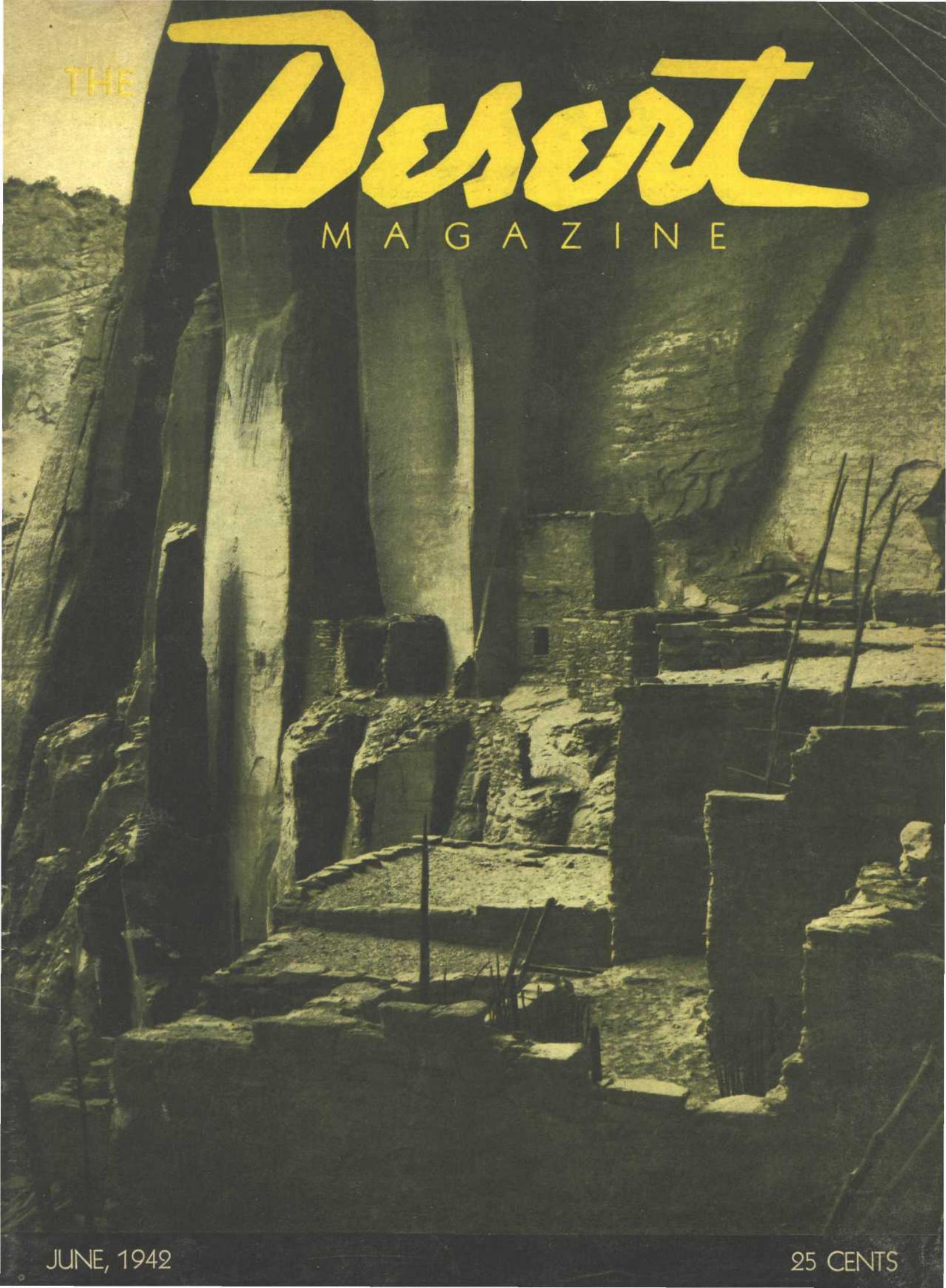


THE

Desert

M A G A Z I N E



JUNE, 1942

25 CENTS

LETTERS...

Food for Men's Souls . . .

Humboldt, Arizona

Sir:

With your beautiful DESERT for May still warm in my hands I dash to my typewriter to defend Marshal South's philosophy. While I, too, desired to hear more about that mesal roast, I would sorrow to have it at the sacrifice of the author's inspiring philosophy. The Marshal South feature *as is* is one of the highlights of your gracious magazine. In days such as these man can live without a knowledge of mesal, or other roasts, but he cannot live without a philosophy. And if Marshal South has to "sell one of his loaves" may he still continue to give us "white hyacinths for our soul."

DORA BELLE LEE

Memory of Happy Days . . .

Altadena, California

Dear Lucile Harris:

Thank you kindly for sending on the extra binders and the two minus copies with my subscription renewal. I appreciate that courtesy—and here's my check.

I am having a GRAND time checking over my now complete files of The Desert Magazine—for which I wouldn't take a Pegleg nor a Lost Dutchman—and re-checking the many familiar facts, places and people that come trooping off their pages to elbow memory and poke reminiscent fingers into my aging ribs. For be it known that I was indicted a Desert Rat, B. D. Q.—before Desert Quiz—by whoever it was that defined that critter as "one who habitually, and of his own free will, frequents the desert." If I now plead guilty to perpetrating a total score of not less than 15—nor more than 20 correct answers to the Desert Quizzes, am I to be sentenced a two-time Rat—or what have you?

But whatever rat-ing I draw, the Desert Magazine is rated one of the best by my family. We like it as is . . . the varied departments, the quality of composition, the philosophy of ye editors, the excellent pictures . . . even the Willie boys . . . and the poetry. By the way would you rather have a poem or a rock that floats?

EMMA CHRISTINE ROOME

When the Prodigal Returns . . .

Wymore, Nebraska

Dear Mr. Henderson:

After having spent three restful years on the desert near Florence, Arizona, it was necessary that I return to my native Nebraska. Now after three years here I feel my heart is deeply rooted to the desert.

When reading your magazine I find it so very genuine, free from "dressing up" and exaggeration, that it makes me homesick almost to the point of tears.

I sincerely hope that some day I may return to the beloved desert where I know the little kangaroo mice will dance a welcome, the tortoise will stick his neck out for a "Hi, there," the gila monster may blow himself for a "Howdy," the packrat leave his respects, the quail will come, as always, in full dress parade, and perhaps even the cholla will be stickin' 'round.

In the meantime the desert will have to come to me through my subscription to your grand magazine. I hope you will always keep it as real as it has been in the past.

JO SMITH

Where's the Biggest Tree? . . .

Banning, California

Dear Henderson:

I wonder if you know the circumference of the largest Joshua tree to be found on the desert? I measured one up east of Cima on the Mojave desert that was 10 feet around, three feet above the ground and below the branches, or do you call them limbs?

Recently I saw a picture of one that a chap claimed was 11 feet. I would like to know where the champion is located, or does some one know a bigger one yet?

JIM PIERCE

Getting Stuck in the Sand . . .

San Pedro, California

Dear Editor:

I read the letter from that artist Clyde Forsythe about how to get through the sand. Sounds all right. But what's bothering me is how to get out on the desert where there is some sand. I've been putting in so many hours buildin' boats I haven't even seen the desert for months, and my feet sure get to itchin' sometimes. I would donate a month's overtime to charity just for the fun of getting stuck in the sand once more.

BILL HEVENER

In Defense of Fast Travel . . .

Rankin, Illinois

Dear Mr. Henderson:

After reading "Just Between You and Me" page of the Desert Magazine for April, I disagree with you.

Just suppose you had never seen a mountain, a desert, an Indian reservation, an ocean, a glass-bottomed boat, San Francisco's great bridges, the Redwood forests, the National Christmas tree, the General Sherman tree, the stupendous dams of the western rivers, Salt Lake with its Great Salt Lake, the wonderful roads through the national parks, and the various wonders of the western states—would you be insane if you took a glimpse when given an opportunity?

To one coming from the Corn Belt states, the West is thrill upon thrill. We not only have wind-shield stickers but have collected descriptive literature on all interesting places. That and my diary have enabled me to enjoy a complete file of Desert Magazine.

Without this "racing vacation" D.M. would probably be unknown to me. Well—I just don't like to think what I would have missed.

MRS. A. C. DROLL

Mrs. Droll: You win! But I hope you have the opportunity sooner or later to return and get better acquainted with our desert.

—R.H.

The Philosophy from Yaquitepec . . .

Tujunga, California

Dear Sir:

I want this letter to go down on record in defense of Marshal South, who was, to me, belittled by a C. H. Walker in the May issue of Desert Magazine. Bum philosophy, the man writes. From a letter like that you can see that he is interested in the material things of life. He is not interested in getting the peace of mind that the desert gives one, and which Marshal South puts forth so well in his articles.

Now that we are engaged in war, and can not get about as we would like to, I for one rely upon such good philosophy about the desert; which you can gain by roaming the desert. Now we have to stay home and help get this mess over with, so we can go on roaming the desert; and it's articles like South's that help the desert lovers through these times.

Keep up the good work of your magazine and continued success to you.

BILL HIBBETS

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DESERT Calendar

- JUNE 1-2 Commencement, New Mexico Military Institute, Roswell.
- 1-4 Intermountain junior fat stock show, North Salt Lake City, Utah. G. Roy Backman, secretary.
- 3-5 P. E. O. state convention, Raton, New Mexico.
- 4-7 Sheriff's Posse Southwestern Championship rodeo, El Paso, Texas. Felix Hickman, chairman.
- 6-7 Hot Springs, New Mexico, annual regatta at Elephant Butte lake.
- 7-9 State V.F.W. Encampment, Clovis, New Mexico, with western Texas participating.
- 7-10 Convention of New Mexico County Officers association, Taos.
- 7-24 Exhibit of watercolors by Eliot O'Hara, of Tucson and Goose Rocks Beach, Maine, at Museum of Northern Arizona, Flagstaff.
- 8-AUG. 1 Thirteenth annual Field School of Art sponsored by University of New Mexico at Taos. Headquarters at Harwood Foundation, dormitory quarters in historic Gov. Bent house. Brooks Willis, director.
- 11-13 New Mexico Public Health association meets at Raton.
- 13 San Antonio day celebrated by Corn Dance at Taos and Sandia Indian Pueblos, New Mexico.
- 14-17 Regional conference, Business and Professional Women's clubs of Colorado, Wyoming, Nebraska, Arizona and New Mexico, at Albuquerque.
- 15-20 Joint convention of Utah Academy of Science, Arts and Letters and the American Association for Advancement of Science at University of Utah, Salt Lake City.
- 17-19 Arizona State Firemen's association convention at Prescott. Charles Hartin, chairman.
- 17-27 Prescott District Boy Scouts summer camp, Camp Apache, Granite Basin. Lavern Hansen, scout executive.
- 21 Sierra club to climb Mt. San Antonio (Baldy). Fred Eaton, Pasadena, leader.
- 24 San Juan Day annual fiesta, corn dance, San Juan and Taos Indian pueblos, New Mexico.
- 25-27 American Legion and Auxiliary meet in Albuquerque.

IF YOU ARE MOVING! . . .

It is important that Desert Magazine office be notified of changes in address not later than the 5th of the preceding month. That is, if the July issue is to be sent to a new address, this office should be advised by June 5. This will help us insure delivery of your Desert Magazine every month.



Volume 5

JUNE, 1942

Number 8

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RANDALL HENDERSON, Editor. LUCILE HARRIS, Associate Editor.

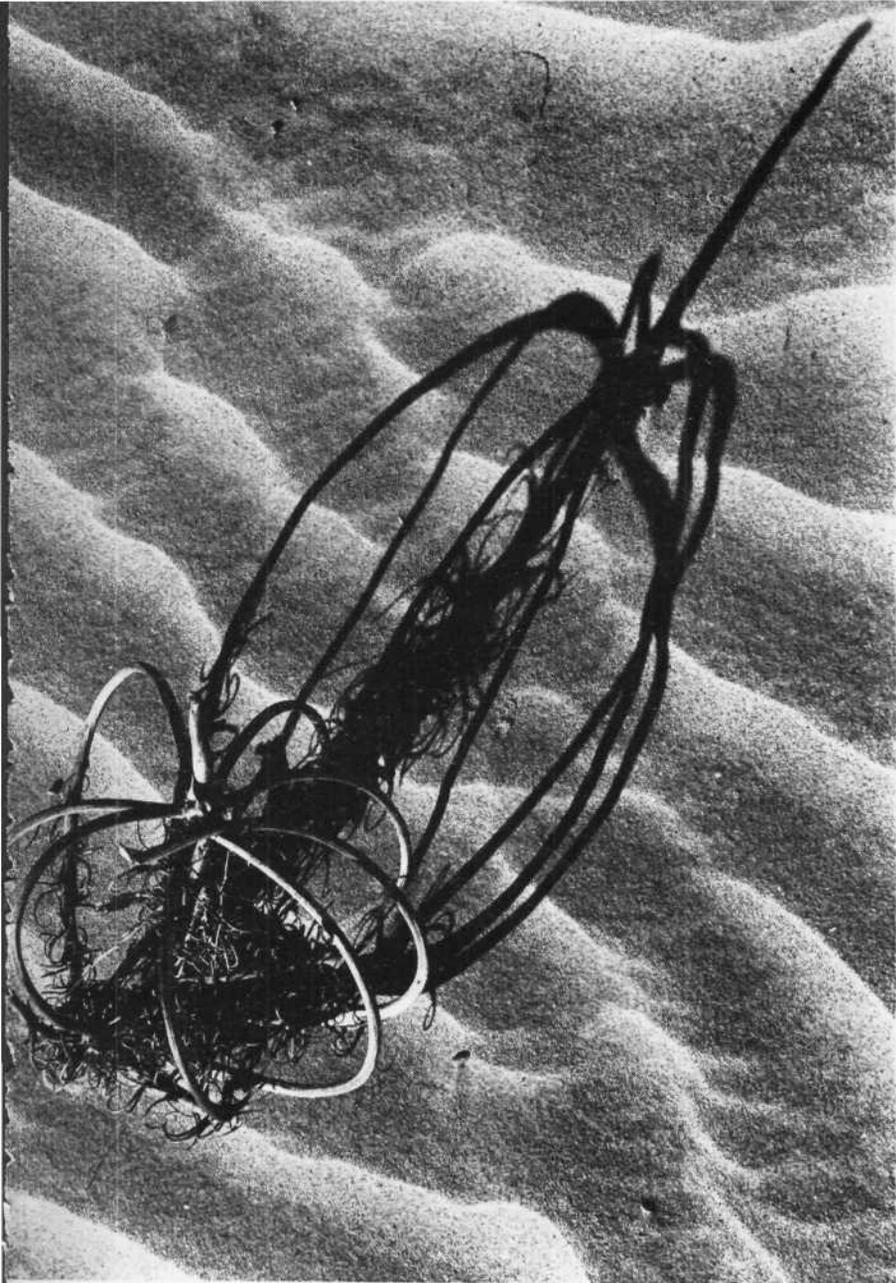
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Desert Lantern

By F. H. RAGSDALE
Los Angeles, California

Winner of first prize in Desert's monthly photographic contest is this shot of the skeleton of an evening primrose plant found in the sand dunes just west of Indio, California. Taken with an Eastman 5x7 view camera fitted with 9 inch Voigtlander Heliar lens. 1/10 sec. at f45 on Super Pancro-Press cut film. Negative developed in Pyro-soda.

Havasu Falls

By H. M. SEVERANCE
Los Angeles, California

This view of Havasu, also called Supai and Bridal Veil, falls on the Havasupai Indian reservation of northern Arizona, is winner of second prize in Desert's April contest. Taken with an Eastman 3A Special Kodak, Kodak Anastigmat lens, f6.3. Agfa Superpan Supreme. Distance 100 feet, 1/2 sec. at f22, yellow filter.

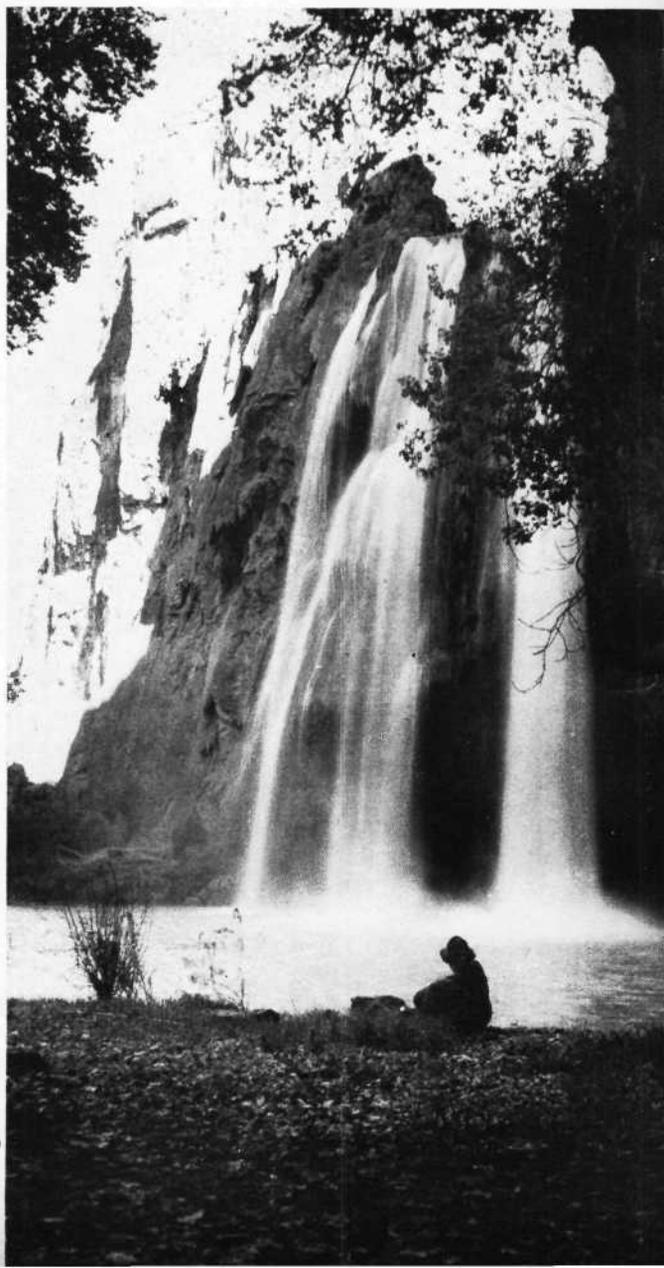
Special Merit

The following photos were judged to have special merit:

"Monument Valley," by John B. Breed, Swampscott, Mass.

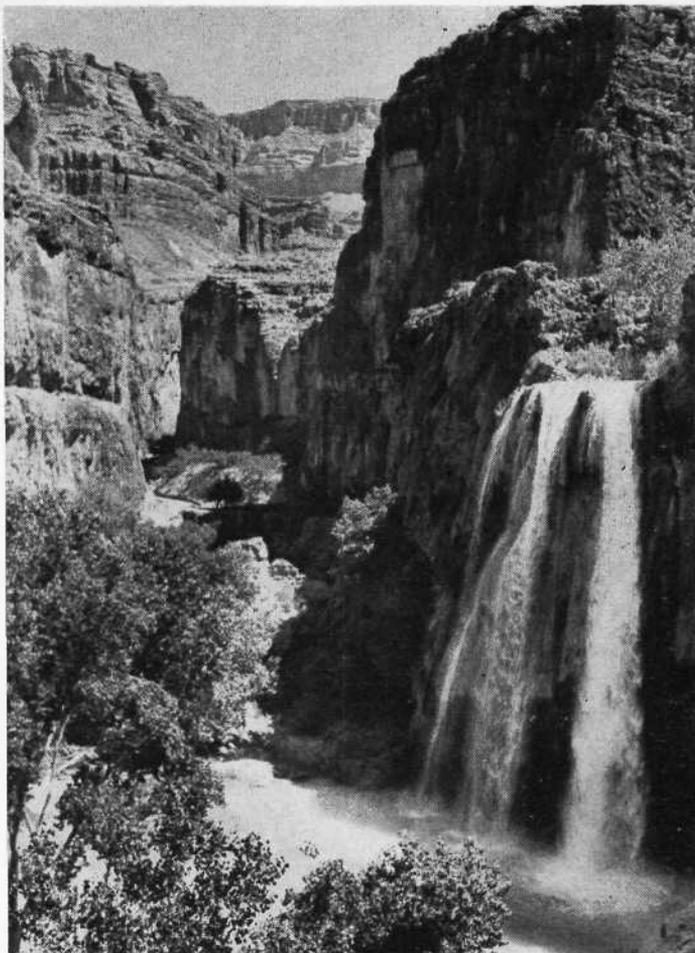
"Thousand Palms Oasis," by G. E. Kirkpatrick, El Centro, Calif.

"Desert V," by Stanley Shuttleworth, Palm Springs, Calif.





Navajo falls.



Bridal Veil falls.

Photographs by Josef Muench.

We Camped by Turquoise Waters

Members of the Sierra club of California on their annual Easter trek this year took the long trail to Havasupai Indian village in northern Arizona and camped in a little meadow between two of the most gorgeous waterfalls in western America. It is a remote canyon where the solitude is broken only by the tumbling waters of Cataract creek and the song of canyon birds. And if you have wondered what it would be like to live again in a world with neither radio nor newspaper far removed from any hint of war, perhaps you will find the answer in this story.

By RANDALL HENDERSON

NEITHER tribal legend nor the research of the archaeologists have told us when and why the Havasupai Indians migrated to majestic Havasu canyon. They may have gone there to hide from their enemies, or to escape the dictatorship of a screwball medicine man, or perhaps because rabbit hunting was better in that isolated canyon.

But whatever the reason, I will give those old-timers of the Havasupai tribe credit for discovering a village site that would make a Southern California real estate subdivider green with envy.

The Supai people of Havasu canyon have everything—a climate that is mild in winter and healthfully warm in summer,

a bounteous water supply, fertile soil that is easy to irrigate, and the kind of seclusion that certain isolationist-minded Americans once dreamed about but have never attained. And in addition to all these very practical assets Havasu canyon has a scenic splendor that would make an artist out of a hod-carrier.

My acquaintance with Havasu and its easy-going Indian tribesmen is very recent. I spent Easter week this year camping beneath a huge native ash tree on the banks of Cataract creek a mile downstream from Supai village.

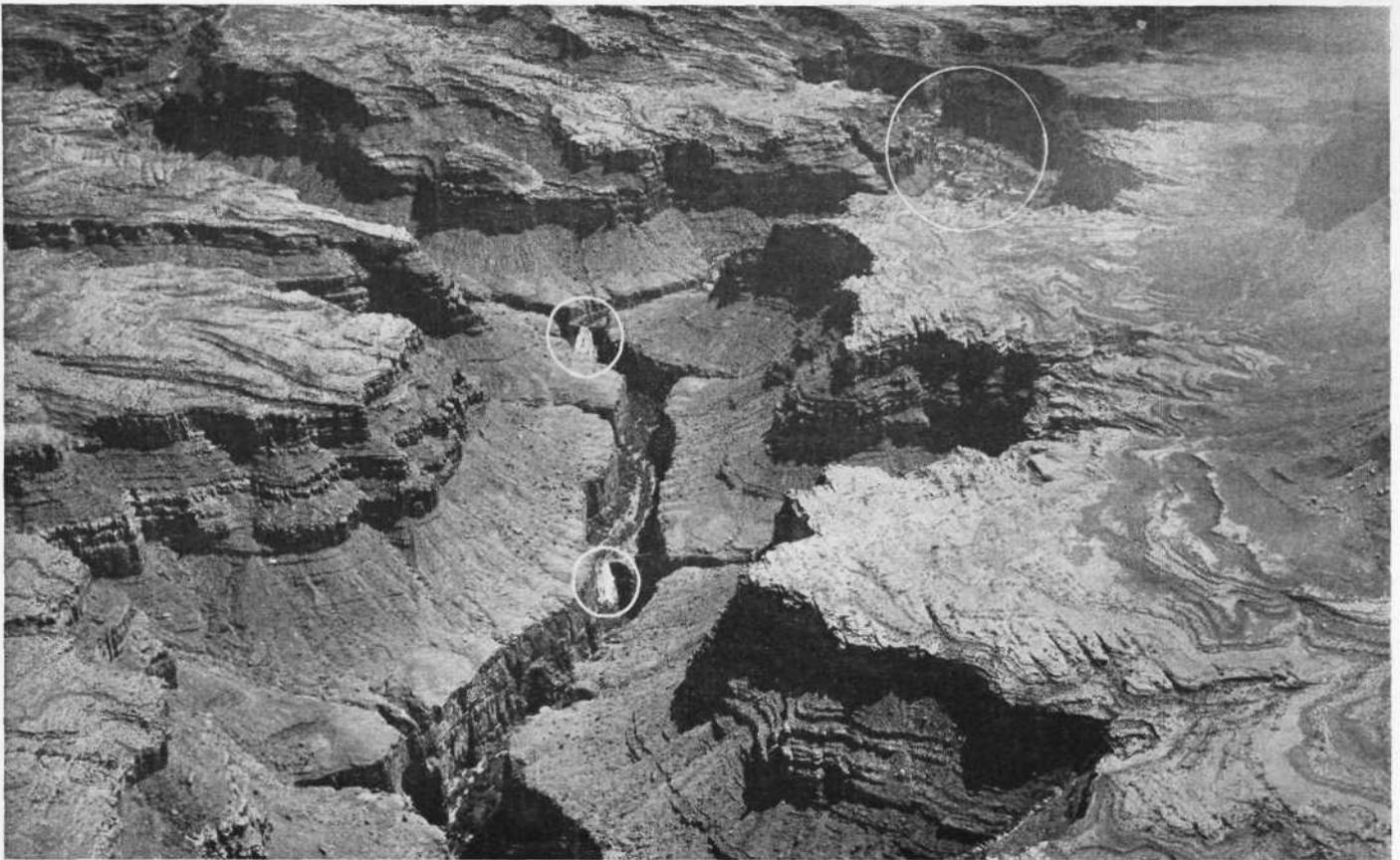
Before I go on with my story I think we should get our place names straightened out. Cataract creek was given its name by

Lieut. Joseph C. Ives during his exploring trip in 1858. The lower part of the canyon in which Cataract creek flows, however, is now called Havasupai, derived from the primitive people who dwell there. Havasu is an Indian word meaning blue-green water, and pai means people—people of the blue-green water. In common usage Havasu and Havasupai are used synonymously as applying both to the canyon and to the Indians who dwell there.

My companions on this jaunt into the land of the blue-green water were members of the Sierra club of California, on their annual Easter trek.

Our rendezvous Sunday evening, March 29, was at Hilltop, Arizona. We reached this place by leaving Highway 66 at Peach Springs and driving 63 miles northeast over a graded road that winds across the northern Arizona plateau.

Hilltop is the end of the road. It is just a boulder-strewn knob that projects out from the rim above Hualpai canyon. There is parking room for about 20 cars, and not much else. Vertical walls drop 1500 feet



Air photo of Havasu canyon looking upstream. Large circle marks Supai Indian village. Middle circle, Bridal Veil falls; lower circle, Mooney falls. Sierra party camped in a tiny meadow between the two falls. Navajo falls, between Bridal Veil and Supai village is behind the projecting cliffs. Photo by Robert Spence.

to the floor of Hualpai canyon on three sides of Hilltop.

There were 14 cars and 54 Sierrans in our party when we assembled for the campfire program that first evening. It is still a mystery to me where the firewood committee found enough sticks and dead vegetation on that barren hill for a campfire. But since Sierra club members would rather miss their supper than go to bed without the traditional campfire party, they dug up the makings somewhere.

We spent the evening singing and discussing plans for the seven-mile hike down into the canyon the following day. Dr. Harold C. Bryant, superintendent of Grand Canyon national park with Mrs. Bryant and their daughter, Barbara, were members of our party. The leader was Wilbur E. (Andy) Andrews, who usually draws the assignment when the Sierrans go into the desert wilderness for a prolonged outing. Andy thinks of everything.

Sleeping bags were spread that night among the boulders, wherever one could find space enough for comfort, and not too close to the edge of the cliffs.

Arrangements had been made in advance for the Supai Indians on the reservation to pack in our bedding and food. The horses came up the trail at sunup the next morning. They were typical Indian ponies, herded along the trail by a half dozen dark-skinned riders. A dude-ranch

wrangler would call them a sorry lot of animals for a pack train. But they knew the trail and did their work well.

We were limited to 35 pounds of food and bedding for each hiker. That just about takes care of the bare essentials in bedding, food, extra clothing and cooking utensils for a five-day outing. Of course one always has the privilege of packing a few luxuries on his own back, along with cameras, canteens and lunches.

We weighed in our dunnage on a tripod scale, and then headed down the trail for Havasu. From Hilltop the trail zigzags down the face of the cliff to the floor of Hualpai canyon. This is a tributary of Havasu canyon and is now the shortest route to the Indian village. A former route, 14 miles in length, followed Lee's canyon.

There is no highway into Havasu. Over this trail goes every item of food, clothing, building material and machinery used by the 215 Indians in the canyon, and the school maintained there by the Indian bureau.

On such a trail the hikers break up into little groups, each traveling its own gait. The Sierrans are seasoned trail-hounds. They do not like to be herded along, nor would they tolerate it. They came to the desert wilderness to get away from the ever-increasing regimentation that civilization imposes on its victims.

After dropping down the steep wall of the cliff, the trail levels off to a gentle decline and follows the leisurely dry watercourse of Hualpai canyon a distance of six miles.

Sandstone and limestone walls with red the predominating color close in along the narrow channel of the streambed. It is an easy trail to follow. There is much desert vegetation along the route but few flowers were in blossom this year. The rainfall has been light.

The junction of Hualpai with Havasu canyon is a mile above Supai village. Here we entered a dense jungle of willow, cottonwoods and arrowweed. We could hear the roar of Cataract creek through the foliage ahead. Then we came to fences and little pastures of bermuda grass and finally to the stream.

The Indians disdain such civilized luxuries as bridges—but 54 visitors in one party from the outside world is an epic event in the lives of these remote tribesmen, and as a concession to the peaceable invasion of folks who prefer dry feet, they had thrown a couple of these swinging bridges across the creek. They are wobbly affairs, but stout and serviceable.

The little valley in which the Supai live merely is a wide place in the canyon. The Indian bureau has tapped the stream above and installed an irrigation canal. There are a few patches of alfalfa, squash,



Supai women still bake bread over the coals of an open fire. The loaves resemble extra thick tortillas.

beans, corn and melons, and some ancient peach trees, said to have been brought into the canyon by John D. Lee when he was in hiding after the Mountain Meadows massacre. Most of the tillable land is in bermuda—pasture for the ponies which every Indian owns.

A majority of the Indians speak some English. Those who have been to school speak it well. They are friendly and easy-going. Their village is never overrun with tourists, and they evidently were pleased to have visitors from the white man's world.

They are closely related to the Hualpais who live on top the plateau, and are said to belong to the linguistic family of the Yumas. The men cut their hair short and wear denims. The women, in dress and hair styles, resemble the Indian women you'll see at the railroad stations in Yuma and Needles.

They eke out a meager living from their gardens, and the men occasionally go outside to work on roads or other projects. There is a postoffice in the village, but no trading post. Visitors are charged \$2.50 a day for animals for pack or riding purposes, and while the total revenue from this source is small, it is one of their most important sources of income and perhaps explains their friendliness toward visitors.

Our campground was a tiny meadow shaded by veteran ash trees a mile below Supai village. Imagine a grassy little park at the foot of towering cliffs, with plenty of shade, abundant firewood, and a stream of clear cool water tumbling through the willows nearby—and you'll understand why the 54 teachers, lawyers, engineers



This is one of the last pictures taken of Chief Manakaja before his death early in March. In Supai village these ancient dugouts are gradually giving way to more modern houses. Park Service photo.

and salesmen from the metropolitan areas of the Pacific coast loved this spot. The Havasupai reservation lies entirely within the bounds of the Grand Canyon national park, but in all the gorgeous Grand Canyon country there is no scenic area that surpasses Havasu.

When Nature brings water and limestone together, strange and fantastic things happen. Anyone who has visited Carlsbad caverns will understand what I mean.

The springs that gush from the upper canyon and form Cataract creek are heavily charged with limestone—and that explains much of the bizarre beauty of Havasu canyon. Limestone built the waterfalls and created the lacy patterns of travertine that form the backdrop for each cataract. It created caverns, and adorned them with stalactites and stalagmites. In one place I saw a cluster of stone tree stumps—shrubs which had been caught in the spray of a waterfall and encrusted with a thick coat of tufa.

The action of limestone and water which created all these odd formations is simple: Limestone is highly soluble in water, and when the two come together it immediately begins to dissolve—and they flow downstream in happy union. But it is a fickle sort of union. The water evidently does not fancy the partnership, because whenever the current slows down it immediately begins redepositing its load of mineral. And so, the stone in Havasu canyon is in constant process of destruction and creation.

Dr. Bryant, in one of his campfire talks, told us that he had visited just two places on the continent where the rock crust of



the earth is in visible process of creation. One of these is the coral reefs in Florida, and the other is Havasu canyon.

Just below Supai village where the current of the stream is sluggish, the lime has built up a series of little dams in the stream, like the coral atolls of the Pacific. Water-cress thrives with its roots in the soft limestone thus formed, and the result is myriad pools of turquoise-blue water fringed with the luxuriant green of water-cress. They are like floating gardens in the stream.

The sandbars, the boulders, everything in the stream is coated with limestone. And when the sunlight is reflected through the water against the mineral glaze it gives the stream the blue-green shades which led the Indians to call it Havasu.

I've always liked that name Havasu, and after seeing the beauty which it described—for Indian names are always descriptive—I would like to pay a tribute to that

aborigine of prehistoric America who coined the word.

Most Westerners are familiar, by picture at least, with the gorgeous cataracts that gave this creek its name. There are four of them of major importance—and many smaller ones.

A half mile below Supai village is Navajo falls, where the creek comes to the rim in a dozen rivulets between brilliant green islands of water-cress and tumbles 140 feet to a churning pool of liquid turquoise. The trail detours the falls, giving many fine vantage points for the camera fraternity.

A quarter mile farther downstream is Bridal Veil falls, also called Supai falls. The name Bridal Veil no doubt derived from the lacy curtain of travertine that covers the face of the wall that flanks the falling stream. The deep pool at the foot of this cataract was a popular swimming hole for members of our party. An old wooden ladder c'lated to the wall of the cliff leads up 60 feet to a small cavern where stalactites form many weird patterns. Some of us climbed to the cave—and later were told by the Indians that the ladder was not considered safe.

Another half mile below Bridal Veil is Mooney falls, 200 feet in height and the most spectacular of all the cataracts in this canyon. It was named for James Mooney, member of a prospecting party which went into the canyon in January 1880. He was killed in attempting to rope down over the face of the falls. The body was later brought to the top of the cliff and

buried. Will C. Barnes, in his Arizona Place Names, reported that he took a picture of the grave in 1886. It disappeared some time later when a cloudburst came down the canyon and made radical changes in the landscape.

More recently, steps have been cut in the travertine face of the cliff over which the water falls. It is a thrilling stairway, with balconies and tunnels decorated with stalactites. Iron pins have been driven in for handholds and the descent can be made now with complete safety.

The fourth cataract, Beaver falls, is three miles farther down the canyon, but I will tell about the Beaver cascades later.

We remained four days in camp, following the trails and exploring the coves and cliffs and jung'les above and below our camp, which was between Bridal Veil and Mooney falls.

One day some of us followed a steep trail, which according to Indian legend, was once used by marauding Apaches when they made their periodic forays into Supai country. Our route was up a narrow side canyon, and then with the help of a rope to the summit of the cliffs overlooking camp.

Another afternoon we explored an old mine tunnel that was worked for many years by a prospector who expected to find rich ore there—and never did. But the old tunnel is a treasure-house for the rockhound pack. Its sidewalls are pocked with little niches in which calcite crystals sparkled in the beam of our flashlights. I saw crystals big enough for bookends. At

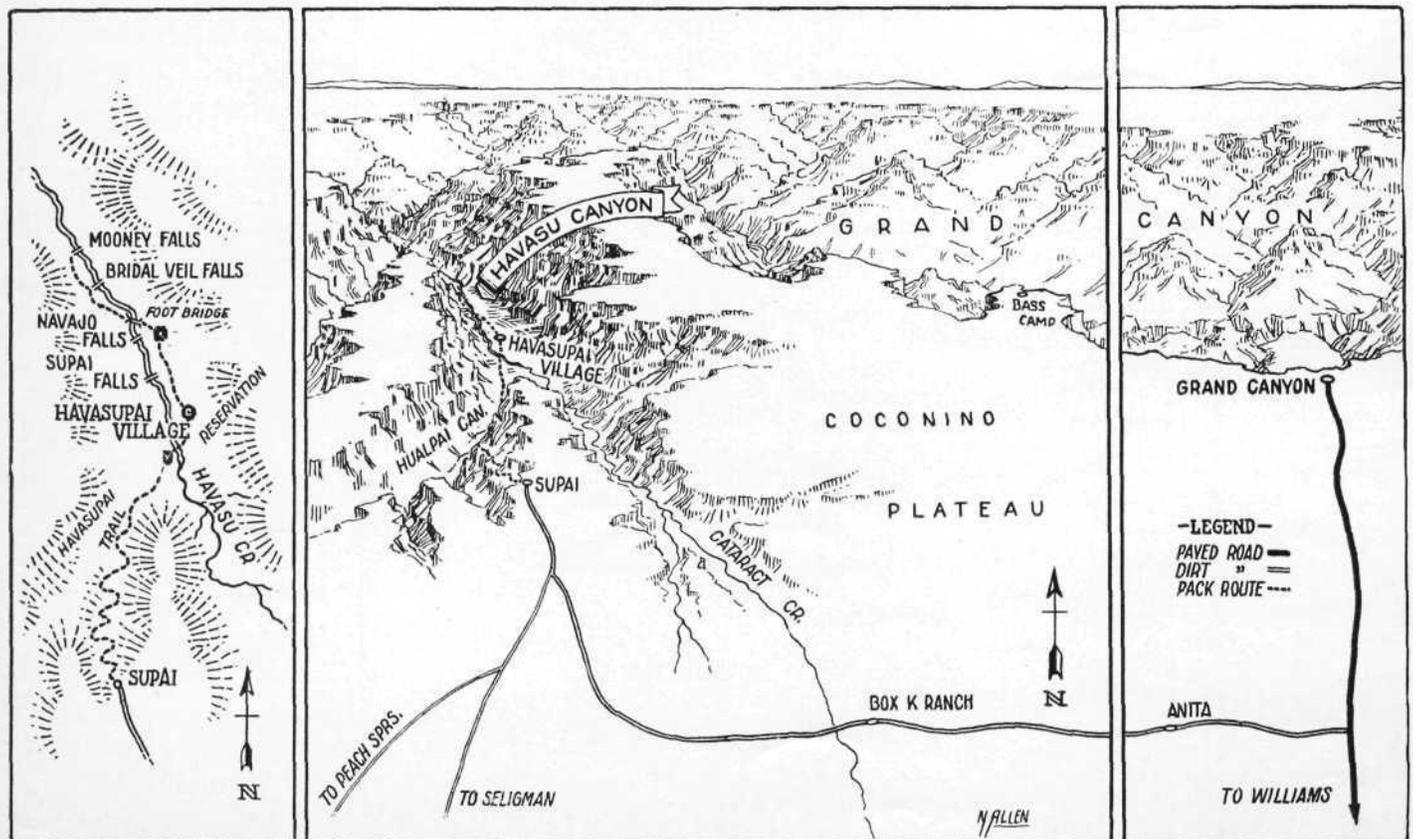
another place, along the trail, I saw an outcropping of beautiful red jasper and chalcedony. But of course this is Indian land, and collecting is taboo.

Ponies were always available for those who preferred to do their exploring on horseback, and Cliff Siyuja, Supai Indian who served as head wrangler, proved to be an accommodating guide.

It is surprising how much talent for impromptu entertainment can be found in a group of 54 people. Marion Jones, assistant leader, who was in charge of the evening programs did a masterly job of combining comedy vaudeville with lectures of chatauqua quality.

Dr. Bryant, who has made a special study of desert zoology was our ace lecturer. He helped us identify many of the birds which are plentiful in Havasu. Two of the most common species were the rock wren, whose trill constantly broke the silence of the canyon, and the white-throated swift, which in flight looks like a cross-bow. It darts in and out among the canyon walls, and so far has defied all efforts of the naturalists to discover where it spends its winters—whether it goes south or into hibernation in the crevices in the cliffs.

One of the unexpected pleasures of the trip for me was the opportunity to renew a long-standing friendship with James Rennie, member of the San Francisco chapter of the Sierra club. Twenty-seven years ago he was farming in Palo Verde valley when I was editing the weekly newspaper at





Beaver falls.



"Andy" Andrews and Marion Jones, leader and assistant leader.



Mooney falls.

Blythe. A Scotchman by birth, now 78 years old, he took the long hike into Havasu canyon without apparent fatigue—one of those men who preserve their youth by careful living and active minds.

We visited the school at Supai village, found an Indian schoolboy spending the noon recess rattling a gourd while he chanted an Indian song. The Supai have their native ceremonials, but do not take them as seriously as do the Navajo and Hopi. Or, at least they do not devote as much time to their rituals.

Where the stream was shallow it was easier to wade than fight through the grapevine entanglements on the banks.



We bought most of the available supply of baskets in the village. Only a few of the Supai women are now weaving basketry, but some of their craft work is of very fine quality.

The agent for this reservation lives on the plateau at Valentine, and the local federal authority is vested in the school principal, Charles F. Shaffer. A scholarly man with a fine understanding of the Indians, his work since he came to Supai village nine years ago has won the respect of all who have been associated with



On the hike to the Colorado river, members of the party stopped to admire the cascades of Beaver falls.



Crossing Cataract creek on the travertine-coated boulders you either keep your balance—or else!

him. Due to the illness of Mrs. Shaffer he is now being transferred to another post, and the vice-principal, Lonnie Hardin, will act in his place until a permanent appointment is made.

With Andy in the lead, 16 of us hiked one day down Cataract creek to its junction with the Colorado. Leaving camp at seven in the morning we followed a good trail as far as Mooney falls, and then picked our way over the rocks and through the thickets of willow and grapevine the remaining distance.

We were warned in advance that the trip to the Colorado would require frequent wading of Cataract creek. I put a pebble in my pocket each time we crossed the stream, and when I counted them that night there were 41.

Sometimes the water was knee deep and the footing was good. At other times we crossed over lime-encrusted boulders with deep water on both sides. It took a rather delicate job of balancing in a few places—but our record was good until Andy slipped and took a ducking. That was the only casualty.

We became so used to wading that in some places we took to the stream to avoid fighting our way through the jungles of wild grape that grew on the banks. Next to cholla cactus, I think grapevines are the most exasperating of all the snares that waylay the wilderness hiker. Havasu has more than its share of them.

Half way down the river we passed Beaver falls, a series of cascades not as imposing as the falls upstream, but in some respects more colorful. The passage down the canyon is difficult here, and we found remnants of an old trail that detoured up on the side of the cliff. Looking down on the Beaver cataracts from above, I saw one of the most colorful pictures of the entire trip. It was a picture in red, white and blue—pools of rich turquoise, broken at intervals with the white water of churning cascades, all against a background of deep red sandstone. It was worth the rather strenuous trip down the canyon just to see Beaver falls from the high trail above it.

Cataract creek enters the Colorado through a narrow rock portal with vertical walls and deep water between. There are only two ways to reach the Colorado—either swim the last 50 yards or climb a steep cliff on the south side. We chose the cliff, and ate our lunch sitting on a lava bench at the edge of the daddy of all southwestern rivers.

It was fascinating to watch the give-and-take battle where the blue waters of the creek meet the chocolate brown waves of the Colorado. A wavering finger of turquoise would shoot out into the brown flood, only to be engulfed in a swirling eddy. Then a surge of the muddy water

would crowd its delicately-tinted invader far back toward the portal. The conflict goes on and on—and the Colorado always wins.

We reached camp at eight o'clock that evening after climbing the face of Mooney falls with the aid of flashlights. The campfire program was in progress, and we nearly broke up the party by insisting that a special ceremonial of some kind must be staged in recognition of our achievement. We put on an impromptu war dance—but it was very brief. Fourteen miles over uncharted canyon country makes a long day

for a bunch of white-collar softies on vacation.

Early Friday morning we said goodbye to our Supai neighbors and took the long uphill trail to Hilltop. One could not help but have regrets at leaving such a place.

But Havasu will always be there for a return visit. The fact that it is within the boundaries of both an Indian reservation and a national park gives double assurance against encroachment by interests which might despoil the beauty of this land of the turquoise water.

TRUE OR FALSE

Most of us do not get out on the desert as often as formerly during these days of restrictions, and perhaps that is one reason why Desert Magazine's monthly quiz is gaining in popularity. If we cannot go to the desert we can at least keep our minds alert to its strange and interesting phenomena. This month's True or False is a test of the diversity of your knowledge of desert subjects. It includes history, geography, mineralogy, botany and the general lore of the desert country. The average person will answer less than 10 of these correctly. A score of 15 is worthy of a dyed-in-the-wool Desert Rat, and if you score more than 15 you are one of those super-students. Answers are on page 45.

- 1—The desert Kangaroo rat carries its young in a pocket in its skin.
True..... False.....
- 2—Juniper trees grow wild below sea level in Death Valley.
True..... False.....
- 3—Buffalo meat was once a main item of food for Yuma and Mojave Indians.
True..... False.....
- 4—Coal is mined in New Mexico. True..... False.....
- 5—The Dirty Devil river is a tributary of the Colorado. True..... False.....
- 6—Father Garcés often accompanied Father Kino on his journeys in Pimeria.
True..... False.....
- 7—Ironwood trees have thorns. True..... False.....
- 8—A rattlesnake has no bones in its body. True..... False.....
- 9—The blossom of the creosote bush is pink. True..... False.....
- 10—Great Salt Lake is the largest inland body of water west of the Rocky Mountains. True..... False.....
- 11—Dog-tooth spar is a crystallized form of calcite. True..... False.....
- 12—It is generally accepted that Joshua trees were given their name by the Mormons. True..... False.....
- 13—Coolidge dam in Arizona is on the Salt river. True..... False.....
- 14—Before the Spaniards brought horses to the New World the Apache Indians rode on burros. True..... False.....
- 15—Peccaries are still found running wild in southern Arizona.
True..... False.....
- 16—Indian Petroglyphs are found only on rocks facing the east.
True..... False.....
- 17—Nevada was once part of Utah territory. True..... False.....
- 18—The cereal used by the Hopi Indians in making piki is corn.
True..... False.....
- 19—Desert Indians gather piñon nuts by climbing the trees.
True..... False.....
- 20—Arizona was the 48th state to be admitted to the union.
True..... False.....



This Hennings painting entitled "Announcements" was awarded the Walter Lippincott prize, Pennsylvania Academy of Fine Arts.

He Thanks Taos for His Fame

By RUTH WATSON

In nearly every important art gallery you will find paintings from Taos, New Mexico—canvases which reflect with striking realism the scenic beauty of northern New Mexico, and the character and costumes of the native Americans who were dwelling there when the white men came to the New World, and still follow ancient customs of dress and religion and daily life. Many fine artists come to this peaceful environment to work, and if you wonder why they are attracted to this remote Indian settlement, Martin Hennings has given a very plausible answer in the accompanying interview.

† HERE was a pungent, never-to-be-forgotten odor of burning piñon in the air the day I drove across town to keep an appointment with E. Martin Hennings, prominent member of the art colony in Taos, New Mexico.

It was a bright February day with New Mexico's famed blue sky at its best. Perhaps, if I had waited longer for this interview, I might have been obliged to walk or use a bicycle rather than my car. I couldn't help but think of the horrible chaos in the rest of the world and rejoice that, so far, the fascinating little village of Taos is at peace, its citizens following their usual ways of life only aware of the carnage outside from the headlines and radio and the intermittent departure of selectees.

Mr. Hennings came to greet me at his studio door before I had the motor cut off. He is a tall lean soft-spoken man of some 50 years the exact opposite of the temperamental self-centered, ostentatious type so many people think a great artist should be. His quick smile lighted up his rugged features as he invited me into his unpretentious studio. As a matter of fact, he might easily be taken for a lawyer, doctor, or teacher.

"Welcome," he said, "I see you have your camera and note book with you. Come in." During the next half hour Martin

Hennings told me something of his artist's education.

"Carter H. Harrison, former mayor of Chicago and a connoisseur of the fine arts, is responsible for my coming to New Mexico," he said. "It was through him that a syndicate of men interested in promising young artists, agreed to buy a canvas if I would go to New Mexico and paint. I had studied at the Chicago Art institute for five years and had spent two and a half years at the Munich Royal academy. Two other young men already had accepted the proposition, both of whom have become famous for their work. They were the late Walter Ufer and our mutual friend, Victor Higgins."

"Taos was already on the map in the artistic world, wasn't it?" I interrupted.

"Yes. Its marvelous assets for painting were well-known in the East, and there were more artists coming all the time, thanks to the pioneering of E. L. Blumenschein and Bert Phillips. When I arrived in 1917, and saw the unique background of nature, the picturesque Indian pueblo and the land-of-mañana New Mexicans, I liked it! In fact, I feel that I owe what honors I have achieved to Taos and its subject matter.

"Later my wife and I toured Spain, France and Italy for 16 months, painting and observing. Then, in 1921, the call of northern New Mexico was so strong, we returned to Taos to make it our permanent home."

"What is your favorite medium?" I thought I knew the answer, but wanted to hear it from him.

"Oils, of course. Aspens in their full glory, sagebrush and Indians in their gay blankets; paisanos squatting against a dusty adobe wall smoking their eternal cigarritos . . . no where in the world can you find such color, such enchanting contrasts!" His voice warmed with enthusiasm as he spoke.

But Martin Hennings does not limit his work to oil canvases. He is one of the most versatile of artists, and when I asked him about some of his other productions he replied:

"I like almost everything. Lithographs and monotypes, illustrations and murals. I like doing black-and-white work for variation," he added. "Of course, a mural takes a great deal of time and capable draftsmanship which I feel I have mastered fairly well. I have had the pleasure of doing a number of murals for public buildings in the past few years. My last one is at the postoffice at Van Buren, Arkansas, which I finished about a year and a half ago."

At this moment, Mrs. Hennings joined



E. Martin Hennings in his studio.

us from the house which is separated from the studio by a few yards. She is a charming and hospitable person whose devotion to and admiration of her husband and his work are quite obvious.

It was from her that I learned about her artist-husband's hobbies. His greatest relaxation is in tramping along northern New Mexico's streams with his rod and reel, but he also goes in for golf and swimming. In fact he is an enthusiastic outdoor sportsman. Indoors he prefers chess. There are some smart players in Taos, and it is possible to arrange a game most any evening.

I have known these fine Taoseños for some time, and in their presence I am always impressed with the sense of friendliness and naturalness they give to their visitors. For an artist of the first rank, recipient of many honors throughout the country, Martin Hennings is one of the most unpretentious people I have ever known.

See

Hard Rock Shorty of Death Valley . . .



By LON GARRISON

"Rainbow Rock, as you calls it," began Hard Rock Shorty, "usta be called Steamboat Rock. That was back when I first come here an' the geologists hadn't give it no attention. It still looks like a steamboat all right with that real sharp edge for the cowcatcher end, but them red, white, yeller, blue an' green streaks is all new in spite o' the big words the college pefessors use to describe 'em."

Hard Rock stuffed his old corn-cob pipe and warmed to his yarn.

"It all started with Gene Banks gettin' married. Now, that's usually bad although it sometimes wears off, but Gene starts in buildin' a house. An', 'way out here ever'thin' had to be hauled in on freight wagons an' it turned into quite a job. Things was goin' along good though 'til he got to the paintin'."

"I wants this room pink,' decides Mrs. Banks, 'an' this'n green, an' this'n blue with a cream band around things."

"Poor Gene got it all muddled up an' after he'd got the wrong color paint three or four times he drove into San Berdoo an' at a big paint

store he bought a 10 gallon can of every color paint they had. He figured he'd get a combination that'd suit 'er if it took a wagon load.

"On the way back in he had the paint stacked about four deep all over the wagon bed. The team was jinglin' right along an' Gene was sort o' dozin' off a bit when the horses run astraddle of a rattle snake. That woke things up with a bang. Gene tumbled back into the paint cans an' right on out over the tail board. The horses was runnin' away an' no stoppin' 'em.

"The road run right up towards this Steamboat Rock an' when the team got there they couldn't decide which side to pass it on. The gee horse pulled one way an' the haw horse the other an' they finally each took a side an' kep' on goin'. The sharp end o' that rock split the wagon wide open an' split paint cans from Azure to Zinnia. The wagon was goin' so fast the paint didn't have time to run out an' was just painted on the rock in big wide streaks.

"Rainbow Rock? That ain't what Mrs. Banks calls it."

INDIANS
PROSPECTORS

RANCHERS

GHOST TOWNS

SCENERY

FINE HIGHWAYS

DESERT LAKES

SNOW CAPPED PEAKS

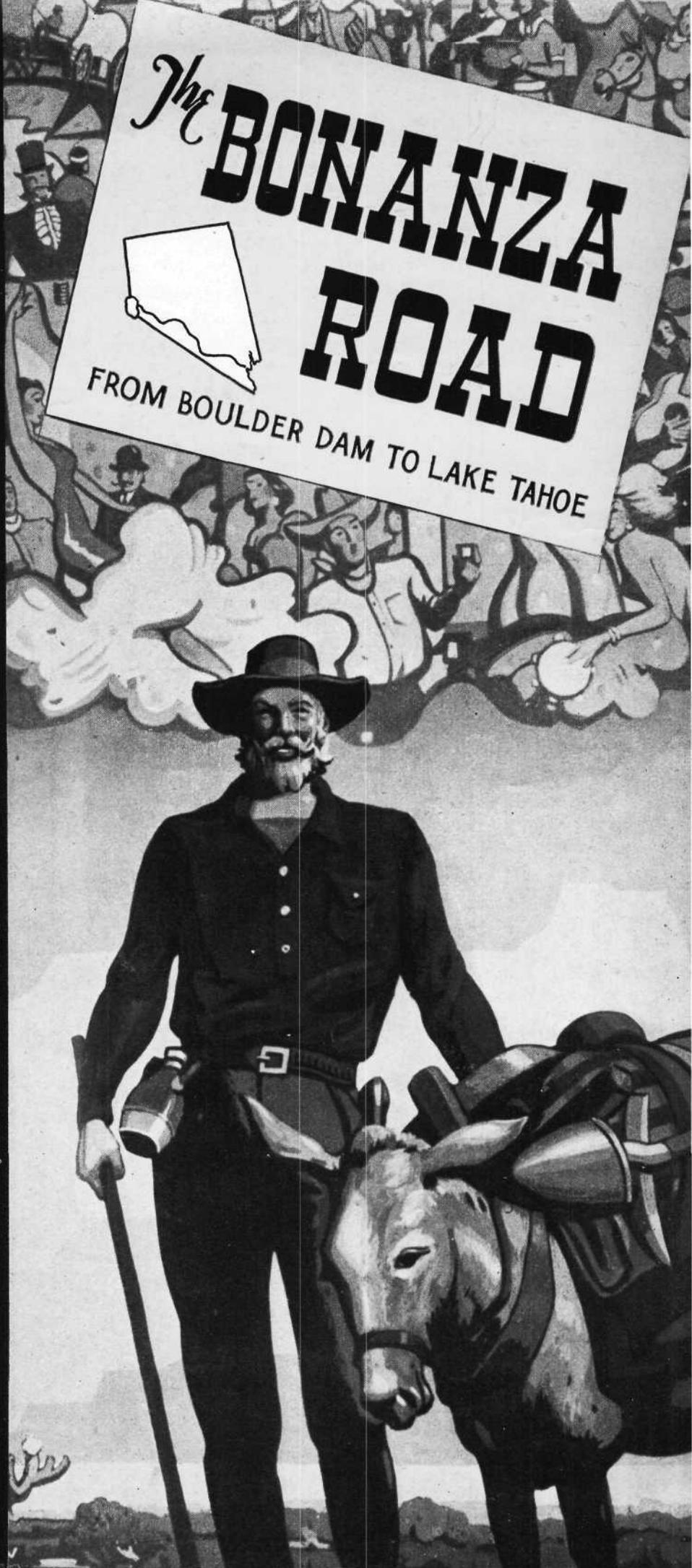
COWBOYS

SHEEP CAMPS

MINES

RECREATION

The **BONANZA**
ROAD
FROM BOULDER DAM TO LAKE TAHOE

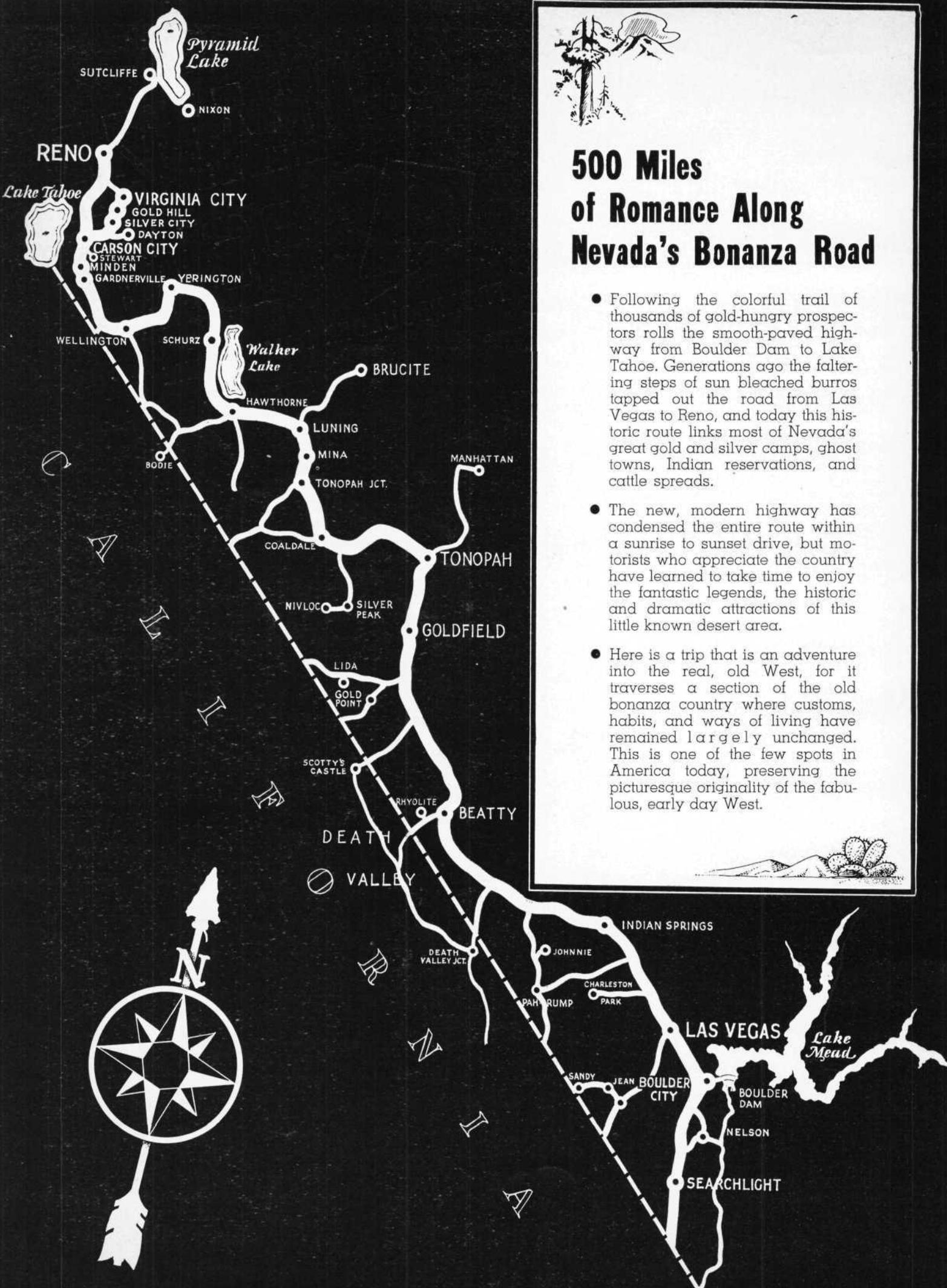


A DESERT EMPIRE IN NEVADA!



500 Miles of Romance Along Nevada's Bonanza Road

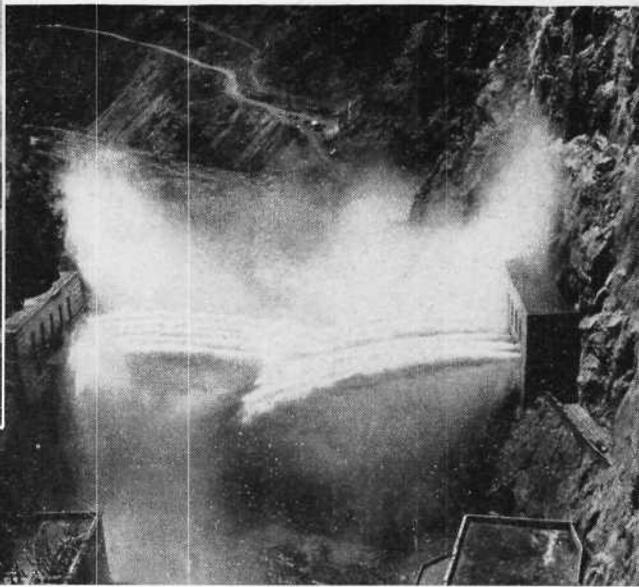
- Following the colorful trail of thousands of gold-hungry prospectors rolls the smooth-paved highway from Boulder Dam to Lake Tahoe. Generations ago the faltering steps of sun bleached burros tapped out the road from Las Vegas to Reno, and today this historic route links most of Nevada's great gold and silver camps, ghost towns, Indian reservations, and cattle spreads.
- The new, modern highway has condensed the entire route within a sunrise to sunset drive, but motorists who appreciate the country have learned to take time to enjoy the fantastic legends, the historic and dramatic attractions of this little known desert area.
- Here is a trip that is an adventure into the real, old West, for it traverses a section of the old bonanza country where customs, habits, and ways of living have remained largely unchanged. This is one of the few spots in America today, preserving the picturesque originality of the fabulous, early day West.



Pyramid Lake
SUTCLIFFE
NIXON
RENO
Lake Tahoe
VIRGINIA CITY
GOLD HILL
SILVER CITY
DAYTON
CARSON CITY
STEWART
MINDEN
GARDNERVILLE
YERINGTON

WELLINGTON
SCHURZ
Walker Lake
BRUCITE
HAWTHORNE
LUNING
MINA
TONOPAH JCT.
MANHATTAN
BODIE
COALDALE
TONOPAH
NIVLOC
SILVER PEAK
GOLDFIELD
LIDA
GOLD POINT
SCOTT'S CASTLE
RHYOLITE
BEATTY
DEATH VALLEY
VALLEY

INDIAN SPRINGS
JOHNNIE
CHARLESTON PARK
PAHRUMP
LAS VEGAS
Lake Mead
BOULDER DAM
NELSON
SANDY
JEAN BOULDER CITY
SEARCHLIGHT



BOULDER CITY

This model community was planned and built by government experts during the construction of Boulder Dam. It is probably one of the most beautiful cities in the West, with curving streets, trees, parks, in a jagged desert setting.

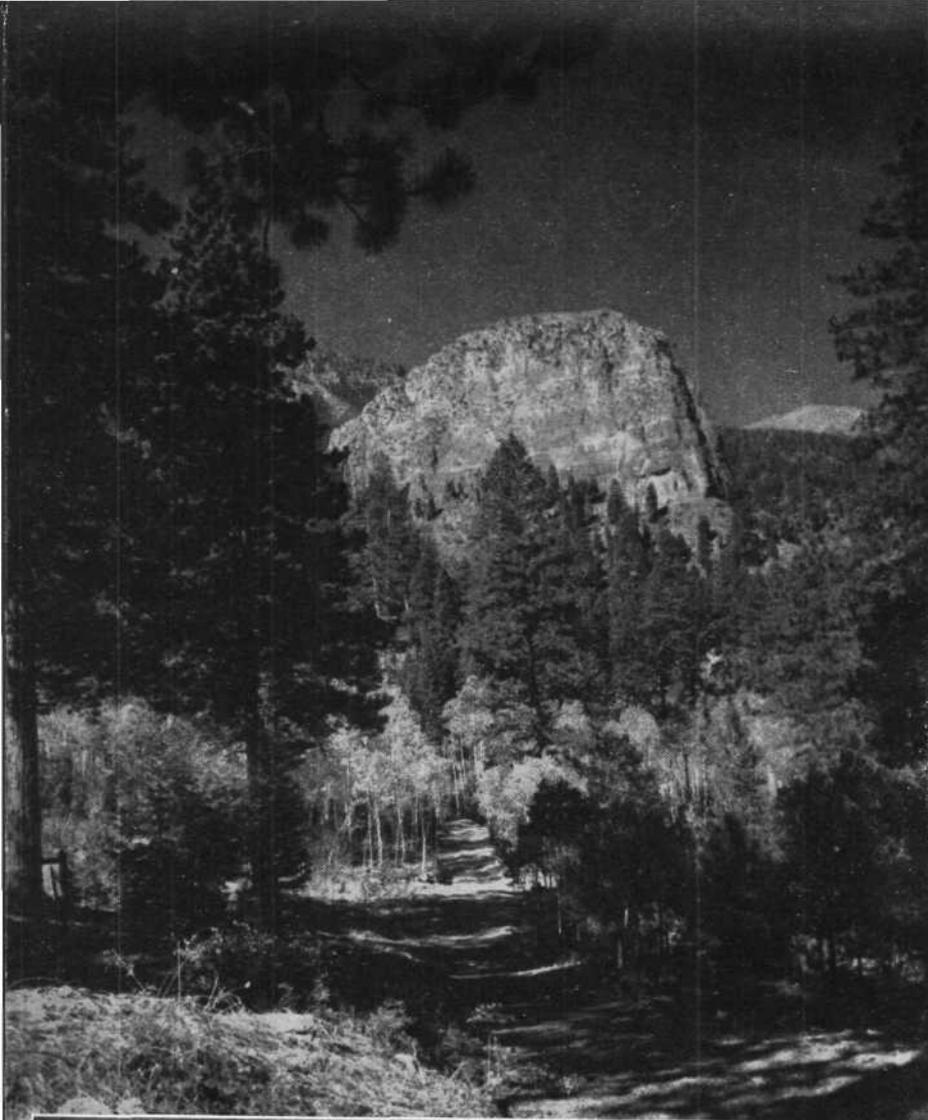
Boulder City enjoys a view of great, sparkling Lake Mead, above the dam and offers all the advantages of a modern western city on an inland fresh-water sea.

All buildings and homes are spotlessly new and attractive. Boulder people play on a beach, yacht harbor, or golf course. And their thriving tourist industry is expanding from year-round sunshine, good hunting, fishing, and fine accommodations.



Left—Lake Mead. U.P.
Below—Power houses below Boulder dam. N.H.
Right—Boulder dam spillway. U.P.
Lower left—Day's catch on Lake Mead. U.P.
Lower right—Boating on the lake. U.P.





LAS VEGAS

"Still a Frontier Town," Las Vegas is a sprawling, growing giant in the Southern Nevada Desert. New industries, new mines, and ranching have boomed this exciting city like something from the Arabian Nights!

Gambling flourishes. Weddings, divorces, and tourists bring a throng of thousands, and the streets flow with colorful activity all night and all day.

New recreations have been found for tourists, and they range from winter sports, hunting, fishing, and riding, to rodeos, celebrations, and fiestas. Las Vegas is the living 20th Century version of the old time gold rush!

Left—Charleston park near Las Vegas. U.P.
 Lower left—Fremont street in Las Vegas, day and night.
 Lower right—Southern Nevada desert. V.

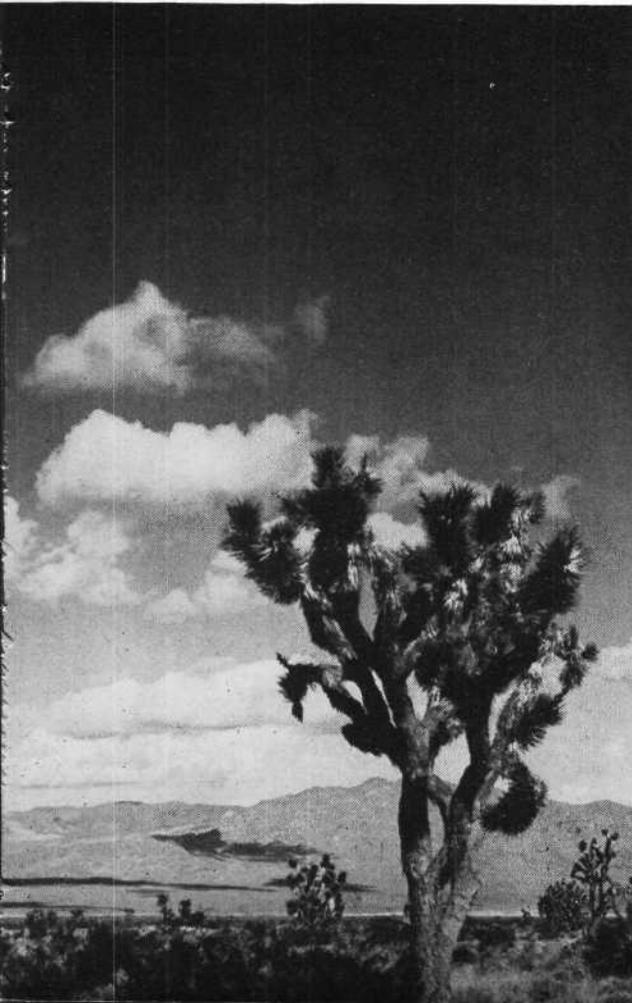
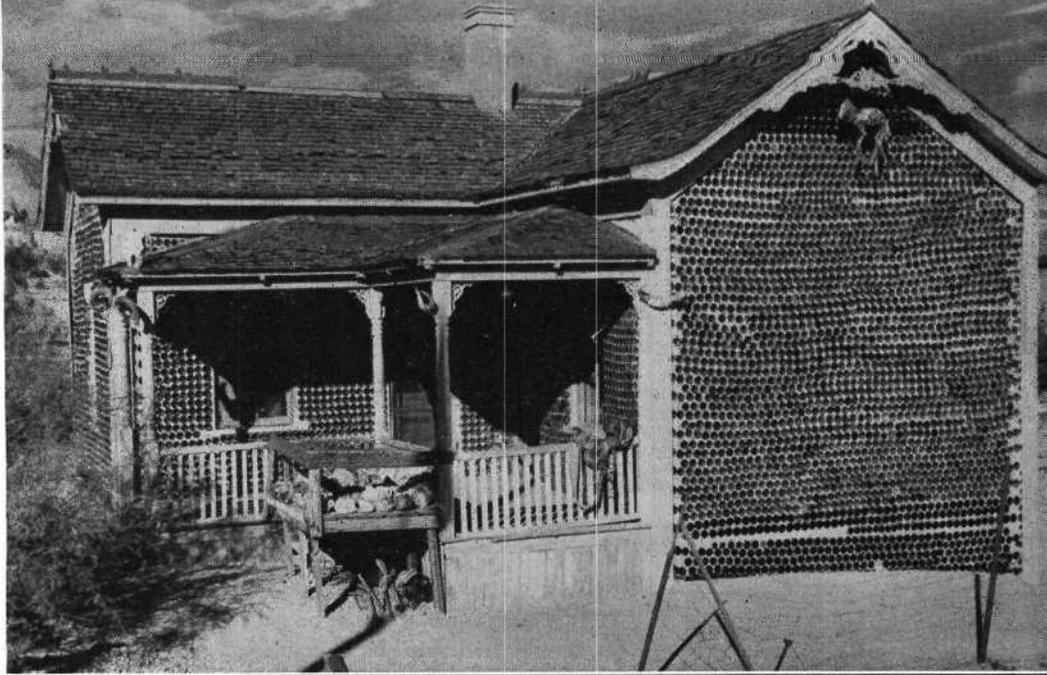


BEATTY

Deep in Nevada's vast silent interior lies the sun-drenched community of Beatty, now awakened to an ever increasing crescendo of mining activity. On the brink of Death Valley, Beatty is within a few minutes of the historic Bullfrog and Rhyolite districts. The legendary Amargosa River of fable and song "flows" right through the community.

Of all the Bonanza Road country, Beatty is perhaps the least touched by change. Here you will rub elbows with desert rats, weather beaten prospectors, Indians, buckaroos, and the newly arrived young mining engineers searching for defense materials.

*Top right—Rhyolite's famous Bottle House. N.H.
Right—Old depot at Rhyolite. N.H.
Lower left—Joshua tree. V.
Lower right—Death Valley. V.*



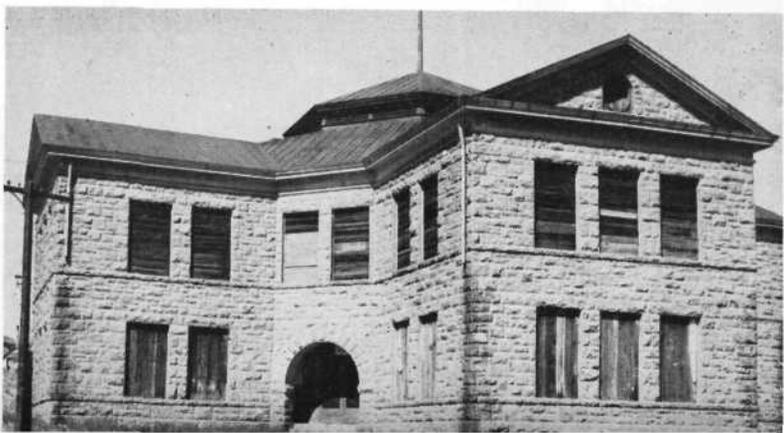
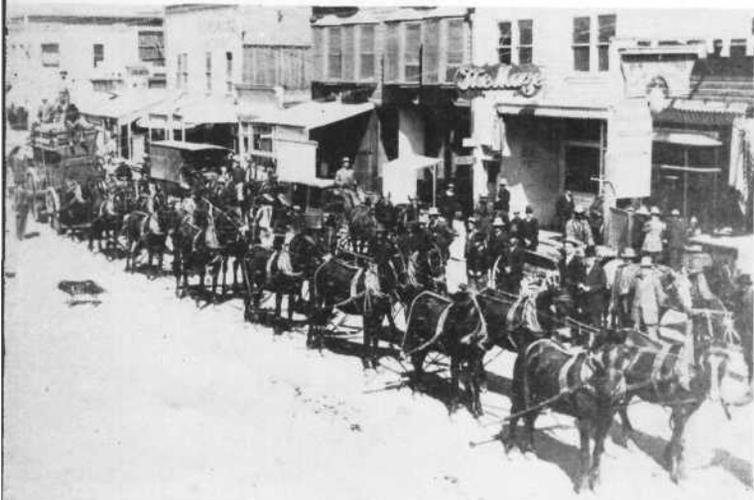
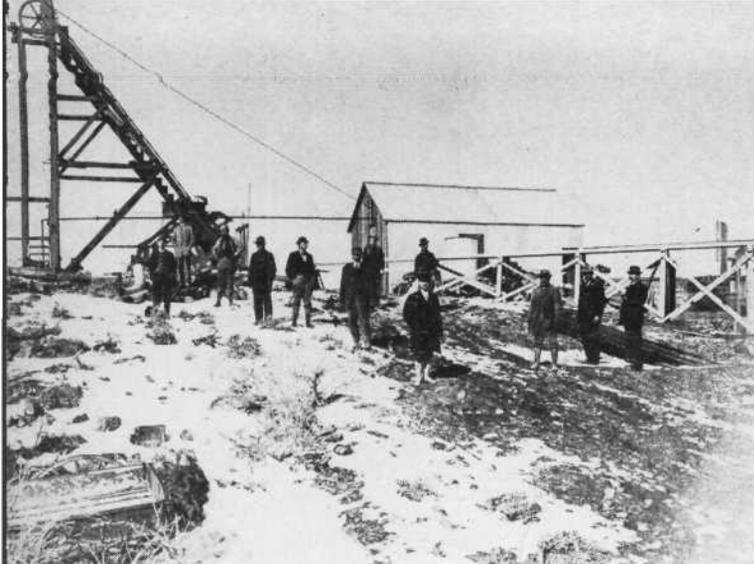
GOLDFIELD

Goldfield still displays an effervescent dauntless spirit, undimmed by a third of a century of "Borasca." Abandoned buildings and homes dot the city, and the huge six-story hotel, after lying empty for a generation, is again coming to life.

Goldfield is the gateway to Death Valley, Scotty's Castle, and the lost towns of the desert. Ghosts of countless horse and mule drawn freighters rumble over its roads. In the abandoned yards of its empty schools once played the children who today are leaders of Nevada's government and economic life!

Goldfield is still the city of self-reliance, resourcefulness, and hospitality. The old-timers will hold you like the Ancient Mariner with their stories and myths of the desert country and the exploits of its people.

*Upper left—Mining in the boom days.
Center—Freightier leaves for Gold Point (about 1906).
Lower left—First aid and rescue crew in the boom days.
Below—Photograph taken July 4, 1906.
Bottom—Relic of the boom days.*



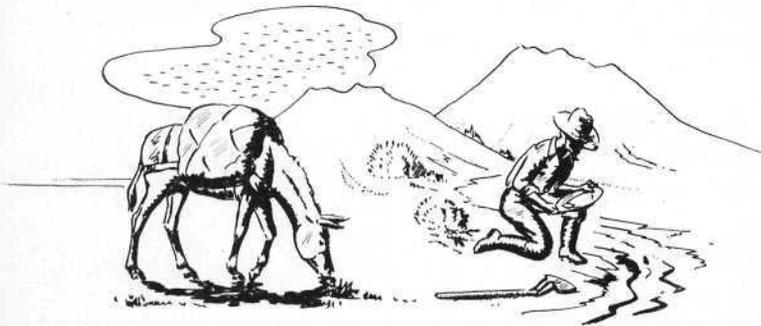
TONOPAH

"The greatest silver camp in the world" still offers a rushing bustle of mining activity and the enthusiastic hospitality which have made it famous. Tonopah silver rebuilt San Francisco after "The Fire," and to a large extent has financed the growth of modern Nevada. Today you can see huge mining and mill operations, bag a deer, or take a fighting trout nearby. Mine dumps dot the city itself, their gaunt headframes looming against the sky.

Tonopah offers many short side trips, best of which include a huge gold dredge, the "Lunar Craters," and immense extinct geysers. Here too are the junctions with U. S. Highway 6 from Ely to Yosemite or Los Angeles. Elevation is over a mile, with clear crisp air and magnificent desert scenery.



*Top right—Tonopah today.
Small prints—Manhattan gold dredge. Railroad yards.
Right—Mizpah hotel, Tonopah.
Lower left—Tonopah's new postoffice.
Lower right—Recreation club.*



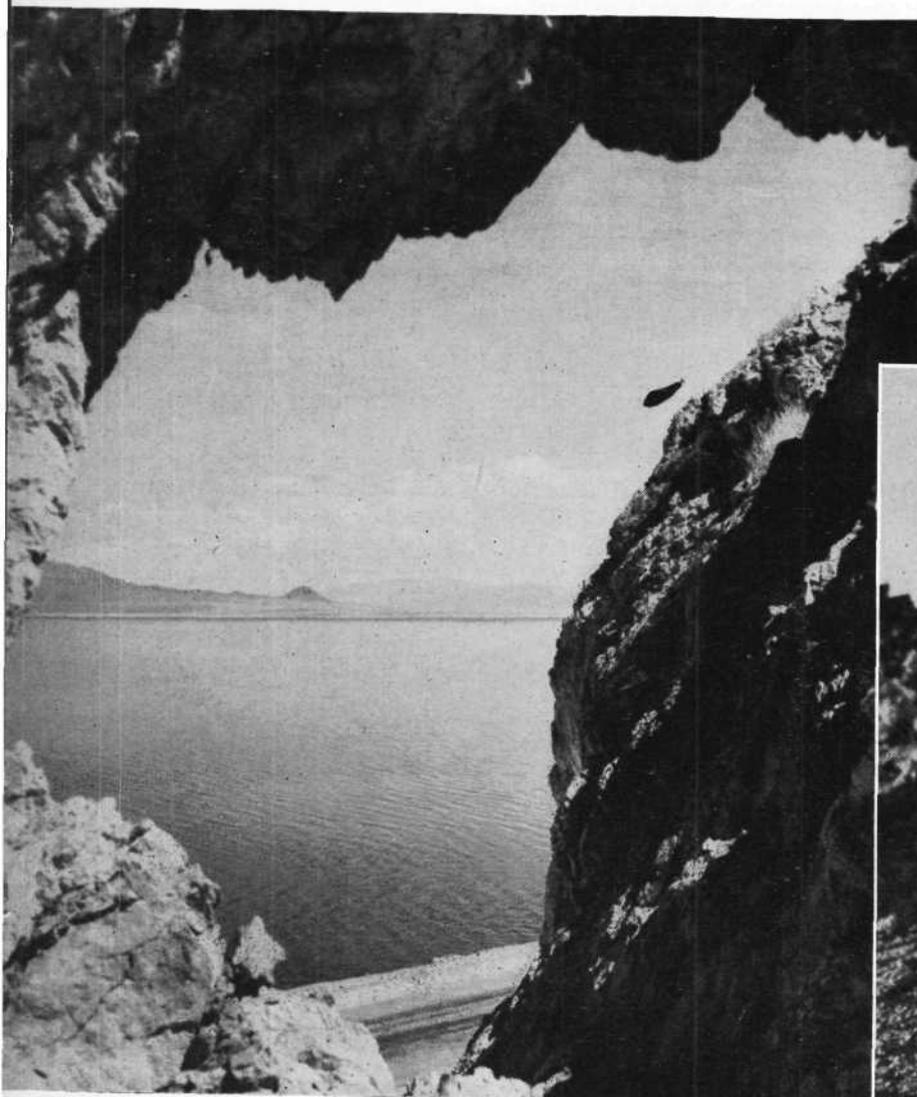


Both Mina and Hawthorne boast rail connections with "The Outside" and have always been active ore shipping points for the countless mines in the desert mountains for miles around; Hawthorne is now engulfed in an exciting defense boom, rising largely from huge deposits of strategic minerals.

The navy station on the edge of Walker Lake is now closed to visitors, but natives claim that under proper conditions you can still see the fabled sea serpent in the vast desert lake.

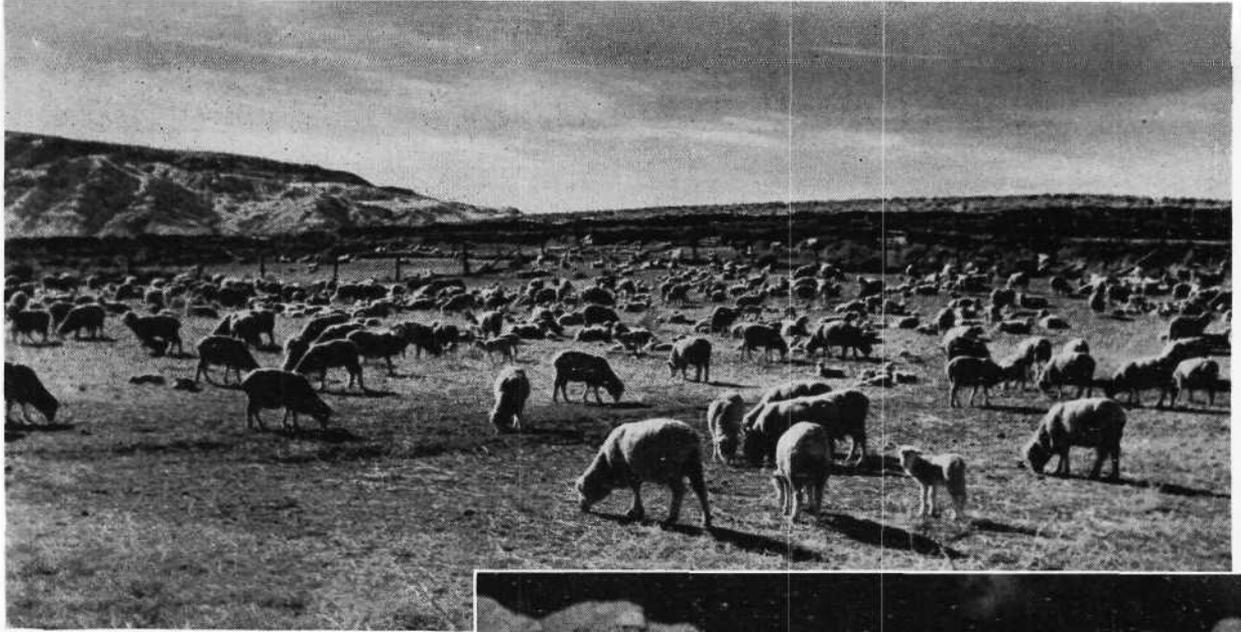
Heavily mineralized, this portion of Nevada is still being actively prospected. You meet burros and old-timers along the road, see new claims staked on every side, and fresh tunnels and shafts dot the hills.

HAWTHORNE and MINA



Top—Nevada prospector, N.H.
Above—Walker lake, N.H.
Right—Looking for color, N.H.





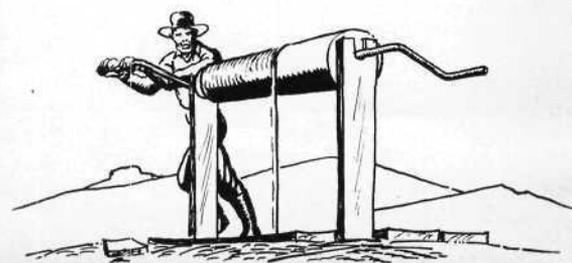
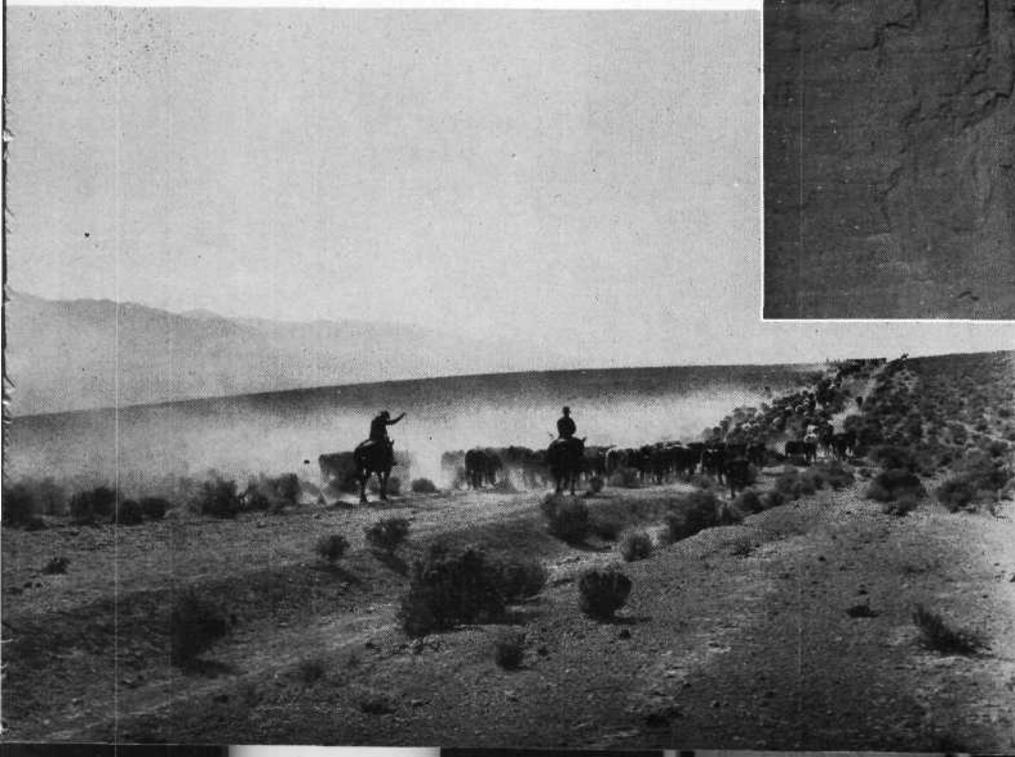
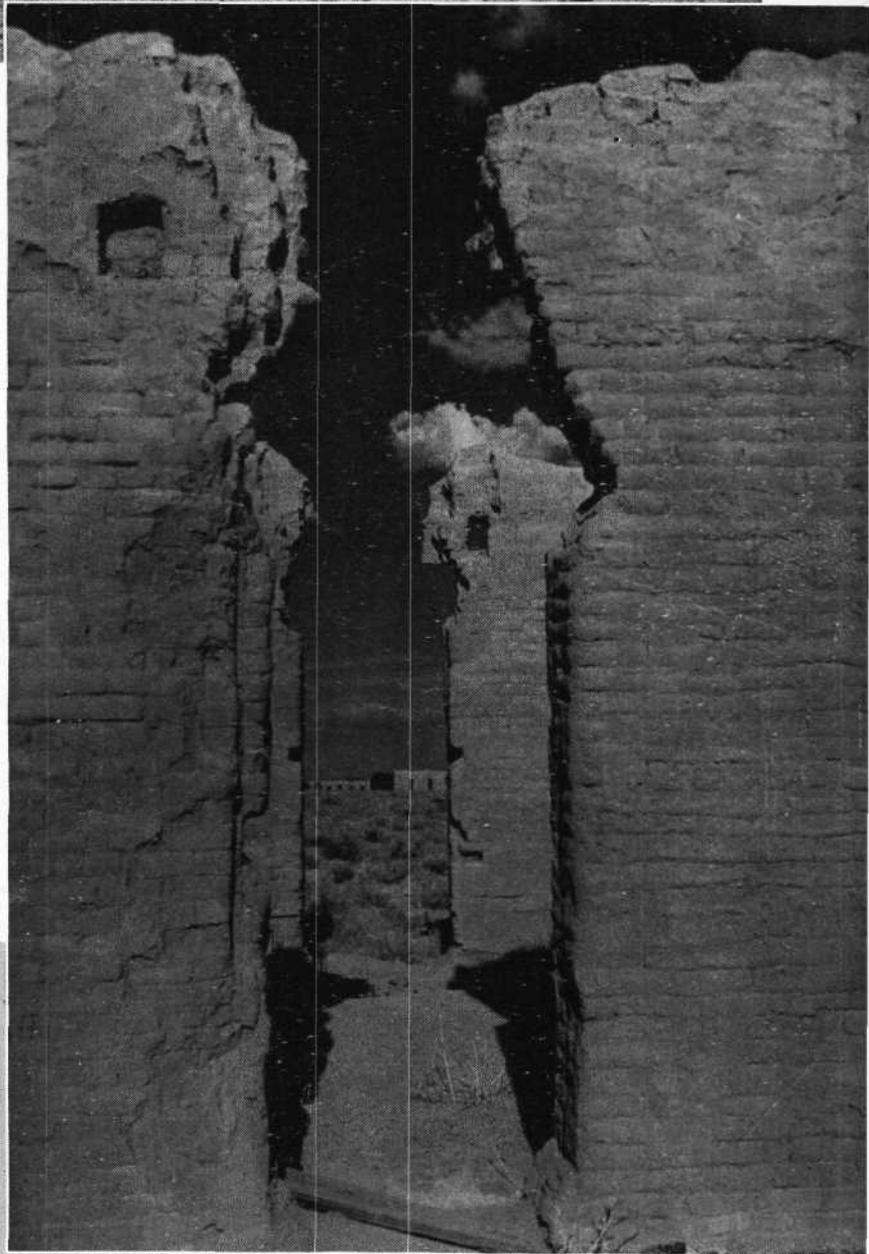
YERINGTON

'PIZEN SWITCH'

Surrounded by rolling fertile ranching valleys, Yerington is thronged today with buckaroos and miners. Legendary origin of the name "Pizen Switch" was the lethal potency of the whiskey served in a trading post at the fork in the road which became the city. Yerington was renamed by serious minded citizens, for a railway president, who, unaffected by such blandishments, refused to extend his rails to this community. Railroads did come later, and the city grew.

Nearby are gem stone areas of such fabulous richness that tourists are invited to pick up all they wish! Fishing, hunting, and other sports are unspoiled in this area and facilities are easily arranged.

*Top—Mason and Smith valleys are rich livestock ranching areas.
Right—Abandoned ruins of Fort Churchill. N.H.
Below—Moving Nevada cattle to market. D.A.*



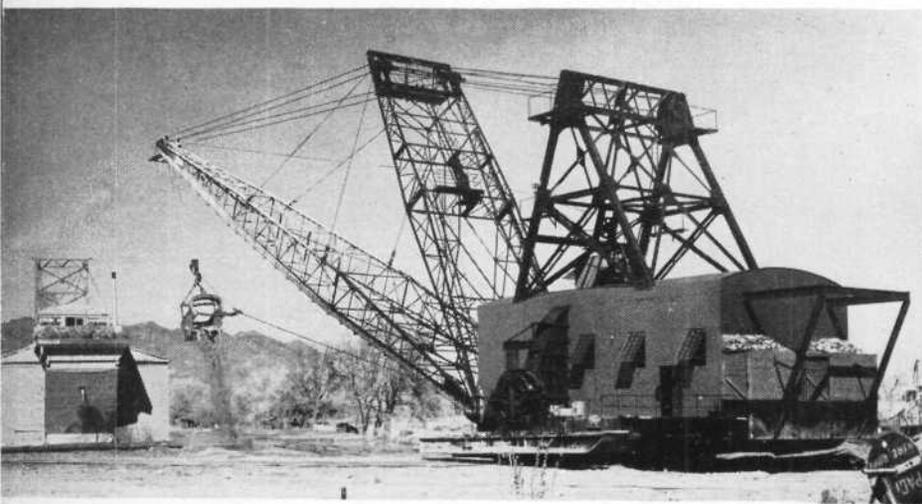
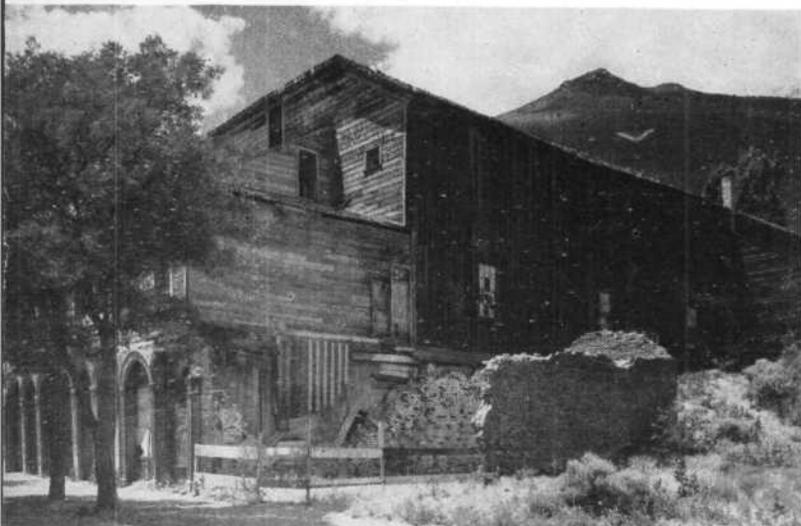


VIRGINIA CITY

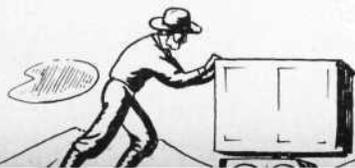
Twin cities of the dramatic '60s when Nevada became a state, here swashbuckled the Bonanza Kings, gun men, miners, cattle rustlers, ranchers, bandits, opera stars, and the great figures of the day from every corner of the world. Original buildings still are in use today. The ancient railway still puffs along with old style rolling stock. Elite volunteer fire departments trot out antiquated hand pumps on occasion!

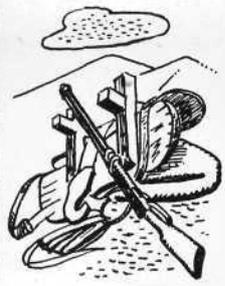
Here you can step back 75 years, for these communities have kept the old ways and old things intact. Mark Twain's home and newspaper shop, the U. S. Mint, mines, mills, state buildings, the Crystal Bar, Bucket of Blood, Piper's Opera House . . . are all open for you to see.

*Above—Miner's Union hall on the Comstock, N.H.
 Upper left—Courthouse, Virginia City, N.H.
 Left—Piper's Opera house, Virginia City, N.H.
 Lower left—Gold dredge below Virginia City, N.H.
 Lower right—Capitol at Carson City, N.H.*



CARSON CITY





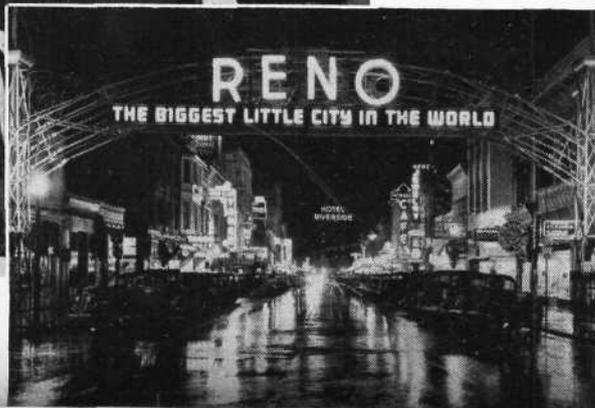
RENO

The exciting "Biggest Little City in the World" with its smart hotels, clubs, and bustling traffic is the center of much to see and do. Some 40 miles north is vast, silent, Pyramid Lake in a Paiute Indian reservation.

Lake Tahoe is a few minutes to Reno's west, with resorts and playgrounds. Some 1,000 square miles of good ski terrain with lifts and warming huts are close to town. Good paved highways lead everywhere . . . to dude ranches, golf courses, lakes, rivers, mines, Indian reservations, the ghost towns of Washoe City, Galena, Franktown, Poeyville.

You'll enjoy fine hunting for deer, pheasant, quail and bear. Good fishing is found in the **center** of downtown Reno!

*Top right—Fishing in the heart of Reno. C.B.
Right—Campus, U. of N. —V.
Below—Gaming in Reno. B.
Lower right—Virginia street. Pyramid lake.*





We'll Be Seeing You . . . Along the Bonanza Road!

We who have made this pictorial possible invite you to visit these historic and colorful places. Travel our smooth highways, let your imagination run free. And do drop in and ask for more information. We have it; or we know some old timer who does!

**BOULDER CITY CHAMBER OF COMMERCE
BOULDER CITY, NEVADA**

**LAS VEGAS CHAMBER OF COMMERCE
LAS VEGAS, NEVADA**

BUSINESS MEN OF BEATTY
J. J. Chambers
George Greenwood
Revert Brothers
Northern Supply Company
Amargosa Power Company
El Portal Courts
Ralph Lisle
Joe Andre

**GOLDFIELD CHAMBER OF COMMERCE
GOLDFIELD, NEVADA**

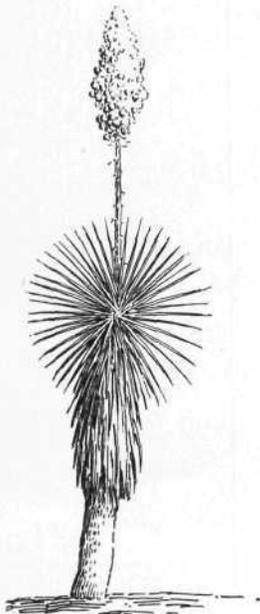
**TONOPAH CHAMBER OF COMMERCE
TONOPAH, NEVADA**

**MINERAL COUNTY BOARD OF COMMISSIONERS
(Hawthorne-Mina)
HAWTHORNE, NEVADA**

**YERINGTON BONANZA ROAD ASSOCIATION
YERINGTON, NEVADA**

**RENO CHAMBER OF COMMERCE
RENO, NEVADA**

**NEVADA STATE HIGHWAY DEPARTMENT
ROBERT A. ALLEN, STATE ENGINEER
CARSON CITY, NEVADA**



Photographs in this pictorial section were furnished through the courtesy of and may be identified by the following key letters:

U.P.—Union Pacific Railway.
N.H.—Nevada State Department of Highways.
B.—Bennett Pix, Reno.
C.B.—Charles Bennett.
V.—Truman Vencil, Hollywood.
D.A.—U. S. Dept. of Agriculture.

Wilson Advertising Agency RENO



Fritiof Persson in the ancient Indian workshop where the ground was covered with a profusion of obsidian chips.

On a recent trip along Nevada's Bonanza trail, John Hilton and his artist friend, Fritiof Persson, made two discoveries of interest to the rock collector—one of them an obsidian field which evidently had been the workshop of prehistoric arrow-makers,

and the other a road that literally is paved with obsidian and agate. Nevada is virgin country for those seeking new mineral specimens, and here is a story that gives locations for those who sooner or later will be following the desert trails in that region.

Workshop of Ancient Arrow - Makers

By JOHN HILTON

WHEN Fritiof Persson and I left Las Vegas to follow the Bonanza trail through the old mining camps of Nevada, we were sure we would find some gem rocks in that highly mineralized area.

And true enough, we found them—but not exactly as we had expected. In the first place, it isn't often that one can stop the car along a paved highway and gather interesting specimens from the right-of-way

along the road—and yet that is what we did on Bonanza trail.

But the most amazing experience on this trip was the discovery of a field where prehistoric hammer-hounds had been at work long before this generation of Americans began roaming the desert in quest of pretty stones. I had always assumed that those morons who go out into a mineral field and start smashing up the nice specimens to see what is inside of them were one of

the devil's most recent creations. But I was mistaken. The aborigines were doing it long before Columbus discovered America—and contrary to prevailing opinion among rock conservationists in this year of 1942, I only wish they had done more of it.

But to go back to the beginning of my story, Persson and I had stopped at Las Vegas to inquire as to possible gem fields in the western Nevada area through which we were going. The folks there were very helpful with their suggestions—but when we began checking up we discovered that many of the best fields recently have been set aside for military purposes, and are closed to sight-seers and gem prospectors and other humans whose business is non-essential to the making of war.

For a long time, both visitors and native Nevadans have been wondering what good use might ever be made of the great open spaces of Nevada. Today the army and navy have answered that question, and the dry lakes and barren hills have as-



Handful of obsidian nodules picked up along Bonanza trail in Nevada.

sumed strategic importance as training grounds for various branches of the fighting establishment.

Then we met Bob Griffith, former secretary of the Las Vegas chamber of commerce, and he gave us a clue that seemed to offer possibilities for a rockhound. He showed us some samples of obsidian and jasper he had picked up out of curiosity one day when he happened to stop his car along the road. He marked a spot on the road map 28 miles north of Beatty as the place where he had picked up these colorful pebbles.

We stopped at Indian Wells for a chat with Tim Hornaday. Tim is a No. 1 desert rat who knows his part of Nevada extremely well, and he mentioned many places where gem stones were to be found. But today they are within the bounds of a bombing range. Hornaday has some tempting specimens, but just now bombing practice is far more important than gem collecting, and so we will have to await that day when the shooting is over. The desert and its rocks still will be there.

At Indian Springs we met Dr. Adrian Van Der Horst who has been carrying on research work in biology in that area. He told about many miles of fossil-bearing limestone to be found in the range back of the Indian Wells ranch.

After we had talked with the doctor a while, he said he would like to give us a collection of fossils. "I am leaving in a few days," he explained, "and I would rather give them to you than throw them out in the back yard."

We accompanied him to his laboratory where everything was in the confusion of packing. Boxes were being filled with preserved reptiles to be sent to scientist friends. Microphoto equipment lay par-

tially dismantled and culture pans of desert shrimp were drying up. The doctor is leaving to join the Dutch air force.

We were especially interested in the desert shrimp. He had several species which were being grown in cultures raised from the mud of various dry lakes. The average person, being told that shrimp live in the desert, would assume that this was just another of those tall tales of the desert country. But this is not fiction. The doctor said the shrimp not only were found in dry lakes but are carried by winds to tiny pools and springs all over the arid country. The explanation is that they lay their eggs in the drying mud of lakes and pools, and these eggs remain fertile for years without moisture. Then when rains come and the temperatures are right they incubate.

We appreciated his gift of the fine collection of native fossils which included interesting marine shells, sponges and some decorative crinoidea. One slab of limestone showed so many varieties and sizes, and the fossils were so completely eroded from the stone that the pattern looked like the sweepings from under a mechanic's bench. Some of the crinoidea looked like nuts and bolts while others resembled lock washers and other mechanical gadgets.

The folks at the springs assured me that anyone seeking fossils will find a short trip back into the hills very fruitful, but hikers should keep in mind that the highway is in the boundary of the Tonopah bombing range and that forbidden ground lies in the opposite direction.

We left Dr. Van Der Horst with a feeling of added resentment toward the German warlords whose ambitions have made it necessary for fine scholarly men of this

type to halt their constructive research work.

At Beatty we inquired about jasper, agate and other gem materials. At first the local citizens assumed we were seeking tonnage deposits for commercial use. The prospectors and miners have been looking so long for gold and silver and other valuable minerals they cannot imagine anyone running around over the desert looking for rocks with little or no commercial value. I hope we haven't started a "rush" for jasper locations. We left the town with a feeling that our story of merely collecting stones for the fun of it had not been accepted at face value.

Just outside the town I stopped the car to take a photograph of an old ranch against a multi-colored hill, and found myself standing on the site of a prehistoric arrow-maker's workshop. And this is where the prehistoric hammer-hounds enter the story. The surface was literally covered with chips of jasper and agate of many hues. Apparently the Indians had found abundant material in the surrounding hills for their arrow and spear points.

This place probably was once the shaded bank of the Amargosa river, and during the heat of the day when hunting wasn't so good they gathered here to make their points. Many of the chips are large enough for cutting cabochons. The soil seemed to be full of the material, indicating that it was used by the Indians over a long period of time. Collectors will find this an interesting field for exploration.

We continued along the highway 28 miles until we came to a side-road marked by a mailbox resembling a tiny house. This was the place mentioned by Bob Griffith. Here were nodules of obsidian in profusion, with occasionally a piece of yellow or brown jasper.

Suddenly Fritiof called to me. "Just look at the road," he said. "It is paved with gem stones."

Sure enough, the oil-mix highway was made from the gem-bearing gravels which cover the desert here, and black pieces of obsidian were inlaid in the highway pavement itself. There were occasional fragments of agate or jasper. All were exposed and partially polished by the rubber tires passing over them.

We drove up on the plateau that bordered the road. It was not necessary to get out of the car to see that the desert here was covered with nodules of obsidian. Most of these were black, but I found a few with a mottled shading of red and black. Some were a light smoky tint with black stripes and I found a few having that silky luster which gives a chatoyant or cat's eye effect if a cabochon is cut with its base parallel to the millions of lines of air that have been strung through the obsidian like taffy. These easily can be distinguished from the others in the field by

their soft bluish-grey appearance and the silky luster they display in sunlight when wet. Jaspers were found here too, but not plentiful enough to make them of special interest to the collector.

I was about to turn back to the car when I saw something shining like broken glass some distance away on my left. When I arrived at the spot I found it was just that—broken glass—but this glass was of volcanic origin and the Indians had been flaking it to make weapons for the hunt and tools for domestic use. I found the larger flakes close to a large boulder which would have made an excellent bench for the ancient workman. This proved to be generally the case. While many beautiful flakes too curved or too thick to be worked properly were picked up during the short time we were there, the best material was always close to the large boulders strewn over the field.

At Goldfield we were told about some marble deposits south of Beatty, and on our return trip we stopped to see the area near Carrara where the desert is literally paved with boulders of various colored marble. A large quarry and workings could be seen from the highway, but the marble is easily collected from the roadside, just as in the case of the jasper, agate and obsidian.

So here at last is a collecting area where one need not put those precious tires over rubber-chewing rocks of the remote desert trails to collect all the specimens desired—and this is one region in which the hammer hounds actually have improved the status of gem-collecting.

Weather

FROM PHOENIX BUREAU

Temperatures—	Degrees
Mean for April	66.3
Normal for April	67.0
High on April 10	92.0
Low on April 23	41.0
Rain—	Inches
Total for month	0.76
Normal for month	0.40
Weather—	
Days clear	15
Days partly cloudy	7
Days cloudy	8

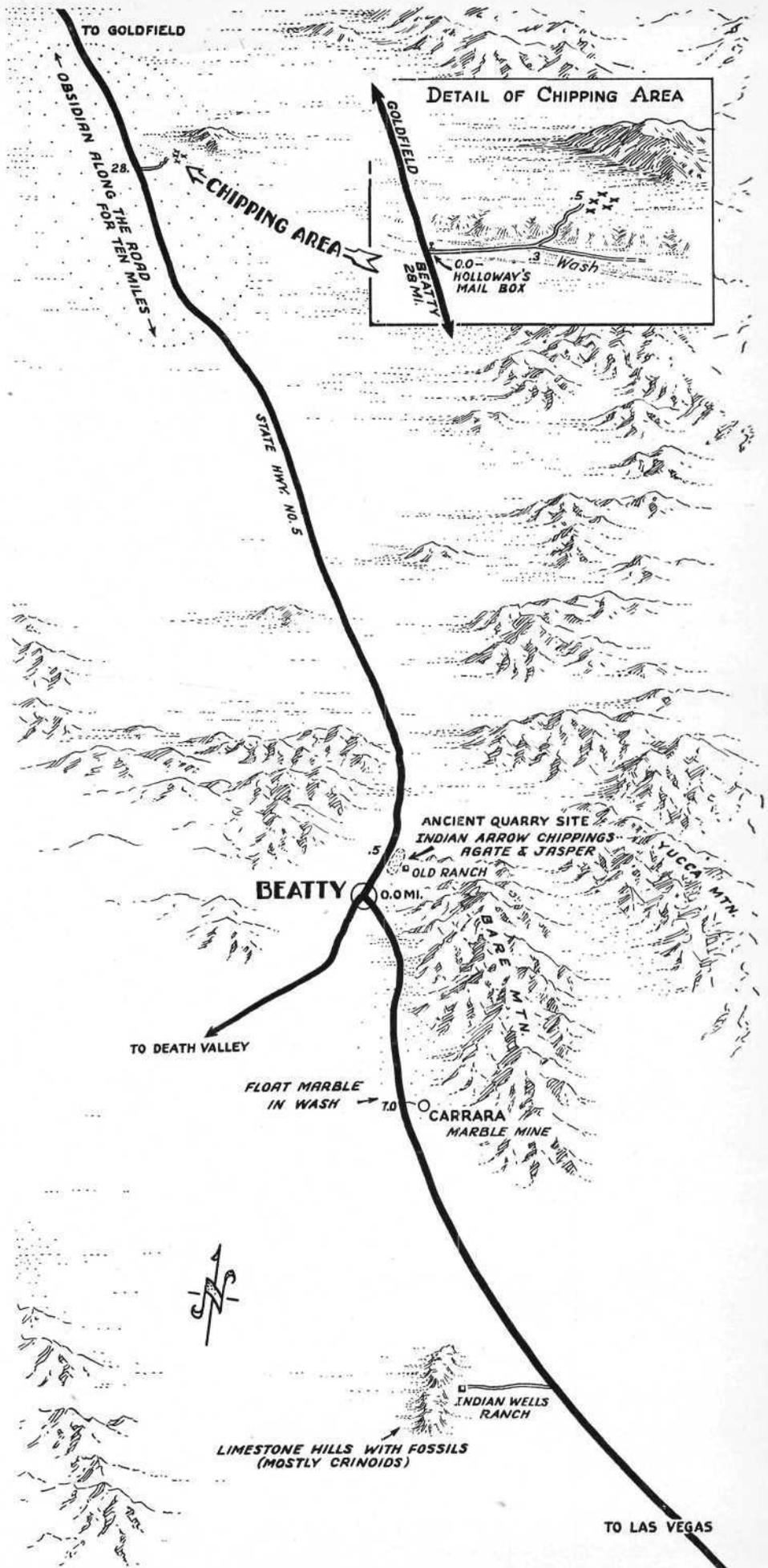
E. L. FELTON, Meteorologist

FROM YUMA BUREAU

Temperatures—	Degrees
Mean for April	68.1
Normal for April	69.5
High on April 3	92.0
Low on April 7 and 30	45.0
Rain—	Inches
Total for month	Trace
Normal for month	0.10
Weather—	
Number of days clear	19
Days partly cloudy	8
Days cloudy	3
330 hours of sunshine out of a possible 390 hours, the lowest for April in 33 years.	

Colorado river—Discharge from Boulder dam varied from 5900 second feet on the 5th to 26,200 on the 15th. Average around 21,000 feet. Storage behind dam gained about 1,500,000 acre feet. Promise of fairly heavy spring run-off.

JAMES H. GORDON, Meteorologist



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November, 1937

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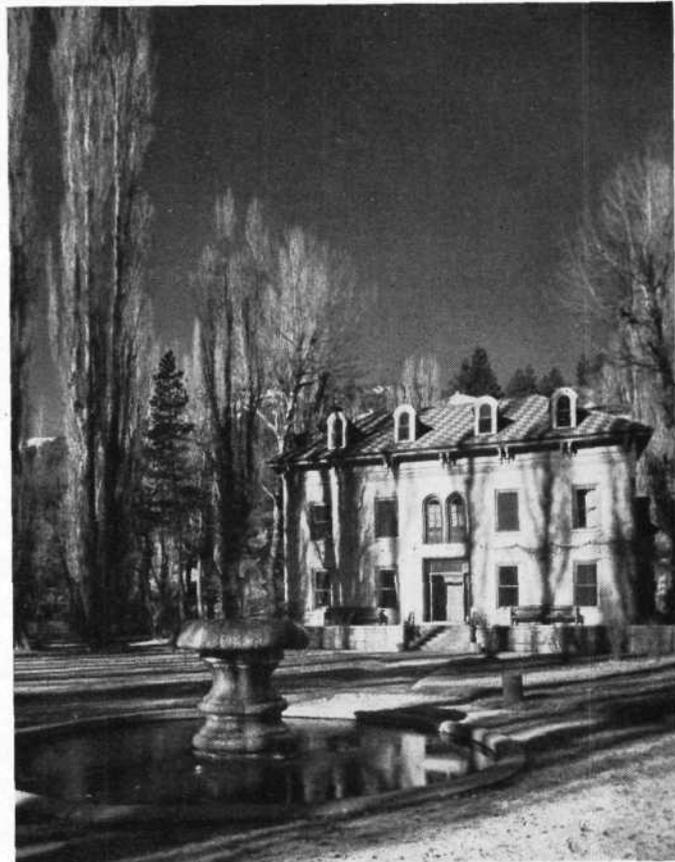
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OLD MANSION IN NEVADA!

Who can identify this picture?



PRIZE CONTEST ANNOUNCEMENT . . .

There is an interesting story back of
the stately structure shown in the above
photograph. It is a story closely identified

with the boom days in Nevada's mining
history.

In order that Desert Magazine readers
may have the details, a cash award of \$5.00
is offered to the contestant who sends in
the most complete and accurate word-
sketch about the people who built this
mansion, the circumstances, and its pres-
ent status.

Entries are limited to 750 words, and
the story should include the location and
accessibility by highway or other means.
Entries must reach the Desert Magazine
office by Saturday night, June 20, and the
winning story will be published in the Au-
gust issue.

. . .

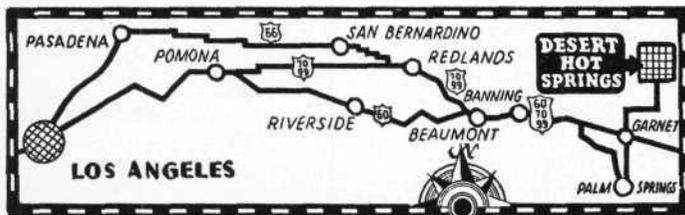
Inter-Racial Marriages Legalized . . .

Marriages between Indians and persons
of Caucasian blood, heretofore prohibited
in Arizona, were legalized recently under
the provisions of a measure signed by Gov-
ernor Osborn.

The bill, passed at a special session of
the legislature, also validates the marriages
previously contracted between white per-
sons and Indians.

DESERT HOT SPRINGS 10 1/2 MILES NORTHEAST OF PALM SPRINGS THE LARGEST BEST EQUIPPED NATURAL HOT MINERAL WATER BATH HOUSE ON THE DESERT

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L. W. COFFEE, Subdivider

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Los Angeles, California



In firing pottery, the supreme moment comes when the cooled vessels are examined for cracks or flaws. Rider South finds that this group of bowls came through the fire in perfect condition.

The art of pottery making among southwestern Indians is handed down from generation to generation. Lacking this background of experience and tradition, members of the South family on Ghost Mountain have had to learn their pottery craft in the hard school of trial and error. But they have persevered—and in his story this month Marshal tells in detail the methods by which they now produce a very substantial grade of earthenware. This is another chapter in the highly successful experiment in primitive living which the Souths are carrying on in their remote desert home at Yaquitepec.

Desert Refuge

By MARSHAL SOUTH

RIDER and I got up very early this morning, just as soon as the cool desert dawn brought light enough to see. There were fresh seeds to plant in the garden frame and we wanted to get the job done before breakfast. Our tiny garden at Yaquitepec would be less than a joke to anyone accustomed to the broad sweep of lush, fertile acres. But it is surprising the amount of vegetables its microscopic expanse will yield. Here in North America we have not yet begun even to scratch the possibilities of our land. The average Chinese farm is about an acre and a quarter in area. And we have a long, long way to go yet before necessity brings our limit to anything near that.

A long while ago Bolton Hall wrote a book entitled "Three Acres and Liberty" and another "The Garden Yard." Old books, now. But they still should be obtainable in most libraries. They are more than worthwhile reading. The truths they set out have a deeper meaning today than ever before. For in that direction—and in that direction only—lies salvation for an industrially maddened world. The Earth!—individual contact with the earth. It is a kind Mother. The Chinese are a nation of small, individual farmers. They have existed for 4,000 years or more; and are probably good for at least another 4,000—if they have the good sense not to go entirely "modern." It is a fundamental truth that a nation whose roots are deep-struck into the good earth cannot be destroyed.

So Rider and I dug and weeded in the clear, white dawn.

Burying all the tiny waste leaves and grass stems deep in the soil for fertilizer and sowing our seeds—Black Seeded Thompson lettuce this time—in the little vacant spaces between the rows of other growing stuff. The main thing with a garden frame is that you have to keep it busy; as soon as one row is harvested new seed must be planted promptly in the vacant space. And never waste a dead leaf or the tiniest scrap of humus producing material. Dig it all back into the earth. Thus the little plot grows richer and richer—the best and only safe bank in the world. Only too well we remember when our soil was so poor that it would not grow anything. Now it is all hand made and does fairly well, though some of the fertilizer was gathered, and carried home in sacks, over a radius of five miles.

The sun came up as we worked. Somehow we have never yet gotten to the point where a desert sunrise is commonplace. We still invariably exclaim over it, as over some daily recurring miracle that is never twice the same. This morning, as we ceased our labors a few moments, watching the first point of blinding fire among the rocks of the eastern ridge grow and grow as the mighty circle of the sun heaved up behind the shadow lace of juniper branches and tall mesal poles, it seemed to us—as it always does—to be the most beautiful desert sunrise we had ever beheld. The air was clear and quiet and summery.

Carpenter bees droned and bumbled, and in the long sun-rays that came striking through the glistening patches of bunch grass among the granite rocks the whole summit of Ghost Mountain seemed to take fire in waves of dazzling metallic sheen. A humming bird whirred in and lit, delicate as a tuft of thistle-down, upon the tip of a gently swaying wand of ocotillo; pausing a moment to peek, with cocked head, at its glinting reflection in the tiny rock pool which Rider keeps filled with water for his wild bird pets. Somewhere up the hill a quail called, and a couple of purple finches winged low across the house roof. From the chimney a pale skein of smoke lifted as Tanya lit the breakfast fire. And against the faint clatter of pots and dishes rose laughter and shrill squeals of delight as Rudyard and Victoria romped on the bed in their regular morning pillow fight. Yes, just another sunrise.

Another day. New life. New hope. New joy. Somewhere there are cannon booming. Steadily, hate maddened, their voices draw closer. With truth was it said, a long time ago: "My house is a house of prayer, and ye have made it a den of thieves!"

These have been busy days, lately. "Cement days"—for we are striving to enlarge the Yaquitepec water reserve. As we

grow here in numbers—five now, where in the beginning there were but two—our consumption of water increases alarmingly. Also our gardening increases, and our livestock. The well has not yet been located. Therefore the only answer, so far, is cement. Cement and more cement!

For long we have had a standard joke that when there is sufficient water with which to mix cement there is no cement. And when we have cement, then there is no water to enable us to use it. This time, amazingly, however, we had both—several sacks of the precious stuff and ample water remaining in the outdoor pool to turn it into concrete. So we dug and plastered merrily—establishing, before all our supplies were gone—three new potential reservoirs. One on the slope south of the house; one in a deep excavation among the rocks north of the garden; and another in a depression beside the hollow-topped granite boulder which, when rain full, is known as "Lake Yaquitepec."

No, these new catch basins are not finished—only well started. But we take abundant hope and satisfaction from them, and from the sight of their still thirsty-looking concrete glaring white beneath the turquoise sky. Someday, in those thirsty depths, there will be cool, gleaming water—water for more garden; for livestock; for every purpose. Life is good. "If you could only see the fine cabbages which I raise with my own hands," wrote that old ex-emperor of Rome proudly, when urged to return to the capital, and to power, "you would not wish me anything so unkind as that I should again assume the hollow pomp of office."

And lately there has been pottery to fire, too. Always a nerve wracking job. For apprehension, like a gloomy owl, perches always upon the shoulders of the potter until his wares come safely from the fire. It was ever thus. The old Greek potters made pilgrimages to the temples and sought, by gifts, to bribe the favor of the gods. For the clay is temperamental, and the finest of pots, wrought with loving care and bearing every promise of sturdiness, will crack and shatter in the flame—like so many promising humans who wilt and crumble under the test of adversity. The old-time Indians—and the modern ones too—knew the same troubles. "If the dirt don' like you it crack right away" a dusky skinned potter advised me once, with glum philosophy. And it is true. The clay, seemingly, has likes and dislikes and whims and notions. Ah, how many gay pots and bottles and jugs and bowls go blithely to the fire—as to the testing furnace of war—and come forth only in the bitterness of ruin.

Mayhap the potter de luxe has better luck. Dimly it is our notion that, beyond our horizon, there exist vainglorious kilns, fat with magnificence, in whose polished interiors haughty pots are "fired" by gas-flame and by electricity. We have read of such things and, shudderingly, at times we have even peeked, for just a flash, at the king's-ransom prices at which such super-civilized kilns sell. But that is as far as our knowledge—or our envy—goes. Yaquitepec pottery has need of no such frills. In the blaze of the open fire-hearth, as was the way of the ancient dwellers of the desert, it must take its trial. "Old ways are best" says the contented proverb. Well, at least they are often the healthiest and happiest.

Primitive man evolved all sorts of plans and notions for the outdoor firing of pottery. The two main essentials are, however, a dry spot of ground and an abundance of fuel. The first is comparatively easy to find; the second not always so simple—especially in the desert.

There are two types of fuel that are our chief reliance for pottery firing. One is the dry, dead mesal butts of last season's blooming. The other is ancient yucca trunks. The latter is the best, but there is more of the former. Mesals come, in greater or less quantity, every year. But the yucca is of slow growth. The supply of ancient, dead trunks is strictly limited.

For this last firing, however, we were in Fortune's path. By accident Rider and I had discovered, in a secluded little spot on the lower desert, a veritable treasure of yucca fuel—

enough for a generous firing, and to spare. Since it was easier to take the pots to the fuel than the fuel to the pots, we packed our sun-dried clay ware in back baskets and, one bright morning, tramped away down the mountain. Rudyard came too. Our Rudyard is growing and his feet are easier now to keep shod with sandals. Baby feet are too small to handle sandals successfully; and for a long while this was the main reason for leaving him at home. Now, to his great delight, this difficulty is passing, and more and more he plods along on our excursions. Usually well armed with his bow and arrows for protection against "savitg cweatures"—for which he always scans the desert attentively.

A load of fragile, unfired pottery is not the least worrisome burden that one would choose to pack down a precipitous mountain trail. We picked our steps carefully. But about half way down a wild yell and a cascade of loose stones brought me to a sudden face about to discover that Rider's feet had slid from under him on a treacherous ridge of shale and, clutching frantically at his burden, he sat down heavily.

"Ow! Ow! All the potteree is bwoken! All the potteree is bwoken!" yelled Rudyard, dancing with excitement and brandishing bows and arrows as he peered into the basket. "All bwoken! Every bit! Daddy, can I have *all* the pieces."

"It's not broken. Not any of it!" Rider scrambled to his feet. "I just managed to save the basket from hitting the ground." He was a bit breathless.

"But isn't anything hurted?" Rudyard demanded. There was distinct disappointment in his tone.

"Yes," Rider said briefly, as he resumed his way down the trail. "Those stones I sat on were hard."

"Oh, is *that* all," said the mighty hunter of "savitg" creatures. "I am sowwy." With which ambiguous remark he dismissed the matter. His arrow whizzed across the mesals and another ferocious "rhynosterous" fell dead.

We reached the bottom without further mishap. In spite of our early start the sun was well up and it was getting hot. By the time we had trekked through the creosotes and over the little intervening rise to our destination we were glad to ease down our burdens in the shade of a friendly juniper.

There is an asserted thrill to treading where no man has ever trodden before—though so ancient and well trodden is our old earth that I believe it is safe to say that no man has ever experienced it, no matter what seeming evidence to the contrary. A greater thrill, I think, comes from the continual proof that, no matter where we may happen to be, fellow human beings have, at some time, preceded us. At any rate it was so here. For, on the brown, glowing earth, not 10 yards from our tree, a roughly circular scatter of big, flattish stones told of an old time mesal hearth. And, stirring the deep mulch of fallen juniper leaves with the point of his arrow, Rudyard found beneath our shade tree the fragments of a small, broken olla. One large section had been part of the neck. In it there was a neat hole—evidently one of a pair of holes through which a string of fiber or raw hide had once been passed for carrying purposes.

We piled the ancient hearthstones together and made a little paved floor. On this, carefully arranging the pieces so that all should get as even a heat as possible, we set our clay ollas and bottles. Some of the nearer dead yucca trunks we brought and laid around our pile of earthenware somewhat after the fashion of a fence. But not too close—the heat must come gradually at the first. Then we dragged in all the dead tinder-like trunks we could find. It is astonishing—and heartbreaking—what a vast amount of fuel a single firing of pottery will consume. We worked until we had a small mountain of dead wood at hand.

Then a carefully arranged priming of dry mesal leaves in a strategic corner of the pottery corral. Rudyard struck the match. Smoke lifted and the red forks of flames ran right and left. With long mesal poles Rider and I poked and shifted the yucca trunks, shoving some closer, others farther away. Too great a heat at the start will crack the pottery. It must be

warmed gradually. Sometimes it is necessary to protect fragile pieces with leaned barricades of old, broken ware.

We had forgotten our temporary weariness now as we became engrossed in the job of tending the fire. While Rudyard ranged the immediate district, slaying "fewocious beasts" with well aimed arrows, Rider and I poked and watched the burning trunks, laying on new ones here and there; gradually working the flame-ring closer and closer to the pots as they became more heated. Finally we decided that they were safe enough for the main fire. Warily, for the heat was intense, we began to roof them completely over with dry fuel; piling dead trunks over and across until the pots were the center of a hollow, blazing mass. Dead yuccas can develop a tremendous heat. Through the crevices between the logs we could glimpse, here and there, our pots glowing a fierce, cherry red.

For half an hour we kept the fire going at full heat, filling in

burned-out gaps with new fuel. Then we dropped our fire poles and sat in the shade of the juniper to rest.

We went home in the early afternoon, leaving our pottery standing, like the grim survivors of a battlefield, in the midst of a ring of smoking ashes. It was still fiercely hot—too hot to get near. It is best for fired pots to cool slowly and it would be a long while yet before the fire completely died. The coyotes and the brown ghosts would not harm our wares and the desert starlight harbored no vandals. We left them alone in the silence.

They were cold enough next day, standing cheerful and ash-flecked in the midst of a fire ruin that was as chill as they. Eagerly—for this is the supreme moment—we thrust hands among the soft, grey-white ash banks and drew the pots forth one by one, examining them critically; tapping them with appraising fingernails while we listened for the clear, metallic ring that indicates a perfect piece. The day was warm and glowing; the silence was like wine.

Against the brown earth the fire-ash was a tumble of snow. Piece by piece, with mounting excitement, we tested our pots.

Yes, the "dirt" had "liked us." Nothing was cracked. By some miracle it had been a hundred percent perfect firing.

THE SIMPLE WAY

*It is the simple things that count,
The little things that urge and sway
And gradually mount and mount
To mold the life we live today.
It is not hard to choose the right,
Each act is like a guiding hand.
Remember that the mountain height,
Consists of tiny grains of sand.*

—Tanya South



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His was the heart of a true pioneer. . . . He asked no reward for the service he rendered to Imperial Valley . . . he got none . . . and today the whole of Imperial Valley is a living and growing monument to his vision and courage.

Today also, with the Imperial Valley taking its place among the nation's leaders in national defense—producing a never-ending stream of food-stuffs worth many millions of dollars—that splendid pioneer spirit is mirrored in the operation of the

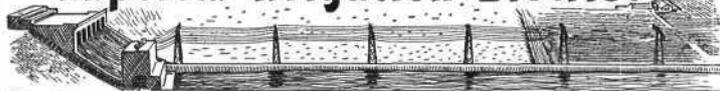
great irrigation system Dr. Heffernan helped to create.

Like the doctor, the management of that system, the Imperial Irrigation District, receives no reward—for the Imperial Irrigation District is cooperatively owned by the people of this inland empire—every cent of profit reverts directly back to their own benefit.

The same water that irrigates more than a half million acres of one-time "wasteland" also drives the generators which supply electric power to this great area.

WATER AND POWER—Cooperatively owned—AND THE PEOPLE REAP THE REWARDS . . . Truly Dr. Heffernan did not give his time and money without reward.

Imperial Irrigation District



Use Your Own Power—Make it Pay for the All American Canal



Brine pumped from beneath the surface of the desert dry lake is sprayed from these elevated pipelines during the winter months when low temperatures will crystallize the sodium sulphate in the water.

Chemicals From a Desert Dry Lake

They call it Dale Dry lake. But it is dry only on the surface. Beneath the pattern of dry cracked earth that forms the floor of this desert playa is a great subterranean pool containing millions of tons of minerals useful to mankind. It took faith and courage and a lot of hard work to bring these chemicals to the surface and convert them to commercial form. But men persevered—and here is the story of their achievement.

By H. H. MARQUIS

FOR many months Lee Richardson had been telling me about Dale Dry lake out in the desert end of San Bernardino county, California.

His story was interesting. He and a group of associates were pumping brine from beneath the surface of one of those waterless playas which dot the map of the Mojave desert. Operating as the Desert Chemical company, they had worked out a process in which Nature, with the help of a small crew of men, was reclaiming 50,000 tons of chemicals a year.

Lee invited me to visit his camp—and I was eager to go. Leaving Los Angeles early enough to see the sun rise over the San Bernardino mountains, we were in Twentynine Palms for breakfast.

From the town we drove north a couple of miles and then took the well graded road east across the floor of Big Morengo valley 20 miles to Dale lake.

As we approached the eastern rim of the valley there was little evidence of in-

dustrial activity. Then unexpectedly, a power line loomed ahead, and a couple of derricks. A few minutes later we saw the little group of buildings that comprise the company's plant. Beyond were broad artificial lakes, pumping stations, vats and new roads.

At the camp we met the man who for more than 20 years has fought for the development of Dale lake, fought against constant obstacles for the realization of his pioneering vision. He is Irvin Bush, who first saw the possibilities of a giant desert chemical industry and after two decades has seen his dream come true.

In 1920 Bush was chemist at the Supply mine, then operated by Charles M. Schwab. The Supply, still a gold producer, is in a draw on the southern rim of the Big Morengo valley. To reach the mine, Bush would leave the railroad at Amboy, and cross the valley near the eastern end.

As he followed the old wagon road through the smoke trees and greasewood,

he saw what appeared to be salt crust on the adobe clay of the valley floor. He made tests that first indicated the presence of potash, but soon showed greater deposits of sodium sulphate and sodium chloride. Sodium chloride is table salt, while the sulphate, similar in appearance, is essential to paper mills, rayon factories, plastics manufacture and many other industries.

For many centuries, minerals in solution have been draining into Dale lake from a 1500-square mile watershed. There is no outlet to the lake and as the water evaporated the minerals were deposited on its floor. Every rain brought its new load of sodium. Between storms the sink dried up and lay parching under the sun. The cycle has been repeated thousands, perhaps hundreds of thousands of times.

Vision it must have taken, and a knowledge of geology and chemistry to picture a great chemical industry here. Certainly the desert shows little evidence of the wealth it conceals. For Dale lake is

entirely subterranean. No casual observer would guess that water lies under most of the arid valley.

Bush recalled the first problems his enthusiasm faced, and eventually overcame. Money was needed to prove his discovery; money for test wells, for no one knew whether the salts were in solid or liquid form. He interested Lyman Stewart, president of the Union Oil company, and a series of ten test wells were sunk, demonstrating the presence of an underground brine lake.

Before further development could be completed, Stewart died, and then followed many years of litigation, delay and disappointment. Although Irvin Bush is not now connected with Desert Chemical, he is one of the owners of the 1500-acre property under 99-year lease, and has taken a leading part in every step of the project's development. His enthusiasm is keener than ever as he sees thousands of tons of valuable chemicals shipped from the site of his early discovery.

To anyone acquainted with the mechanics of salt recovery it hardly seemed possible that this modest little camp out here on the desert could be shipping so large a tonnage of mineral products every year. This brings into the picture the vision of a younger man, whose imagination and technical knowledge was as essential as Bush's discovery.

He is Lee Richardson, president of Desert Chemical company, who has crowded into relatively few years a wide experience in mining and chemical engineering. For years, chemists have been telling Richardson that he couldn't make a commercial success at Dale lake. Proven production and low costs have caused his pessimistic advisers to retract their words!

Dale lake hasn't a single boiler, condenser, evaporator or any of the usual mechanical apparatus by which salts are recovered from brine. Richardson lets Nature do all the work. All Desert Chemical company has had to do is provide simple facilities.

It's true, as Richardson and Bush explain, that Dale lake is different—that the conditions are not duplicated anywhere else. The process is unique, and almost inconceivable to chemists trained in the standard methods.

First, the brine in Dale lake is an almost completely pure solution of two salts. One is sodium sulphate, widely used by many chemical industries. The other is common table salt.

At any temperature below 60°F., sodium sulphate starts to crystallize, but salt doesn't, so the sulphate is separated by spraying the brine into huge vats during the winter. Then the water containing the salt is pumped into huge, shallow lakes, where the hot summer sun evaporates the moisture, and salt is harvested.

Dale lake has plenty of cold weather and an ample supply of summer heat—



Lee Richardson, who furnished the technical knowledge necessary to reclaim the chemicals that underlay Dale Dry lake.

also the only other requisite—a constant supply of fresh water to wash the recovered chemicals. It's true that the cycle takes a year—but last season 50,000 tons of sulphate were shipped.

As Richardson talks, it sounds too simple to be true, but final success was not so easy. The first attempt at any new process takes years of testing. For a decade Bush and Richardson have built increasingly large pilot plants. There are little matters of precipitation rates, saturated

solutions, fractional crystallization and similar technical problems to which all the answers had to be found.

As we made our tour of the property it was easy to see that time and money had been spent liberally. Bush proudly showed us the test wells—50 of them on 500 acres. These prove the existence of 12 to 13 million tons of sulphate. Less frequent wells over 1500 acres indicate more than 30 million tons. He tells us that even with European imports shut off, that's enough



Dale Dry lake, in the eastern end of Big Morengo valley, California, has been collecting minerals from the surrounding hills for countless centuries.

to last this country a hundred years or more.

We drove over 12 miles of new roads, first of the jobs that kept caterpillars and scrapers going for nearly a year. The next job was a power house, where two diesels supply electricity that drives the pump motors and lights the company village. There are six miles of power line, six miles of big pipe lines and the biggest job of all—five miles of heavy clay dikes that impound the brine in artificial lakes. The earth is so impervious that no floor or siding is needed, except in finishing vats where cleanliness is essential.

The company village includes a labora-

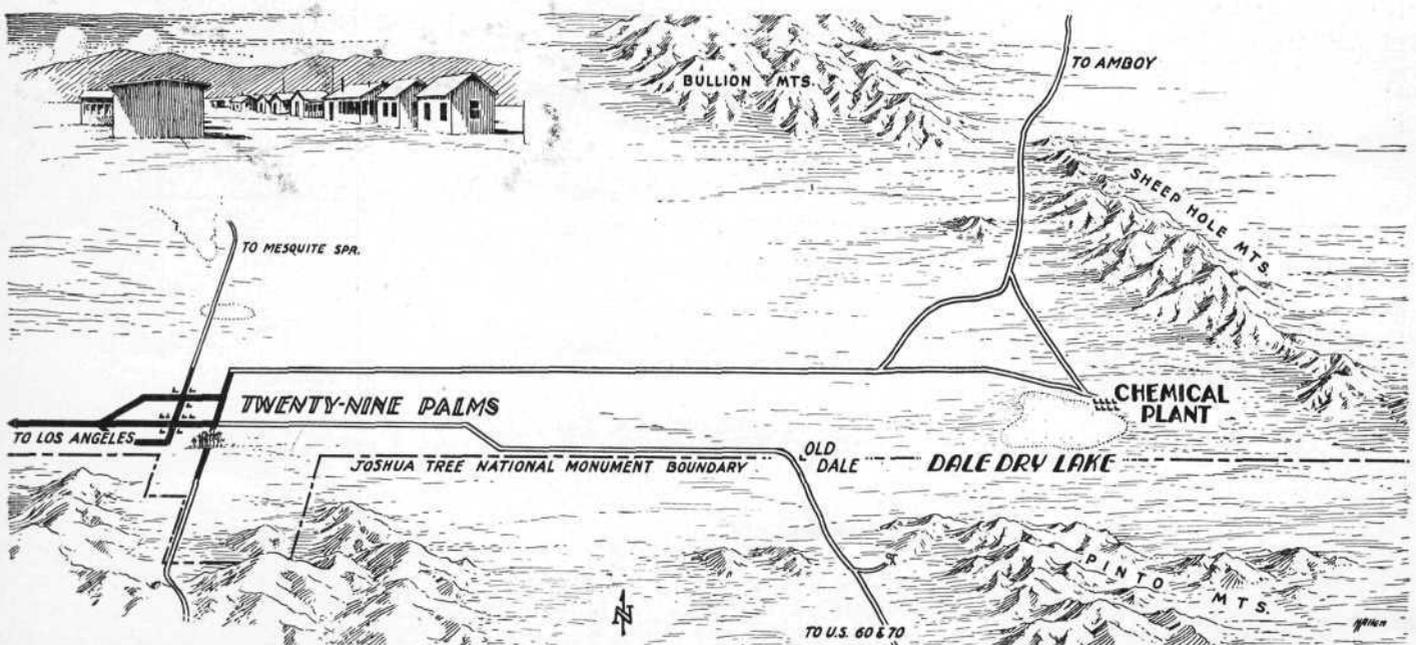
tory, offices, tool sheds, a mess room, where we enjoyed a bountiful lunch, but little evidence of sleeping quarters. "You must have had at least a hundred men on construction work," I suggested. "Where did they live?"

"It's this way," Richardson explained, "We only need a few men now that the plant is running, so we never built big bunk houses. Most of the men go back and forth to Twentynine Palms and a few live in trailers."

As we enjoyed the afternoon sun, Bush and Richardson discussed further prospects, the possible addition of refining plants, the need of chemicals for national

defense, the economics of international industry. For there is another kind of vision that had a place in Desert Chemical company, that of its financial backers. They made an exhaustive study of markets, an analysis of supply and demand, a careful investigation into costs, before funds could be made available.

As we drove back through the sunset, we reflected on three essentials by which this new desert industry was built—the pioneering and determination of Irvin Bush, the technical knowledge and imagination of Lee Richardson and the business acumen that brought them all to commercial realization.



Mines and Mining . .

The Desert TRADING POST

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—actually about 1 1/3 cents per thousand readers.

Goldfield, Nevada . . .

Work on a projected tunnel into the United States Vanadium corporation's tungsten property, 12 miles south of Winnemucca in the Rose Creek district is scheduled to start shortly. Ore will be milled at Getchell plant, now under construction. Survey for a road to connect the mine with Victory highway has also started. Another survey will be made in preparation to drive another tunnel to cut the scheelite tungsten orebodies some 200 feet lower at the canyon level.

Washington, D. C. . . .

A bill providing a moratorium on assessment work on mining locations in the public domain now pending before congress has a good chance to be adopted, it is reported here. However, Secretary Ickes of the interior department is opposed. Mining committees of both houses have recommended passage despite the secretary's stand.

Winnemucca, Nevada . . .

One of Nevada's largest quicksilver properties—the McAdoo—has resumed operations after a two-month shutdown, it has been announced. Work reopened on a 24-hour, day schedule with a 16-man crew being employed. Recently Bill Johnson, assistant cook at the mine, made a promising strike while prospecting about 1500 feet from main workings. After a 40 to 50-foot shaft was sunk it was disclosed that ore ran approximately 40 pounds quicksilver to ton.

Salt Lake City, Utah . . .

United States treasury officials have released 40,000 tons of silver as a loan to industry faced with a scarcity of baser metals. Silver will be used in electrolytic plants to replace copper. The metal is known to be a better conductor of electricity. Meanwhile war production officials seek stocks of copper frozen by sharp curtailment in manufactures of nonessentials. Estimates point to around 200,000 tons being available.

Goldfield, Nevada . . .

The Ford Motor company and the Union Carbide and Carbon corporation are expected to produce approximately 70,000,000 pounds of magnesium per year as the result of a sensational new processing, it is reported. Sydney B. Self of the Wall Street Journal declares the process to be safe and economical. Both companies have had research men working on the problem. Magnesium is in great demand as a result of the arms program.

Ely, Nevada . . .

To provide tin for use at the copper leaching plant of the Nevada Consolidate Copper corporation at Ruth, a state-wide drive to salvage all of the state's tin is underway. Chairman Leonard Larson of White Pine county salvage committee estimates that 200,000 pounds of tin cans are available throughout the state. Price for clean cans, stripped of paper and mashed flat is \$15.00 per ton. Steel and iron scrap are being gathered in considerable quantities in McGill, the official also reported.

Lovelock, Nevada . . .

Government engineers have sampled Rabbit Hole placers for tin and have found it too low in grade. This announcement was made by Congressman J. G. Scrugham. Gravels show only 20 percent enough tin to make it profitable commercially. Further sampling will be done the congressman said. There is some prospect that the mother lode from which the placer came may be found.

Salt Lake City, Utah . . .

Miners will be assisted by a WPB ruling providing mining enterprises with a top war priority rating, it is declared here. But mines whose output is more than 30 percent of gold or silver in terms of dollar values are not aided by this action. Such properties have been excluded from aid given under the general mining priority. Another order provides a top war priority rating permitting manufacturers of mining machinery to obtain about \$50,000,000 worth of raw, semifabricated and fabricated materials before June 30.

Death Valley, California . . .

The old Honolulu-Big Horn mine in the Panamint range seven miles southeast of Ballarat is under production again for the first time since the world war. But unlike the period of the last war, ore will be trucked to Trona over improved roads and shipped to a Salt Lake City smelter. Before, lead and zinc ore was hauled to railroads on backs of pack mules with each carrying 300 pounds.

Fallon, Nevada . . .

Basic Magnesium, Inc., has started work on two quarries of magnesite on the southeast slope of Gabbs valley. Overburden is being stripped by bulldozers. The company plans to start mining some 900,000,000 tons of ore already blocked out. Actual mining was expected to start in April when first of four units of calcining plants was scheduled for completion. Roads between quarries and plant were being constructed early in April.

Fallon, Nevada . . .

Treating an average of 200 tons of ore a day, the Nivloc mine owned by Desert Silver, Inc., for the last four years has been the largest silver producer in the state. This mine, according to Manager Fred E. Gray, is an excellent example of a property that became a profitable producer after it had been ignored or turned down by a number of mining engineers.

ANSWERS TO BONANZA PICTORIAL QUIZ

Questions on page 36.

- 1—Sandstone.
- 2—Virginia City.
- 3—Pyramid Lake.
- 4—Silver ore.
- 5—Glass . . . molten gold is poured into molds lined with glass, the glass melts as the gold cools . . . into brick forms.
- 6—An Indian chief.
- 7—One way drive . . . a scenic 2 mile ride with many turnoffs provided.
- 8—Virginia canyon.
- 9—Geiger Observation Point.
- 10—Salmon Trout, named by Fremont in 1844. Received its present name in October, 1844.

LIVESTOCK

KARAKULS producers of Persian Lamb fur are easy to raise and adapted to the desert which is their native home. For further information write Addis Kelley, 4637 E. 52 Place, Maywood, California.

KARAKUL SHEEP—Blue Ribbon Quality — Recognized as War Industry—Authentic information furnished. James Yoakum, 1128 N. Hill Avenue, Pasadena, California.

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PHOTO FINISHING

6 OR 8 EXPOSURE ROLL enlarged to mammoth Rancho size, 25c; or 16 small prints from roll, 25c. RANCHO PHOTO, Dept. EM, Ontario, California.

MAPS

BLACKBURN MAPS of Southern California desert region. San Bernardino county 28x42 inches \$1.00; San Diego county 24x28 inches 50c; Riverside county 50c; Imperial county 19x24 inches 50c; Yuma and Gila river valley 17x27 inches 50c. Postpaid. Add 3% sales tax in Calif. DESERT CRAFTS SHOP, 636 State St., El Centro, California.

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HANDBOOK FOR THE AMATEUR LAPIDARY, Howard. One of the best guides for the beginner. Good illustration. 140 pp. \$2.00

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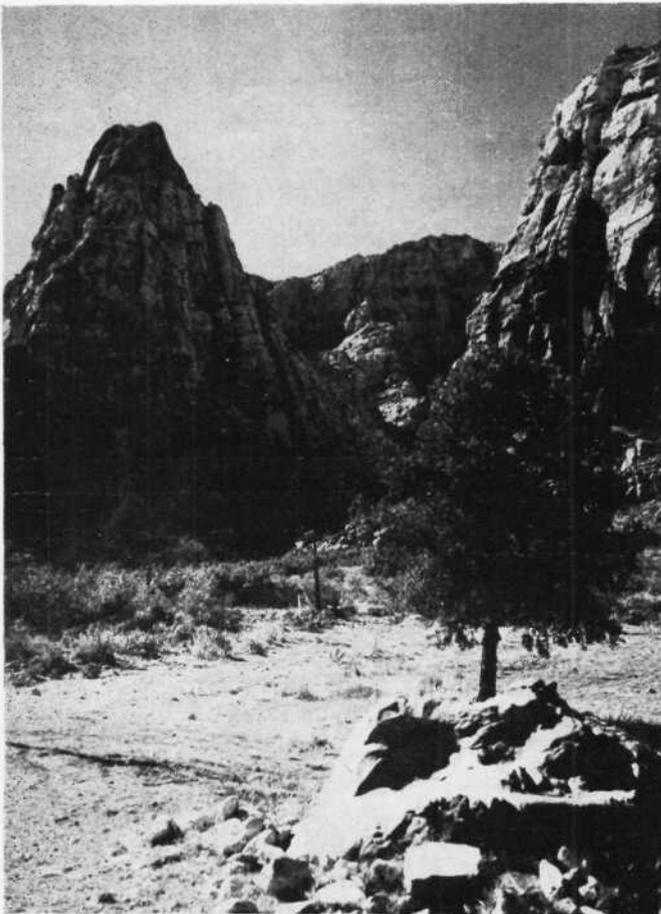
Bonanza Road Pictorial Quiz..

There are few places in the West, or anywhere else, where the story of man's progress and courage can be told against a background of more natural scenic beauty than that of the towns along the Bonanza Road in western Nevada.

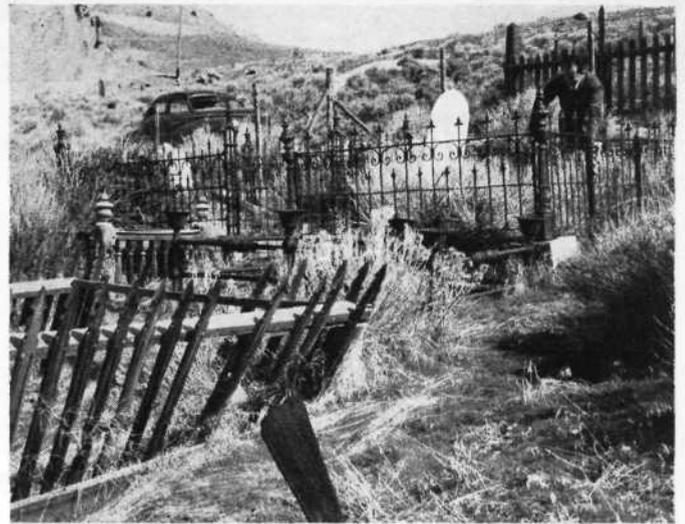
Elsewhere in this issue will be found an interesting and informative twelve page pictorial of this historic and colorful area. Here was made some of the West's most stirring history, an area which today attracts many thousands of visitors to its romantic shrines, its great natural beauty.

In keeping with the national urge for picture puzzles and picture quizzes, the Desert Magazine has selected some Bonanza Road "toughies." Try them! Give yourself 10 points for each correct answer. If you score 40 points you're fair; 60 points rates you as an observant traveler—or a good guesser! A score of 80 points makes you an authority on Nevada history; 100 points . . . well! You're sure you didn't peek?

Photographs on this page reproduced through the courtesy of Robt. B. Griffith, Las Vegas, Union Pacific Railroad and Nevada Department of Highways.



1—Pyramid Rock in Red Rock canyon near Las Vegas, Nevada, is a formation of Sandstone , Limestone , Volcanic rock .



2—Few places tell the story of a town better than this hillside graveyard at Virginia City , Goldfield , Tonopah .



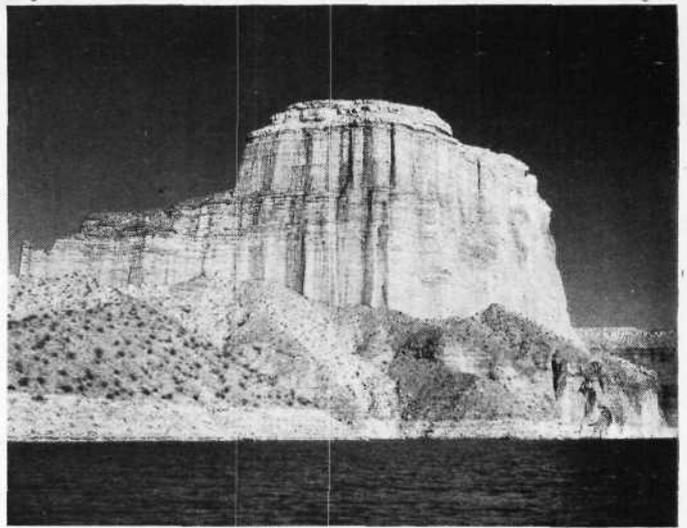
3—Hundreds of pelicans can be seen on Lake Mead , Walker Lake , Pyramid Lake .



4—These reminders of a historic past rest in Tonopah. They were used to haul Borax , Silver Ore , Brucite .



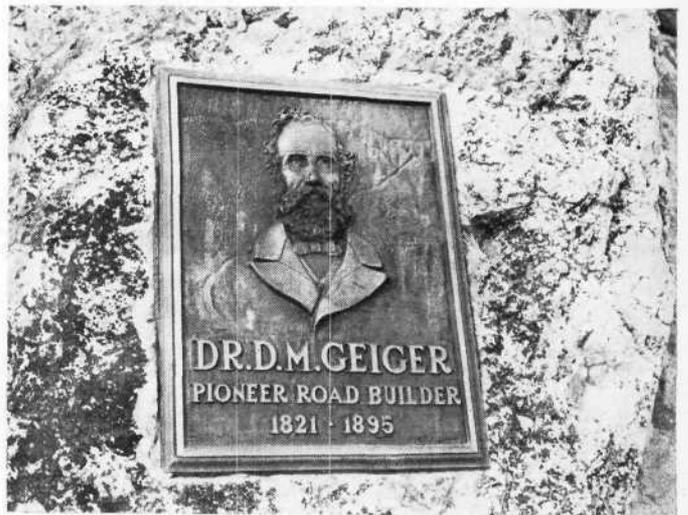
5—These industrious men are hammering a gold brick to free it from particles of Silver , Sand , Glass .



8—Most of you can identify this picture as *The Temple*, in Lake Mead, but can you identify the canyon where it is to be found: In Boulder canyon , Virgin canyon , Iceberg canyon .



6—Takealooka Crater, near the 40 mile wash, on the Bonanza Road near Beatty, takes its name from an Indian chief . Nearby gold mine . Mining camp legend .



9—This monument to a famous pioneer who built the road that now leads to Virginia City can be seen at Geiger Summit , Geiger Observation Point , Geiger House .



7—Wilson canyon, near Yerington, is known for its spectacular coloring, its thick willows and its Fishing . One way drive . Resort center .

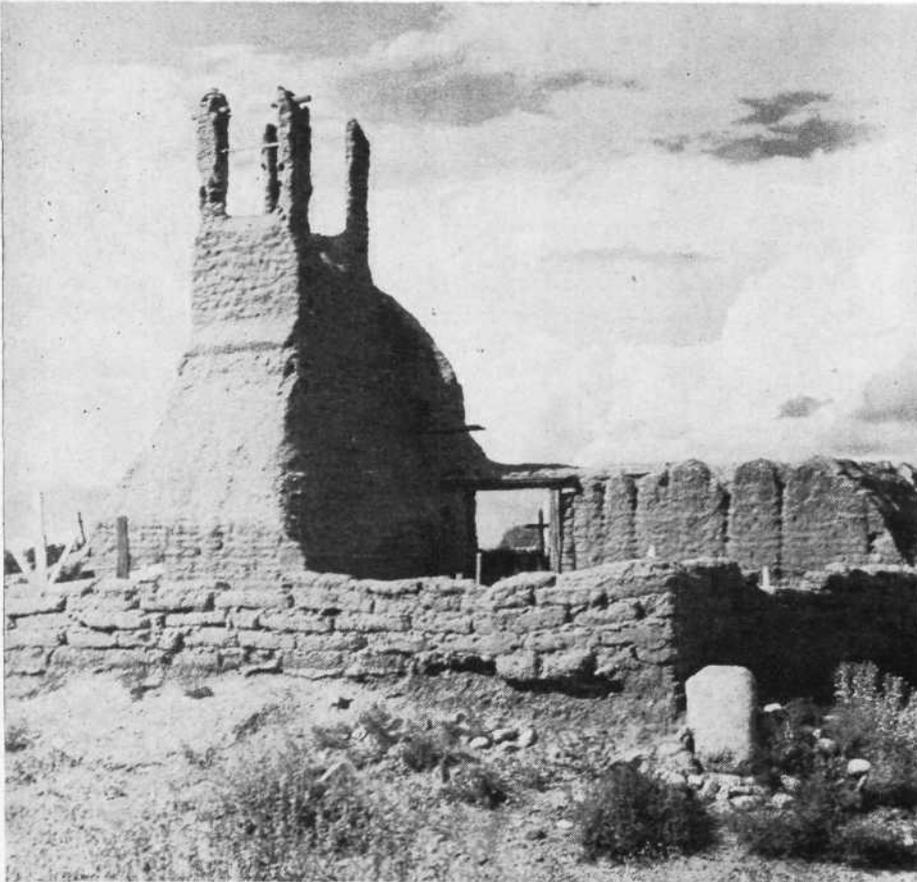


10—The Truckee river flowing through the heart of downtown Reno was named after a Paiute who guided the Townsend-Stevens-Murphy party across the Forty-Mile desert. It was originally called Salmon Trout , Meadowbrook , Reno river .

(Answers are on page 35.)

TAOS MISSION

Winner of Desert Magazine's April Landmark contest is Ralph J. Phillips of San Diego, California. He identified the accompanying picture as the old Spanish mission at Taos, New Mexico. Mr. Phillips was born in Taos. "Many times I have climbed around these old ruins," he writes, "digging lead bullets from the crumbling adobe walls and hoping to find a cannon ball."



By RALPH J. PHILLIPS

NESTLED at the foot of Taos mountain in northern New Mexico lies the Pueblo of Taos, home of the "Red Willow People," and just outside the pueblo stands that crumbling ruin of the Mission San Geronimo erected about 1617 by Fra. Pedro de Miranda and Fra. Francisco de Zamora under orders of Don Juan de Oñate. The ruin is today a gaunt reminder to the peaceful pueblos of a time when their fathers were persuaded by one of their own members and a Mexican renegade, Pablo Montoya, to revolt against the Americans who under General Stephen Kearney had wrested control of the territory from Mexico only a few months before.

Montoya and Tomasito, the pueblo Indian, were leaders of a plan to unite all Mexicans and Indians in northern New Mexico in a final effort to overthrow the new government and drive the Americans from the territory now under the flag of the United States.

Governor Charles Bent, the first American governor of the territory of New Mexico, having heard at Santa Fe the rumors of impending trouble came to Don Fernando de Taos, the village two and a half miles from Taos Pueblo, on January 18, 1847, to use his influence in an effort to calm the troubled waters. His home, his family and his place of business were in Taos, and he was highly respected by most of the inhabitants.

His arrival was, however, too late and in the cold grey dawn of January 19, a mob of Mexicans and Indians, doubtless bolstered by liberal quantities of "Taos Lightning," swept into the courtyard of his home, battered down the door, scalped and brutally murdered him. Witness to this tragedy were his wife and children and Mrs. Kit Carson. A messenger sent post-haste to Santa Fe summoned the U.S. army but it was not until February 3, that Colonel Sterling Price in company with Captain Ceran St. Vrain and a detachment

of about 350 dragoons arrived in Taos after several skirmishes with bands of revolutionists on the way.

The Indians and Mexicans having been warned of the approaching troops barricaded themselves in the old mission.

On February 4, the Americans tried unsuccessfully to dislodge them, but their rifles and light brass howitzers could not penetrate the thick adobe walls. It was not until the next day that a group of 35 volunteers rushed the church and with picks and axes breached the wall. Through this opening shells were fired. Some of the defenders escaped to the nearby hills and others surrendered. One hundred seventy-five to 200 Indians and Mexicans were killed in the battle and 35 American soldiers were laid to rest at the foot of Taos mountain.

Sixteen of the rebels, including Pablo Montoya, were tried at a drum-head court-martial and hanged but Tomasito was murdered by a vengeful dragoon as he awaited trial.

From that day hence the Valley of Taos has basked under a peaceful sun and the friendly pueblans live in harmony with their white neighbors while many of their sons fought for the stars and stripes with General Douglas MacArthur in the steaming jungles and fox holes of Bataan.

Taos may be reached by paved highway U. S. 64 seventy-two miles north of Santa Fe or by travelling west from Raton, New Mexico, on this same highway.

If travelling by rail the visitor should leave the train at Albuquerque or Lamy, New Mexico, where bus lines connect with Santa Fe and Taos.

Stage connections may also be made at Raton, New Mexico on the Atchison, Topeka & Santa Fe or at Fort Farland on the Denver & Rio Grande Western.

In earlier years much of the traffic to Taos came by way of the Denver & Rio Grande narrow gauge line—the famous "Chili Line" which ran from Santa Fe to Alamosa, Colorado. Mail, express, freight and passengers were discharged to Embudo or Taos Junction, and carried by stage to Taos.

Competition from trucks and buses finally caused the line to be abandoned in 1941 much to the distress of all who loved it but seldom used it since the advent of the automobile.

Even though the rails have since been torn up to be used as fodder for the God of War it is said that on occasional moonlit nights a tiny phantom locomotive and three little bright red cars still traverse the rocky gorge of the Rio Grande and after climbing laboriously to the sage brush mesa above are lost in its moonlit wastes.

Gems and Minerals

This department of the Desert Magazine is reserved as a clearing house for gem and mineral collectors and their societies. Members of the "rock-hound" fraternity are invited to send in news of their field trips, exhibits, rare finds, or other information which will be of interest to collectors.

—ARTHUR L. EATON, Editor—

UTAH COLLECTORS PLAN CONVENTION IN AUGUST

Mineralogical society of Utah announces the coming convention of Rocky Mountain federation of mineral societies in Salt Lake City, Utah, August 29-30, 1942. Vacationists are urged to plan their itineraries to include the convention and field trips to interesting localities in the vicinity of Salt Lake.

Few places in the world, writes Mrs. C. W. Lockerbie, secretary of the club, present a greater array of outstanding geological features, so readily accessible, as do the Wasatch and Oquirrh mountains which mark the east and west boundaries of Salt Lake valley.

All eras from Archeozoic to the present are well represented. Great faults and other diastrophisms of major proportions are evident everywhere. Igneous rocks of many types with corresponding lava flows, pumice beds and volcanic cores of unusual types are part of the great scene, about which lashed the mighty Lake Bonneville, of which Great Salt Lake is the remnant.

Within easy reach of town are two of the world's great mining camps where a great variety of mineral specimens are available, especially for the mineralogical student.

The Utah section of the federation is formulating plans to accommodate as many varied

STRATEGIC MINERALS

MICA

Mica, a mineral now much in demand by the government for defense purposes, to the average person means muscovite, although muscovite is only one of four well known micas. This mineral is almost universally known for its brilliant pearly luster and a basal cleavage so perfect that it is easily separated into thin transparent sheets, either with a knife or with the fingernail. Only large sheets have real value. Muscovite is soft enough to be broken easily with the fingernail. As it does not conduct heat nor electricity to any great extent, it has many uses for insulation in electrical equipment, heat apparatus, etc.

Biotite, phlogopite and lepidolite micas have few commercial uses, and thus are almost unknown to the general public. Biotite is similar to muscovite in most of its qualities, but differs distinctly in one—it is generally glossy black, due mostly to the presence in its formula of iron, magnesium and potassium. Phlogopite mica contains very little iron, and, instead of being black, has about the brassy color of pyrite. It occurs in brassy colored sheets or in small, hexagonal crystals. Lepidolite, or lithia mica, has little of the general appearance of the other micas. It never occurs in sheets, but in tiny scales. The large masses appear more like sandstone, lavender or yellow in color, but examination shows the scales to be true mica.

interests as possible, by presenting a program of optional trips.

Correspondence is solicited from persons planning to attend the convention, especially if they desire advance information concerning field trips. Address Mrs. C. W. Lockerbie, 223 West 9th South street, Salt Lake City, Utah.

SOURCE OF GARNETS IS STILL A MYSTERY

Golden yellow to brown crystals of essonite garnet have been found from time to time in Imperial county, California, near the foot of Mountain Springs grade west of Coyote Wells. These are sometimes encountered as loose crystals, large enough for cutting purposes, but more often they are smaller crystals grouped irregularly on garnet rock. One specimen shows 18 to 20 small but fine garnets of about

one carat weight each. Several attempts have been made by eager collectors to find the source of these gems, but with no results. Only occasional accidental finds have served to keep up the interest.

WHAT GIVES ROSE QUARTZ ITS COLOR

There has been much speculation recently in the minds of both amateur and professional mineralogists as to the exact cause of the pink to reddish color in rose quartz. The chief possibilities seem to be titanium or manganese salts. These same salts produce a pink to red color in other minerals, such as rutile, rhodinite and rhodochrosite, the oxide of titanium, silicate and carbonate of manganese respectively. By no means all of the problems of mineralogy have been finally settled, to the satisfaction of everyone. Also, why does the pinkish color sometimes fade completely from some specimens of rose quartz and not from others? Why do some pieces seem to change slowly from shell pink to pale lavender?



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Consists Largely of STRATEGIC MINERALS

Chromite, Asbestos, Cinnabar, Graphite, Beryl, Alunite (Aluminum Ore), Psilomelane (Manganese), Magnesite (Magnesium), Tiger Eye, Native Sulphur, Selenite from Caves of Swords in Mexico, Astrophyllite, Riebeckite, Gemmy Tourmaline (1/2-in.), and Satin Spar.

Labeled and individually wrapped. Fifteen choice large specimens for only \$1 plus postage on 3 lbs. Add sales tax in Calif.

TENTH ANNIVERSARY CATALOG . . .

Send for YOUR FREE COPY of our profusely illustrated 44-page TENTH ANNIVERSARY CATALOG. Lists all types of gem cutting equipment and supplies. Also describes our large selection of "PREFORM CABOCHON BLANKS," slabs of semi-precious gem material, cut gems and

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AMONG THE ROCK HUNTERS

Imperial Valley gem and mineral society celebrated its third birthday May second with a delightful party at the ranch home of Sam Robinson, member. The society now holds its regular meetings either in public school buildings or at homes of members, as the usual meeting place, county court house, is closed to the public after 6:00 p. m. for the duration.

E. P. Matteson, Phoenix, Arizona, writes that he has found in Arizona three minerals never before reported in the United States: blue leadhillite, hydrocerussite and paralaunite. He also reports a green crystal from Ajo which may turn out to be a new mineral.

Among the many interesting specimens from Searles lake region are strangely shaped and colored salt crystals. In a recent assortment were several shell pink hopper or basket crystals and a number of irregularly shaped, green octahedrons. Masses of salt are often colored green, red or brown, or all three colors mixed together. The colors are due to the presence in the lake water of tiny algae, which first color the water and then the salt itself as it crystallizes.

A recent traffic bulletin declares that while magnesium is an essential metal used as an alloy in the manufacture of defense material, it has been found that, when magnesium dust or splinters enter cuts or wounds, gangrene results from hydrogen forming in the tissues.

Members of the Sequoia mineral society of California observed April 19 as "Selma Day." Fifty-three of the Sequoians took part in the field day and visited homes and garages and class-rooms to inspect the rocks and lapidary work of Selma members of the organization. According to Hazel Goff, editor of the Sequoia bulletin "these visiting days are O. K."

According to the latest bulletin from the California division of mines that state produced 47,935 tons of talc and soapstone in 1941, with a value of \$525,396. This is the highest annual production on record in the state. The talc came from six properties in Inyo county and four in San Bernardino county, and the soapstone from one property in El Dorado county. California talc has now replaced to some ex-

tent the imported grades used in the toilet industry.

A new regulation of the federal government makes the saving of tin something more than a mere patriotic duty. In the past, tubes for shaving cream, toothpaste and even glue were made of almost pure tin. The wastage of these tubes reached 100 percent, as no one saved them consistently. The resultant wastage of precious tin, therefore, must have been hundreds, possibly thousands of tons. Now, however, the situation has changed radically, due to shortage of supply of this useful metal. Any person who wishes to purchase a tube of any of these commodities, must furnish an empty tube in exchange. The empty tube need not be from the same article or brand.

A slight shortage of chlorine has slowed down production of chromium, according to reports of the United States bureau of mines. The bureau reports that new processes have been found for the extraction of 99 percent pure chromium from low grade American ore, but that maximum production still may be far in the future.

William B. Pitts, honorary curator of gem minerals, California academy of sciences museum, San Francisco, has closed his home in Sunnyside, California, and moved his lapidary equipment and material to the academy of sciences museum in Golden Gate park, San Francisco. He has presented his main exhibit of gem minerals to the museum.

Dr. Howard Hill of Los Angeles county museum spoke on concretions at the April 21 dinner meeting of Los Angeles mineralogical society, in Boos cafeteria. April field trip was a "swap fest" and picnic in the park at entrance to Coldwater canyon. Cordierite and chiastolite were collected.

California federation of mineralogical societies has postponed its convention until conditions in California permit its revival. "It is agreed," writes President Woodhouse, "that the mineralogical society of Southern California is simply postponing the date for some time in the future, and does not, by this action, relinquish any rights voted by the federation."

Three speakers entertained the mineralogical society of Arizona in April: Charles A. Diehl, What's in your ore; William E. Colburn, mineral collections; C. E. Young, Ores and minerals from the standpoint of small mine operators.

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Riverton geological society observed its fourth anniversary April 13. The following officers were elected: Norbert A. Ribble, president; A. N. Talcott, vice-president; C. C. Hopkins, secretary-treasurer; John Pitts, Charles Ridgeway, L. E. Oyler, directors. Morris Kline told about meetings of Wyoming mining congress, sponsored by the state university. Kline said that Wyoming mining and minerals will receive much attention in the future. Plans are to employ a state geologist who would serve the people of Wyoming in the identification and assaying of minerals.

Frank and Grace Morse, rambling rocknuts of Bayfield, Colorado, have started collecting pictures of their rockhound friends and purchasers so that they may know what their mail order customers look like.

Fred S. Young of the Mineralogist staff, Portland, Oregon, has a new book out on the art of gem cutting.

W. Scott Lewis discusses beryllium in his April bulletin. He states that beryllium-copper alloy does not suffer "fatigue," but remains constantly efficient under any strain. It does not corrode when exposed to chemicals or sea water. Tools made of beryllium copper do not strike sparks and can be used with safety in munitions plants. It is also essential in plane construction.

Kern county mineral society elected the following officers at the annual banquet in March: E. P. Van Leuven, president; C. W. Corwin, vice-president; Mrs. T. V. Little, secretary-treasurer; F. M. Hoopes, field trip scout; Oliver Paris, curator and editor of Pseudomorph; Dr. M. J. Groesbeck, federation director.

Mojave mineralogical society has completed its incorporation and will be formally admitted to the federation as soon as action can be taken.

Golden Empire mineral society, Chico, California, entertained a group of soldiers with a display of gems and minerals and a fluorescent demonstration.

Mrs. Grace G. Dearborn, secretary of Boston mineral society reports a membership of 235.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

• Uncle Sam shure is helpin' rockhouns to conserve rubber. One by one, jasper, petrified wood 'n geode districts is bein' converted into closed areas fer military operashuns. Tho somehow, instead uv makin' the rockhoun mad, it makes him feel good deep down inside. Like buyin' a bond 'r standing watch at a lonely listenin' post. Therz nothin' a rockhoun in-joys more than gatherin' specimens, so by gladly surrenderin' his beloved field trips he sort uv feels that he's doin' sumthing definite to help win our victory.

But rockhouns duz suffer from itchin' heels thez spring days.

A. L. Flagg, president of mineralogical society of Arizona, is busy surveying some of the strategic mineral areas for war production.

Rockhound Record (Phoenix, Arizona) reports that the first extinct volcano to be recognized as such in North America is Santa Clara, described by Father Kino in 1701.

Dr. Norwood Johnson, metallurgist, told of his experiences and excursions around the globe at April 10 meeting of San Diego mineralogical society.

T. V. Little of Shafter was guest speaker at April 15 meeting of Searles Lake gem and mineral society. He discussed mineral specimens and where to find them. The group enjoyed a joint field trip to Black Mountain April 12 with Inyokern members. Study meetings, held first Wednesdays, show increasing enthusiasm. Realgar was discussed in April. This society is actively interested in providing entertainment for the boys at Victorville camp.

Imperial county gem and mineral society exchanged a box of grabs with Searles Lake gem and mineral society.

Dr. Hoyt R. Gale addressed Pacific mineral society on new interpretations of evolution at the April 10 dinner meeting. E. B. Hamilton, member, recounted his experiences during the Pearl Harbor raid.

All meetings of San Diego mineralogical society, (second Fridays, natural history museum, Balboa park) are open to the public without charge. Dr. Norwood Johnson, metallurgist, was the April speaker.

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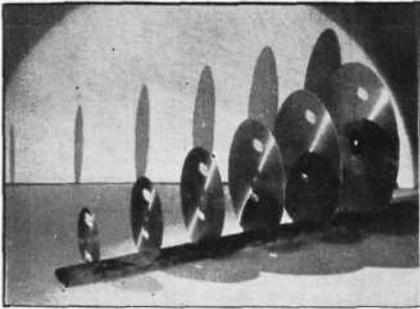
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FIELD DAY IN A ROCK COLLECTOR'S PARADISE

By CLARK HARRISON

Nevada is a veritable storehouse of rare, precious, industrial, and non-metallic minerals, as well as semi-precious gem stones, all awaiting the scientific prospector. For Nevada localities have not been developed—only the surface has been scratched. With the good mineral localities in California being rapidly depleted or becoming unavailable, collectors on the coast will soon have to sojourn to Nevada to get good material without too much difficulty. It is one of the collector's last frontiers.

Nevada is America's largest producer and exporter of turquoise, and also leads in production of cobalt. Emeralds are found at Ryepatch. This state also has variscite, metacalciovardite, manganese calcite, fine realgar, orpiment, obsidians, incomparable jaspers, chalcedony, marbles, petrified woods and aragonites. Located there are important deposits of fluorite, manganese, coal, bariums, sillimanite, cyanite, mica, aluminum clays and minerals, hematite, sodas, antimony, sulphur, diatomaceous earth, molybdates, tungstates, magnesites, arsenates, bismuth, borates, potash alums, bentonites, lead, zinc, filtering clays, and dozens of others.

Last fall the Pacific mineral society, one of the leading collectors' organizations in California, sponsored a three-day field trip to Good Springs, Nevada. This is an old mining district 30 miles south of Las Vegas. Twenty-five members took the trip.

Goodsprings is a district little known to collectors, yet it is a mineralogical paradise. Headquarters of the group during its stay was the Goodsprings hotel. This fine old hotel was built many years ago, and today is conducted by a charming couple, Mr. and Mrs. Russell, who are ideal hosts. They specialize in serving fine food at very low prices. Goodsprings is a village of 100 population. An altitude of around 4,000 feet gives it an ideal climate.

I have found Nevada people unusually charming, friendly, courteous, and cooperative; and here these qualities are exceptionally noticeable. Everyone welcomed the visitors and tried to make their stay a pleasant, comfortable and instructive one. Mining people were very considerate in allowing egress upon properties, and helping the group to get fine specimens, as well as to arrange and guide side trips, and lecture upon the geology and mineralogy of the district. J. A. Frederickson, owner of several properties here, was especially helpful. From his Blue Jay mine fine specimens of heterogenite (a cobalt oxide) were secured. As I write this, I have before me a prized specimen of this

material: the dull, black heterogenite surrounded by pale malachite and pale pink dolomite.

Many important mines were visited, and from each, choice specimens were secured: the Bass mine produces platinum which occurs as black powder in seams; the Prairie Flower mine; the Hoosier mine where exceptionally nice crystals of wulfenite may be found. The Yellow Pine mine is the largest around here. It is owned by Sam Yount of Los Angeles, but is leased to Mr. German. It yielded specimens of anglesite (both massive and crystals), plumbojarosite (var. vegasite), smithsonite, cerussite crystals, mimetite, hemimorphite, hydrozincite and cuprodesclousite. Other kinds of minerals found in this district by the group were jarosite (hydrous iron sulphate), diopside, azurite, massive malachite, green-black and white smithsonite, turgite, ferruginous smithsonite, smithsonite with calamine (zinc silicate) crystals, red ochre, limonite and hematite crystals, pale pink dolomite, galena, and mimetite (lead chloroarsenate), and feldspar crystals in various colors.

For those who have more time to stay and hunt with more detail, the following are other minerals which have been found here: opal, natrojarosite, aurichalcite, andradite garnet (Lavina mine), proustite, gold, pyrite, vanadinite, brochantite, quartz, chalcocopyrite, sphalerite, hydrocarbons, stibnite, calcite, iodyrite (AgI), chalcedony, cinnabar, aragonite, beaverite, alunite, halite (common salt), barite, chert, tennantite, cerargyrite, wad (manganese), chalcocite, stibiconite, cuprite, tenarite, chrysocolla, olivenite, libethenite, bornite, pyromorphite, anabergite, linarite, gypsum, siderite and magnetite. A detailed study of this district may be found in the U. S. geological survey professional paper No. 162: "Geology and Ore Deposits of the Goodsprings Quadrangle" by Huit.

Here is found the principal source of zinc in Nevada, and lead and zinc are found associated with most of the deposits, occurring in various forms. Here you can find lead occurring as galena (a sulphide); as cerussite (a carbonate); as mimetite (an arsenate); as vanadinite (a vanadate); as anglesite (a sulphate); and pyromorphite (a phosphate), and as wulfenite (a molybdate). The bodies of zinc ore mined there are almost entirely alteration products—as smithsonite, hydrozincite and hemimorphite. Also in this district are breccia zones of dolomitized limestone, where most ore deposits are found.

At Goodsprings, the student may study geology and mineralogy "in the raw" to his heart's content; and the people there are really swell. Here one may find rare and valuable specimens; and best of all, forget he is in a world of hurry, bustle and worry. And that is why the Pacific mineral society will tell you that, though this district is not well known, it is one of the best collecting places they have yet found.

Song of the Field Trip Chairman

No tires to drive
To places far,
No holidays,
No gas, no car.
But rocks will be
There bye'n bye;
Sun, moon and stars
Stay in the sky;
And when we've licked
The dad-gummed Jap,
We'll start in where
We left off at!

—Louise Eator.

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HERE AND THERE... on the Desert

ARIZONA

Tombstone Rose Bush Blooms . . .

TOMBSTONE—When a Scotch lass set out the slip of Lady Banksia rose in Tombstone she started a plant growth that is now attracting thousands of people. The rose bush at peak of bloom about middle of April has now covered an arbor 60 by 50 feet. The original slip was sent from Scotland 60 years ago.

Bullshead Town Laid Out . . .

KINGMAN—Mohave county supervisors have received a map of Bullshead townsite, located about three miles south of proposed Davis dam site. Townsite was surveyed sometime ago and owners W. J. Lee, Irene M. Lee, W. H. Long and Ida M. Long have made affidavit of ownership and dedication of streets. Probable camp site for reclamation service is situated a short distance north of townsite.

Navajo Cooperative Opens . . .

FLAGSTAFF—Navajo Indians participating in Cooperative Trading post at Many Farms opened \$10,000 building April 11. Building includes trading post, tanner and quarters for managers. Navajo Cooperative association of Many Farms organized last August when 50 Indians bought \$2500 of shares and borrowed \$1500 from other Navajo. Today there are nearly 100 members with total share investment of \$5,000 and loans of \$1,700. Many Farms is expected to become economic center of new agricultural development in Chinle valley.

New Town Grown . . .

SONOYTA—With completion of paving work on Ajo-Sonoyta road scheduled for this year and improvement of Sonoyta-Rocky-Point road also to be done this year, it is expected that new town of Sonoyta will be an important port of entry into United States. Two customs buildings have been erected in addition to dwelling accommodations for government officials.

Alien Centers Sought . . .

PHOENIX—Federal officials have announced selection of 7,000 acres of Gila Indian reservation land in Arizona to be used as resettlement area established to care for Japanese evacuated from Pacific coastal regions. Another site being considered will provide space for 10,000 Japanese who will reside on west end of Pima reservation near Casa Grande.

War on Gophers . . .

YUMA—Children of five rural schools trapped 31,597 gophers during annual gopher control campaign, it was announced by officials of Yuma County Water Users association. Herman Phillips of Somerton school won first, his catch being 2,419 gophers.

Indications that Indian life contemporary with Folsom culture of 20,000 years ago may have existed in Ventana cave have been disclosed by Dr. Emil W. Haury, head of anthropology department, University of Arizona.

Travel to Boulder dam is increasing after a sudden drop following Japanese attack on Pearl Harbor, reports Arizona highway department officials.

Annual summer field courses in anthropology at University of Arizona have been cancelled because of death of strong muscled young men and transportation difficulties.

CALIFORNIA

Bridge to Eliminate Curve . . .

NEEDLES—Proposed new Santa Fe bridge across Colorado river at Topock will eliminate a sharp dangerous curve on California side. Eastern approach of bridge will be about 600 feet north of eastern end of present bridge. Project is estimated to cost approximately \$3,500,000. It is expected that contracts will be let in near future.

Road to Be Built . . .

BARSTOW—San Bernardino county will begin immediate construction of 10-mile road out of south end of Death Valley over which salt for war industries will be transported. Federal government has agreed to pay estimated \$65,000 cost. Salt will be shipped to Basic Magnesium plant at Las Vegas.

Large Canvas Completed . . .

PALM SPRINGS—Paul Grimm, noted artist, has completed what is believed to be largest painting ever done here—on order for C. R. Raft, Chicago business man. Canvas measures approximately 5 feet by 4 feet. It is now on display at Grimm's gallery. Pic-

ture depicts a favorite Grimm desert scene of mountain background with sandhills, verbenas, primroses and greasewood in foreground.

Border Restrictions Waived . . .

CALEXICO—All border crossing formalities were waived here April 9, 10 and 11 when Calexico (California) and Mexicali (Mexico) staged two mammoth parades in connection with the third annual trek of the Anza colonists this way in 1775-76. School children from the two border cities paraded



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10-56A

across the international line one day, and American and Mexican soldiers interspersed with gorgeous floats marched through the international gateway unhindered by customs and immigration officials two days later. Record crowds witnessed the Cavalcade.

Military Highway Talked . . .

EL CENTRO—Prospect of a military road between Mexicali and Santa Ana is growing brighter it was learned here now that military activity in Republic of Mexico centers

DESERT SOUVENIR

A four-color picture suitable for framing shows the Covered Wagon Train of '68 crossing the desert; now on display at Knott's Berry Place, Highway 39, two miles from Buena Park out of Los Angeles 22 miles. This remarkable oil painting 20x60 feet took over one year to complete. A copy will be mailed you together with the special souvenir edition of our Western Magazine jampacked with original drawings and pictures and complete description of Ghost Town and Knott's Berry Place. Both will be mailed with current issue of our 32-page magazine for 25 cents postpaid in the U. S. A. Thousands have already viewed this great work of art and acclaim it a wonderful contribution to the history of the West. Admission is without charge whether you stay for the chicken dinner and boysenberry pie or not. Send 25 cents for all three: picture, souvenir and current issue to Ghost Town News, Buena Park, California.

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in Baja California. Mexico is sending troops to peninsula now routing them through California. Proposed roads would provide an all-Mexican route.

Government Buys El Mirador . . .

PALM SPRINGS—Federal government officials have purchased El Mirador, famous hotel here, for use as an army hospital. Former owners vacated hotel by 6 o'clock April 14. Negotiations are also said to be underway for purchase of some 40 or 45 acres near hotel, to be used for housing and other facilities for large number of persons necessary to operate hotel as hospital for convalescent soldiers.

Entire eastern block of Owens valley has moved slightly southward as a result of earthquakes. Professor Beno Gutenberg, noted seismologist, said recently.

Norman Parks, well-known California weekly newspaper publisher, has purchased "The Date Palm" at Indio, founded by J. Win. Wilson in 1912.

An experiment in growing guayule rubber plants in Owens valley is under way. Total of 100,000 cuttings are being propagated by Japanese at Manzanar.

Entrymen on Palo Verde mesa and Chuckawalla valley district have been granted further extension of time to May 1, 1945, in which to perfect desert entries.

NEVADA

Bids Called on Davis Dam . . .

LAS VEGAS—Bureau of reclamation officials have called for bids on \$41,000,000 Davis dam on Colorado river. Bids were to be opened May 15 at Kingman, Arizona. This dam has been described by S. O. Harper, chief engineer of Denver office as final link in development of Lower Colorado river. Construction of earth and rock fill dam is expected to begin this summer.

Arrowhead Collection Gift . . .

FALLON—Mayor L. T. Kendrick will forward a mounted collection of Churchill county arrowheads forming a "V for Victory" arrangement to Churchill, England. Collection is being sent in response to letter Mayor Kendrick received addressed to "The First Citizen, Churchill, Nevada, U. S. A.," by A. D. Gait, assistant secretary of Churchill, England. Gift commemorates first warship, named Churchill, that was turned over to Great Britain in present emergency.

Nevada Fishing Season Opens . . .

CALIENTE—Nevada has officially opened its 1942 fishing season April 15 in several counties, while remaining areas opened May 1. Fishing rules have been announced by state officials.

Town Named Toiyabe . . .

LUNING—Townsite for employes of Basic Refractories, Inc., 32 miles northeast of here will be named Toiyabe. Application has been made for a postoffice to be known by that name. Toiyabe—Paiute for black hill or mountain—is name of one of principal mountain ranges and of a large forest reserve lying east of district.

"Rubber from Rabbit Brush" is title of March, 1942, bulletin published by University of Nevada agricultural experiment station.

Superintendent Guy D. Edwards of national park service left Boulder City May 1 to report for army duty as captain in corps area service command.

NEW MEXICO

Processing Plant Discussed . . .

PORTALES—Establishment of \$50,000 processing plant to manufacture rope and bagging from New Mexico bear grass is being seriously considered, according to reports received here. Recent survey showed that 2,000,000 acres of bear grass grow in Portales area and that similar large amounts are to be found near Deming and Roswell. Four tons of Yucca species of bear grass assertedly will yield one ton of dry fiber.

Prizes to Amateur Photographers

Each month the Desert Magazine offers cash awards of \$5.00 and \$3.00 for first and second place winners in an amateur photographic contest. The staff also reserves the right to buy any non-winning pictures.

Pictures submitted in the contest are limited to desert subjects, but there is no restriction as to the residence of the photographer. Subjects may include Indian pictures, plant and animal life of the desert, rock formations—in fact everything that belongs essentially to the desert country.

Following are the rules governing the photographic contest:

1—Pictures submitted in the June contest must be received at the Desert Magazine office by June 20.

2—Not more than four prints may be submitted by one person in one month.

3—Winners will be required to furnish either good glossy enlargements or the original negatives if requested.

4—Prints must be in black and white, 3 1/4 x 5 1/2 or larger, and must be on glossy paper.

Pictures will be returned only when stamped envelopes or photo-mailers are enclosed.

For non-prize-winning pictures accepted for publication \$1.00 will be paid for each print.

Winners of the June contest will be announced and the pictures published in the August number of the magazine. Address all entries to:

Contest Editor, Desert Magazine, El Centro, California.

Egg Drying Plant . . .

CLOVIS—An egg-drying plant will be established here. This plant said to be the only one west of Texas will have a capacity of half a million eggs daily. Employment is expected to number about 150 persons with production contracted wholly by government.

Cadets Graduate Underground . . .

CARLSBAD—Carlsbad caverns "Big Room" was setting for unique graduation exercises for a large number of United States army air cadets, soon to finish training period at Lubbock, Texas, flying school. Cadets said they would name their first squadron "The Bats," after watching with awe regular evening flight of thousands of bats from inky depths of big caves.

Indian Fighter Dies . . .

ALAMOGORDO—L. L. Garton, who built the first house in Gallup over half a century ago died here recently after suffering a stroke. He was 80 years old and had been a trapper, Indian fighter and Southwestern pioneer. He served as courier for old Seventh Cavalry and barely escaped Custer massacre by leaving service just before Battle of Little Bighorn.

Pioneer Claimed . . .

HOBBS—Mrs. Fanny Hobbs, for whom this oil town is named, died recently near Lovington. She was 85 years old. She operated a grocery store and postoffice at point where Hobbs is now located and was known as "Grandma Hobbs."

Seek Aid for Prisoners . . .

ALBUQUERQUE—New Mexico residents are moving in earnest in an effort to send relief to 1400 of their sons officially given up as lost on Bataan peninsula. Just how relief can be sent to these prisoners has not been determined. But Bataan Relief organization while only a week old had collected \$2,000.

New Navajo Superintendent . . .

James M. Stewart of Washington, director of lands for the Indian service, has been named superintendent of the Navajo reser-

vation succeeding E. R. Fryer who will be in charge of the Japanese evacuee colony on the Colorado River Indian reservation at Parker, Arizona. Well acquainted with the Indians' problems, Stewart once was sought for superintendent by a group of Navajo who signed a petition in his behalf.

UTAH

Turtles, Lizards Wanted . . .

SALT LAKE CITY—Officials of Salt Lake City zoo are seeking turtles and lizards. Boys and girls of area have been asked to contribute any other small animals or reptiles for a new "small-fry" exhibit.

Utahns Urged to See Utah . . .

OGDEN—Utah residents are urged to vacation in Utah this year as result of new advertising program being developed by department of publicity and industrial depart-

ment. Folders called "Tour-Fax" will show in map and picture all points of interest, etc., and will be placed at numerous vantage points.

Large Sugar Beet Harvest . . .

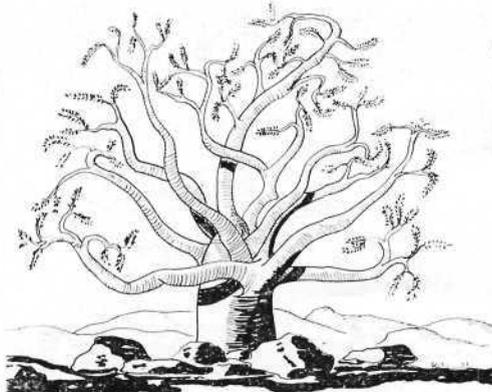
PRICE—Largest sugar beet crop ever harvested in this area is anticipated for this year according to W. S. Hallam, chief agriculturist of Holly Sugar company of Grand Junction, Colorado. Favorable weather thus far is a vital factor in crop prospects, he said.

Salt Lake Film Setting . . .

FARMINGTON—Paramount film company officials have arrived in this area to shoot a number of sequences for picture "Wake Island." Because planes bearing insignia of rising sun are used in film, it was deemed advisable to move company from Pacific coastal areas. Other scenes were taken on Salton sea near Brawley.

Do Elephants Grow on Trees?

... No BUT
ELEPHANT TREES



Grow in the
SCENIC
DESERT
WONDERLAND

of the

IMPERIAL VALLEY

The Elephant Tree is one of nature's oddest rarities . . . Unknown until a few years ago, this strange tree is found in the Borrego Desert section of the Imperial Valley of California. One of the strangest things about it is that when stuck with a knife, the Elephant Tree "bleeds" red. This is but one of the . . .

HUNDREDS OF THINGS AND POINTS OF INTEREST . . .

awaiting you in the Imperial Valley . . . With the Salton Sea on the North, Mexico on the South, the mighty Colorado on the east and the blue sierras on the West, you'll find scenic beauty and historical interest unrivaled anywhere.

A few points are the Anza Desert State Park, the old Anza trail, early day stage coach stations and routes, palm lined canyons and rugged mountains, long-dead ghost towns and very much alive mining districts, gem fields and ancient fossil beds, sand dunes and rich farms, an abundance of desert plant life and many others.

A SCENIC MAP OF THE IMPERIAL VALLEY will guide you on your trip to any part of this great desert region. A note to B. A. Harrigan, secretary, Imperial Valley Board of Trade, Court House, El Centro, California, will bring the map and further information.

IMPERIAL COUNTY BOARD OF TRADE

ANSWERS TO TRUE OR FALSE

Questions are on page 10.

- 1—False.
- 2—False. Juniper is a shrub of the Upper Sonoran zone.
- 3—False. There is no record of buffalo on the desert as far west as the lower Colorado river.
- 4—True. 5—True.
- 6—False. Father Kino's missionary work in the New World covered the period 1683-1711. Father Garcés traversed the desert 75 years later.
- 7—True.
- 8—False. A rattlesnake has a vertebra of bone tissue extending nearly the length of its body.
- 9—False. The creosote blossom is yellow.
- 10—True. 11—True 12—True
- 13—False. Coolidge dam is on the Gila river.
- 14—False. There were no burros until the Spaniards brought them from the Old World.
- 15—True.
- 16—False. Indian petroglyphs are found on rocks facing all directions.
- 17—True. 18—True.
- 19—False. They are gathered from the ground or shaken from the tree on blankets.
- 20—True.



By RANDALL HENDERSON

HECKING over the proofs for this issue of *Desert* I find that Nevada has just about stolen the magazine this month. The towns along the Bonanza Trail asked us to help popularize their road, and since there is no more interesting or deserving route in the West than this paved trail through to old mining camps, we have gone all out in our efforts to do so.

I have a warm feeling for Nevada. It has retained much of the liberalism of the Old West. There is less regimentation—and by the same token, less hypocrisy—in Nevada than you will find elsewhere. And while I am not sure that Nevada's laws would be good for California—they are adequate for a region in which the great open spaces breed strong men and women. It is only when humans flock together in the unnatural atmosphere of great cities that highly restrictive laws become necessary to protect them from their own follies.

For the most part, Nevada is plateau country with innumerable ranges where high altitudes offer the double advantage of dry healthful atmosphere plus cool crisp temperatures in summer.

And you won't be annoyed by a pack of inquisitive inspectors when you enter the state.

* * *

On the Navajo reservation at Chinle, Arizona, the cooperative trading post started by the Indians last September has been so successful that a fine new building has been erected to house the project.

I have been interested in this experiment, not alone because of the hope shared by every desert dweller that the Navajo attain a more secure economic life, but because I feel that consumer cooperatives offer the most democratic cure for the ills which beset the capitalistic system all over America.

We have been drifting toward national socialism, not because the President or the American people want the federal government to assume the functions of private capital, but because private enterprise has failed to secure equitable distribution of the abundance we are able to produce.

After we have disposed of Hitler and the Japs we still have that problem to face. The experience of the consumer cooperatives in the Scandinavian countries has convinced me that it may be solved without loss of our democratic freedoms by taking the essentials of living—that is, food, clothing, shelter, medical care and education—out of the field of competitive enterprise, and distributing them cooperatively. Then let the capitalistic brethren—the makers and distributors of everything not essential to life, health and happiness—go as far as they like with their dog-eat-dog monopolies. At least, we will all be assured of a decent living.

Our educational system already is virtually on a cooperative basis, and considerable progress has been made in the direction of cooperative medicine. But in the mad race for money many of our own neighbors have been short-changed in the matter of food, clothing and homes.

And since the Navajo has suffered perhaps more than any other group of Americans from this inequitable system, I am glad he has turned to cooperative enterprise. I hope he succeeds, not alone for his own good, but for the value his experience may have for the rest of us.

I have no quarrel with the traders now operating in the Indian country. Generally speaking, they are the best friends the Indians have. It isn't the traders' fault when the Indians get low prices for their wool and blankets. The price is determined by factors beyond the control of either Indian or trader.

The merit of consumer cooperatives is that once generally established, they will determine what price the farmer shall receive for his produce, and what wage the factory worker shall receive for his day's labor. And if they are true cooperators it will be a wage that will insure adequate food, clothing, shelter, medical care and education for every American who is willing to work.

* * *

Nature has been less lavish with her desert wildflower display this year. Perhaps it is just as well that those billions of seed lying dormant in the sand were preserved for another good season. Too many humans have too many things on their minds just now to give their attention to wildflower displays. And wartime restrictions have made desert holiday trips impractical for a great majority of folks anyway.

But the desert is not devoid of color. May is the month when two of the hardy perennials always bloom. Many parts of the desert are now aglow with the pale-gold blossoms of the palo verde tree. And the salt cedar that grows wherever it can put its roots in moist sand is crowned with delicate lavender plumes that give regal splendor to any landscape. The botanists have not given as much attention to this native tamarisk of the desert as it deserves. It is not to be confused with the imported tamarisk now so widely grown in the Southwest for windbreak and shade purposes.

The most striking floral display in June will be in the arroyos where the smoke trees grow. Smoke tree withholds its flowering until most of the other desert plants have withered, and then sends forth great clusters of deep purple blossoms as a challenge to the artists—who try year after year to reproduce them on canvas, and never quite succeed.

BOOKS OF YESTERDAY AND TODAY

—a monthly review of the best literature of the desert Southwest, past and present.

INFORMATION DUG FROM ANCIENT INDIAN RUINS

Giving a broad general outline of the findings of archaeologists in the southwestern area of the United States from 1880 to the present time, John C. McGregor is the author of a newly published volume, *SOUTHWESTERN ARCHAEOLOGY*.

Archaeological history, the author points out, is like an old file of much-used periodicals. The first volumes are much tattered and torn, portions lost and faded, and it is sometimes difficult to decipher the contents.

While there is evidence that human beings may have trod the desert as long ago as 70,000 years B. C., the story of the ancients in this region does not begin to assume any plausible degree of continuity until about the beginning of the Christian era.

Two broad general cultures, with many variations and some over-lapping have been traced—the Cochise culture which developed more or less directly into Mogollon and eventually to Hohokam, and Basketmaker, which, combined with Mogollon and influenced by Hohokam gave rise to the Pueblo culture.

The author traces these various cultural developments, citing the evidence unearthed by archaeological research to bear out the conclusions.

Written primarily for the student rather than the lay reader, the book treats the subject from an academic viewpoint, without any effort to draw conclusions as to the value or bearing of all this highly scientific work on the problems of contemporary civilization.

The importance of the book is that it serves to summarize and classify the vast fund of information gathered by various individuals and research agencies to the present time. The more thrilling task of interpreting all this great fund of knowledge for the benefit of those who are interested only to the extent that an understanding of prehistoric man may shed light on human nature in the world of today, still remains to be done. But perhaps that is the task of another branch of anthropology.

Published by John Wiley & Sons, New York, 1942. 376 pp. Appendix. Bibliography. Index. Pen and halftone illustrations. \$5.00.

—R.H.

AN INVALUABLE GUIDE FOR THE WESTERN TRAVELER

For those who travel—and there will be much travel this year despite the restrictions on automobiles and rubber—Ray Hewitt's handbook *ALONG WESTERN TRAILS* is probably the most complete and informative among all guide books covering the western states.

Written in a friendly informal style, the 160-page paper bound book devotes its major attention to accommodations and meals, but also includes a brief description of the national forests and suggests the most interesting places to see along the way.

It covers the states of California, Oregon, Washington, Idaho, Montana, Wyoming, Utah, Arizona, Nevada, British Columbia, and a limited area in Baja California.

For those who plan to vacation along new trails this year, and are wondering about the cost and character of accommodations along the route, this book is indispensable. Published by the author, 1942. Address 5110 Biloxi avenue, North Hollywood, California.

NATIVE CACTI OF COLORADO DESCRIBED BY BOTANIST

An important contribution to the growing library of books on the flora of the West is Charles H. Boissevain's *COLORADO CACTI*, beautifully illustrated by Carol Davidson.

Opuntia missouriiana was the first cactus reported from Colorado, being listed in a bare enumeration of the plants collected by Major Emory from "Pawnee Fork, Purgatory creek, and Canadian river," in southern Colorado and adjacent territory. This was in 1848.

In 1874 Porter and Coulter describe 13 cacti in their *Synopsis of the Flora of Colorado*. Coulter's Manual of 1885 describes 16 Colorado species. Coulter and Nelson's Manual of 1909 enumerate 19; and now Boissevain admits 25 species and "several varieties." Thus has our precise knowledge of the state's cacti grown.

The descriptions are mostly drawn from the living plants in the collection of the author at Colorado Springs (ele. 6,098 feet). The photographic illustrations leave little to be desired for clearness and helpfulness in identification.

There is an unfortunate deficiency in the historic angles of the subject. For though the type localities are included in the original descriptions here reproduced, these now obscure place names are neither translated into modern terms nor commented upon by the author. Yet these type localities have significance and are extremely important in determining the correct identity of the cactus species at hand against possible subspecies or varieties aside from the "typical" phase.

Published by Abbey Garden Press, 1940. \$1.00.

—Joseph Ewan

CACTUS INFORMATION IS BROUGHT UP TO DATE

W. Taylor Marshall, president of the Cactus and Succulent Society of America, and his artist-collaborator Thor Methven Bock, have made an outstanding contribution in *CACTACEAE*, published in December, 1941, by Scott E. Haselton at the Abbey Garden Press, Pasadena.

There has been a definite need for a work which would bring up to date results of recent research and modified classification since the publication of Britton and Rose's volumes, which are generally accepted as authoritative. As Mr. Taylor points out in his introduction, Borg's "Cacti," published in 1937, had been the nearest answer to this need for a popular book on the family, but it included only those species with which the author was personally familiar.

The present volume, written in non-technical language, lists all known species, includes short descriptions of species discovered since the Britton and Rose monograph, gives cultural directions, explains the new genera that are acceptable, with reasons for their acceptance.

There are 26 plates of brush and ink drawings, illustrating the main features of genera as listed in the key to the family. In addition, there are six more plates, explaining the terms used to describe the various forms—the plant itself, habit of growth, stem, spine, flower and leaf. There is also a photograph of a typical plant of almost every genus.

Bibliography, index. 227 pages, 9x12. \$5.00.

—Lucile Harris

FROM THE . . .

—DESERT— BOOKSHELF

The Desert Book Shelf carries a wide selection of Southwestern books—on Indian lore, mineralogy, exploration, history, legends and culture. Listed below are just a few of these many selections.

For a more complete list write for a price list now available.

GRAND CANYON COUNTRY. Tillotson and Taylor. Handbook covering geology, wildlife, history and recreation, and including the Havasupai Indian country. 108 pp. \$1.00

INDIAN TRIBES OF THE SOUTHWEST. Smith. Chapters on Acoma, Apache, Havasupai, Hualpai, Hopi, Navajo, Rio Grande Pueblo, Salt River, Taos and Zuñi tribes. Useful tourist information. 146 pp. \$1.50

NEW MEXICO CARTOON GUIDE. Pearce. Written and illustrated in humorous style. Geography, history, Indians, plant life, scenic features. Cartoon map, index, 107 pp. \$1.00

NEW MEXICO, A GUIDE TO THE COLORFUL STATE. Complete coverage of historical and natural setting. 18 detailed tours. Profuse illustration, pocket map. General tourist information. 530 pp. \$2.50

AN EDITOR ON THE COMSTOCK LODGE. Drury. Vivid cross-section of the Bonanza days of Nevada. Mining kings and badmen, politics and the theater—scores of colorful personalities seen through the eyes of an editor. Photos, map, index, 343 pp. \$1.00

NEVADA, A GUIDE TO THE SILVER STATE. A comprehensive handbook in the American Guide series. 8 tours mapped and described. Pocket map, 315 pp. \$2.50

HANDBOOK OF AMERICAN MOUNTAINEERING. Henderson. Written and illustrated by mountain climbers for beginners and experts. Pocket size, 150 illus. \$2.75

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THE *Desert* MAGAZINE

El Centro, California

Song of the Clay

By NINA PAUL SHUMWAY

Her brown hands are dust,
The fire is out,
The water is dry,
Long years have melted in darkness.

But the work of her hands is here—
The jar that some desert daughter
Skillfully fashioned of clay
For storing the precious water.

And the potter's love is here,
For the clay is the love of the potter
Hardened in smothered flame,
That her children might have water.

And the potter's prayer is here,
For the clay is the prayer of the potter
Adding a woman's faith
To the desert's cry for water.

And the potter's song is here—
The hymn of that desert daughter
Silently chanting in clay
Her praise to the God of Water.

• • •

Photo by Dal Woodhouse

