen was in the Hopi House at dusk on a snowy February day. But don't be startled by the dancers' feathered war bonnets. They may not be indigenous, but they're mighty impressive.

From the Village and El Tovar the paved West Rim and East Rim drives follow the wooded edge of the Canyon. From them spur roads go out to the most scenic outlooks. West Rim leads past Hopi, Mohave and Pima points to Hermit's Rest, eight miles. This is a charming place built of stone and logs, which clings to the rim directly above the spectacular plunging walls of Hermit Amphitheater. If I were to choose the perfect Southwestern home in architecture, setting and climate, it would be Hermit's Rest. Refreshments are available and there is nothing more stimulating on a sparkling winter morning than a cup of hot soup in front of the huge fireplace, with a backdrop of the Canyon through the big plate glass windows.

The 23-mile East Rim Drive is a part of through State 64 to Cameron. It threads fine open stands of ponderosa pine, past Grandview, Moran and Lipan points to Desert View. Here is the round stone Watchtower (see color illustration) supposedly modeled after the lookouts the prehistoric Indians built. It has, however, the modern touch of snack bar, soda fountain and gift shop.

Tower View

Many think the finest panorama to be had on the South Rim is from the Watchtower. Below is a long reach of the Colorado River winding through the bottom of the Canyon; to the east stretches the glowing pinks and reds of the Painted Desert; and the southern horizon is cut by the lofty San Francisco Peaks rising above the forests of the Coconino Plateau like giant cones of vanilla ice cream. Throughout the winter there is daily bus service mornings to Hermit's Rest, and after lunch to Desert View.

El Tovar is also the starting point for two almost level blacktopped trails. One goes to the Powell Memorial and Hopi Point, about a mile. This is a particularly good spot for sunsets, and the annual Easter Sunrise Services are held here. The stone monument honors Major John Wesley Powell and his companions who first explored the canyon-guarded Colorado by boats in 1869. The East Rim Nature Trail leads in one and one-half miles to Yavapai Point Lookout. This is a rustic stone building with a magnificent view, featuring geological exhibits and talks on the Canyon by Park Rangers.

Understanding the Canyon

These are part of the interpretive program, and if one leaves without a fairly good knowledge of the great Canyon's geology, history, ethnology, wildlife and vegetation, it isn't the fault of the Park Service. The Visitor Center, a half-mile east of the Village, tells an absorbing story about these things with dioramas, photographs and exhibits; the Tusayan Museum, at the pueblo ruins near Lipan Point, graphically depicts the early human history of the region; and in winter the nightly illustrated campfire programs given by ranger-naturalists are held in the lounge of Bright Angel Lodge. And always on hand at any of these places is a uniformed Park Ranger to answer questions—foolish or otherwise.

There are two ways to explore the trails below the rim —muleback or on foot—and I'd advise the former method for everyone except very strong hikers. The Canyon is a rather formidable upside-down mountain and the long tough pull comes at the end of the trip. I was out of condition the first time I walked to the river, and there were moments struggling back up the final switchbacks when I thought I'd never make it. To the uninitiated, sitting a mule can be a hair-raising experience on the dizzy winding trails, but these sure-footed animals are well-trained, and I've never heard of an accident due to their slipping or stumbling.

The regularly scheduled all-expense overnight trip to Phantom Ranch starts each morning at 10 and returns to the top about 1:30 the following afternoon. The eight-mile descent to the Colorado is made on the famed Bright Angel Trail. Then the south bank of the muddy coffee-colored river is followed for two miles through the grim Inner Gorge, hemmed-in by walls of black schist 1000 feet high. This is some of the oldest rock in the world, formed perhaps a billion years ago. The river is crossed on the swaying suspension bridge, and Phantom Ranch is a mile beyond.

This delectable secluded retreat nestles under towering cliffs at the bottom of the Canyon beside clear foaming Bright Angel Creek. It consists of a group of rustic cabins in an oasis of spreading cottonwood trees, with a central lodge and swimming pool, the latter a bit on the chilly side in winter. After a night spent in the depths, the muleback parties return to the South Rim via the direct, seven-mile Kaibab Trail to Yaki Point, three miles east of El Tovar.

Hiking, though, is much the better way to see and enjoy the Canyon, and seasoned foot-burners and knapsackers will find winter conditions ideal. But these are desert trails where water is scarce and canteens are a must. There are several emergency telephones along the main routes, but "drag-outs" for stalled hikers are expensive. A couple of friends of mine were charged $50 for a guide and mules to come down for them.

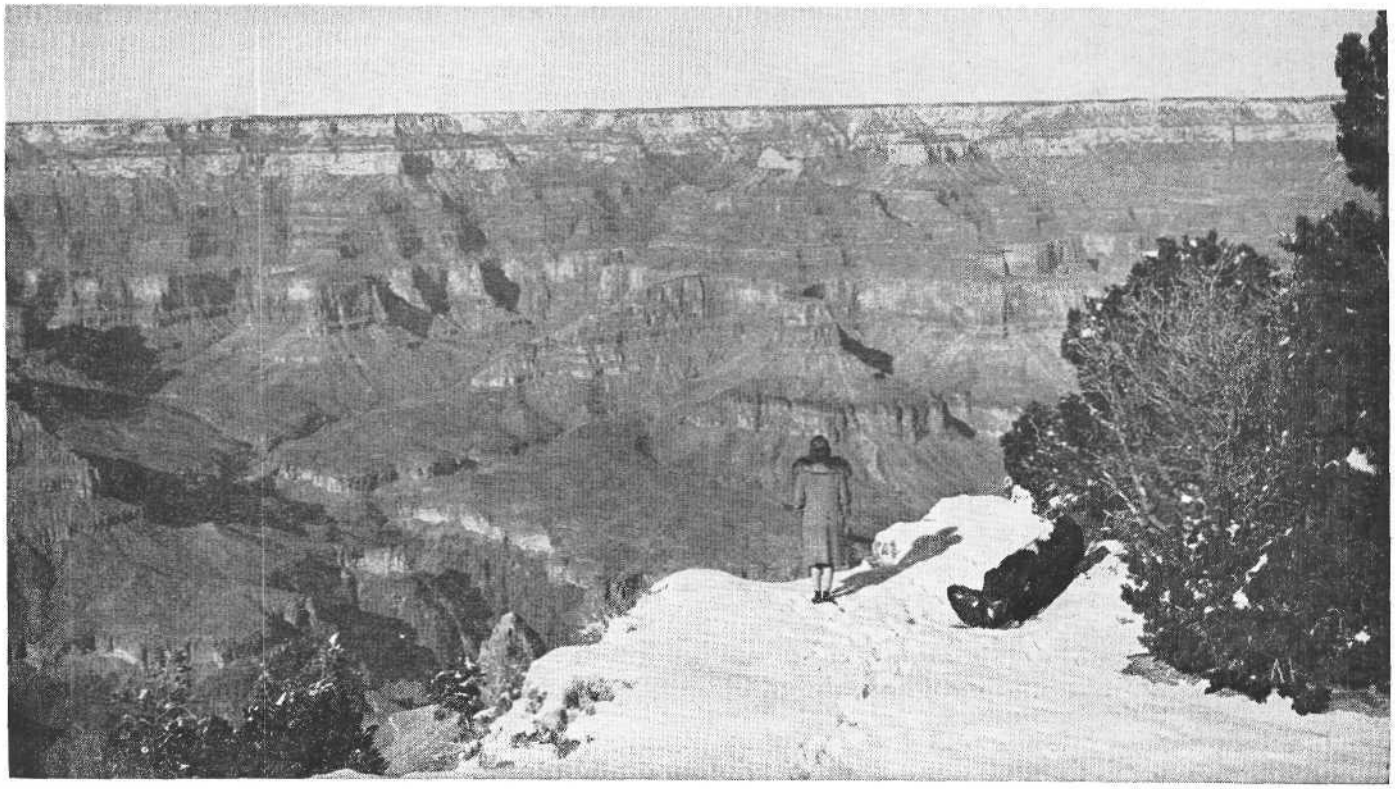
One-Day Hikes

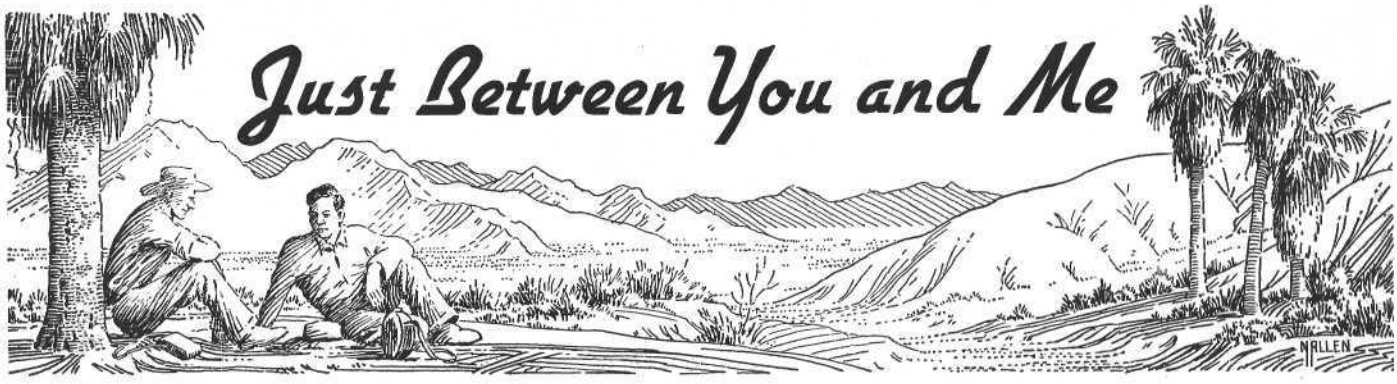
Some good one-day hikes are to Indian Gardens and Plateau Point on the Bright Angel Trail, and the Fossil Beds and Cedar Ridge part way down the Kaibab, while Phantom Ranch is an excellent trail center. Campgrounds are located nearby, and one-day or overnight knapsack expeditions may be made to Roaring Springs, nine and one-half miles, source of Bright Angel Creek, or to Clear Creek, nine miles.

Phantom Ranch is 2550 feet above sea level, and Yaki Point has an altitude of 7250 feet—a 4700-foot difference. Winter temperatures at the bottom average about 20 degrees higher than on the South Rim. This is approximately

Continued on page 43

SNOW ON GROUND RARELY LASTS MORE THAN A DAY ON SOUTH RIM.





By RANDALL HENDERSON

IN AUGUST the Hopi Indians held their annual Snake Dance rituals on their reservation in northern Arizona. At the end of each dance the snakes — the "little brothers" of the tribesmen—were released, and crawled off to their underground abodes to convey to the gods the prayers of the Indians for abundant rainfall and an ample harvest. This is a religious ceremonial, a ritual in which the older Indians at least have faith.

To those of us raised in the Christian faith, the Hopi concept seems mere superstition. Perhaps they regard our Hebraic story of origin as told in the book of Genesis also as mythology. Who among us is wise enough to say which is right—or if either concept is the truth?

I once heard a Christian missionary suggest the origin of these ancient religious beliefs. "Primitive people," he said, "lived close to the earth, and their direct dependence on the soil and rain and sunshine had a profound influence on their habits and customs, and especially on their religious beliefs. In the gradual emergence of a tribal culture, the priesthood, claiming superior knowledge or occult power, and lacking the scientific knowledge of the more civilized peoples today, fabricated strange and weird interpretations of natural law, and these became the religious traditions of the tribesmen, passed along from generation to generation.

"Yet while the religious rituals of these people, stemming originally from the fantasies of their medicine men, often seem silly and even barbarous according to our standards, we should not criticise them too harshly. For truth-seeking Christians today recognize the story of creation as told in the Book of Genesis as the fantasy of a Hebraic priesthood which felt impelled to explain the origin of this earth and its people at a time when there was no scientific knowledge to guide them. And I should add that acceptance of the story of Genesis for just what it is—a delightful symbolic myth—in no way detracts from the spiritual beauty and the stature of our religion.

"It is impossible today to teach biology and geology in the school class rooms without reference to the evolutionary theory of life—and when the time comes I intend to forestall confusion and perhaps skepticism in the mind of my teenage son by reconciling in this manner the seeming contradiction between science and the first book of the Bible."

* * *

Recently I had the opportunity to revisit some old desert waterholes which 40 years ago were flowing springs the year around. Today three of them are dry, and the vegetation indicates they have been without water for years. The other two have shrunken to mere seepages where muddy water stands only in the hoof tracks of the cattle which come there to drink.

This condition—the lowering of water tables—is reported to exist in many sectors of the Southwest. The tree-ring records indicate that wet and dry cycles have been occurring in this region for hundreds of years, and it is possible we may be in the drouth period of a cyclical change. But we also know that in many places in California and Arizona the underground water supply is being used faster than it can be replaced through normal sources.

Water, like the air we breathe, is something most Americans have always taken for granted, especially those who reside in the cities where the source of water is the faucet in the kitchen or bathroom, and little thought is given to the origin of supply.

But with population and industry multiplying as at present, I suspect the day is not far distant when in every home, the younger generation will be taught thrift in the use of water. Those of us who for many years have depended on cesspools and septic tanks for sewage disposal already have learned we can save ourselves a lot of expense and headaches by using water sparingly. I believe the day is inevitable when water must be rationed in many of our Southwestern communities—but that day may be postponed indefinitely, and I am sure it will be less painful to those who already have acquired habits of economy in the use of water. Long ago I learned that one can get just as clean in a shower as in a tub full of water—and with only about one-fourth the consumption of that precious fluid, water.

* * *

I do not want to start a feud with my old friend Otis (Doc) Marston, but I suspect he is one of the instigators of a plot which I thoroughly disapprove. Doc Marston has been running the rapids in the Colorado River for more than 15 years, and he is one of the best oarsmen who ever steered a boat through the raging waters of Sockdologer Rapids in Grand Canyon. I know, for I rode through the Grand with him and Norman Nevills in 1947.

But Doc doesn't like to be called a River Rat—the term generally applied to those adventurous folks who year after year go back to the tumbling cascades of western rivers for recreation or as a vocation. Marston wants a more dignified term than River Rat. He proposes that the men and women of the white water fraternity be known as Canyoneers.

It is a classic name, I will admit, but I'm agin it. For the same reason that I object to referring to mule-skinners as muleteers, or pirates as buccaneers. If we let these modernists have their way there'll be no stopping them. They'll even be wanting to call a prospector a picketeer and a Desert Rat a Cactuseer. And heaven forbid, says I.

Winter at the Canyon--

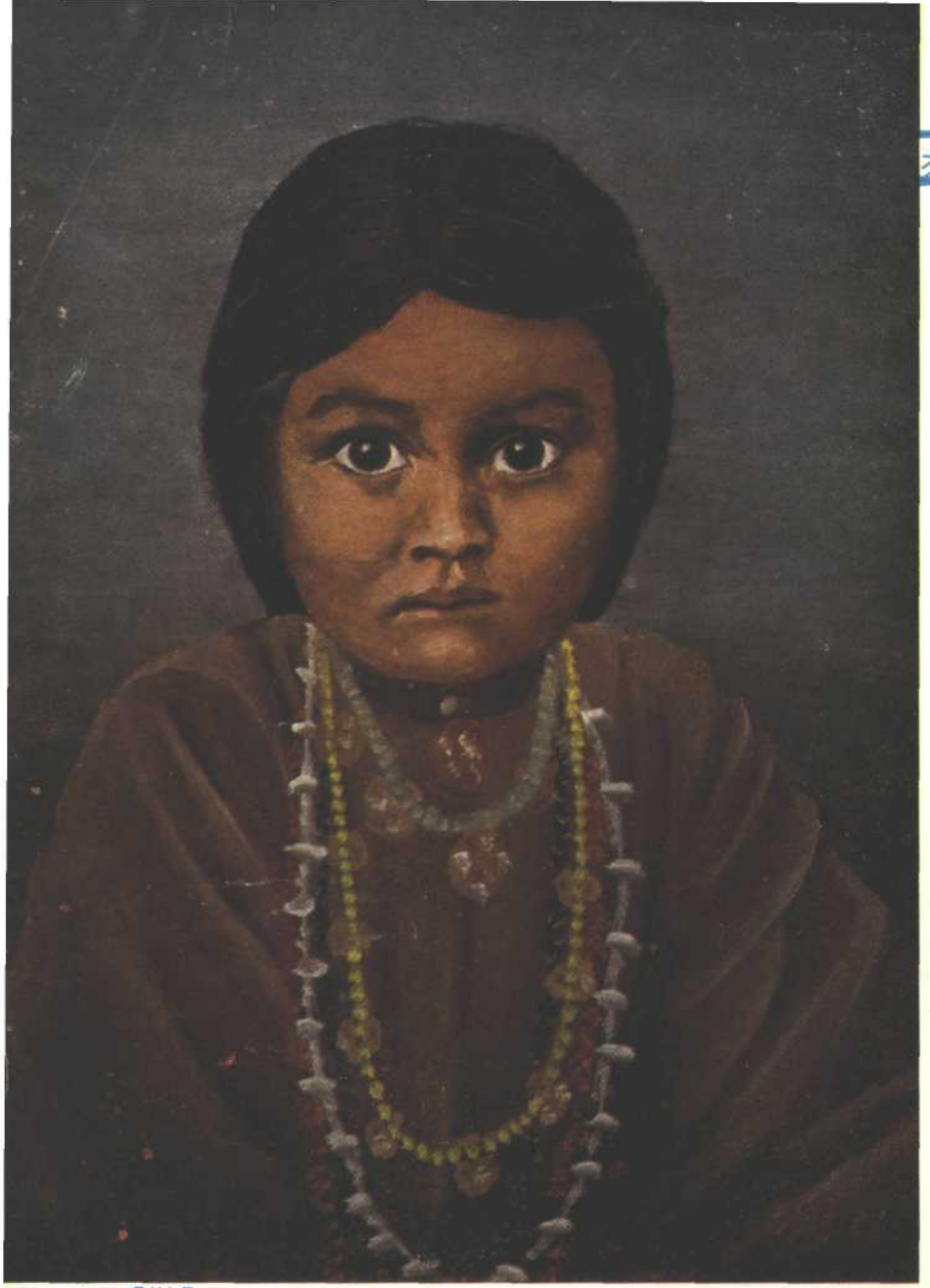
Continued from page 41

one degree for every 235 feet, and the climatic difference is roughly equal to that between southern Canada and northern Mexico.

But even at the Rim the winters are not severe and the ardent Arizona sun tempers the crisp invigorating air. Daytime shade temperatures usually range in the forties and fifties, with nights around 15 to 20 degrees. The average snowfall is about 60 inches. But winter precipitation is less than in summer, and storms occur on the average of only five or six times a month. The ground is seldom snow-covered for more than a day or two, and snow rarely piles up from storm to storm.

So, all in all, the Grand Canyon is hard to beat as a wintertime vacation playground. It is one of the world's greatest natural sights and is called a masterpiece of erosion.
—END

WATCHTOWER ON THE SOUTH RIM OF GRAND CANYON IS MODELED AFTER LOOKOUTS BUILT BY THE ANCIENTS. PHOTO BY CARLOS ELMER.



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