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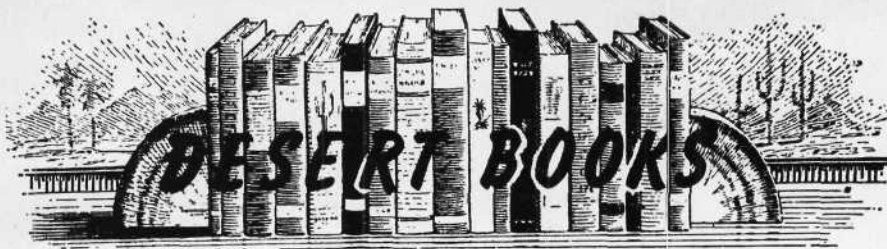
Desert

M A G A Z I N E



JULY, 1945

25 CENTS



DAKE ISSUES NEW EDITION OF GEM CUTTING BOOK

A revised, enlarged edition of ART OF GEM CUTTING has just been issued by Mineralogist Publishing company, Portland, Oregon. Dr. H. C. Dake, editor of the Mineralogist magazine, and Richard M. Pearl, well known Colorado gemologist, are responsible for this third edition.

Besides a new introductory chapter on gem cutting as a hobby, there is a 37-page section which contains many valuable tips on special lapidary technics. Among these are bedside lapidary for cripples; power feed (diamond) saw; theory and practice of polishing (by E. P. Van Leuven); sphere cutting; pitch polishing; cameos and cameo cutting; typical home lapidary shop; how to cut star quartz; drilling holes; coloring agates (Idar method); how to polish jade, and many others. The chapter on jewelry making was omitted from this edition.

Many photos, drawings, index, 128 pages. \$1.50.

In March we obtained a limited supply of these books, but it was soon exhausted and since it did not appear at that time that more copies would be available, we refunded checks to a number of persons who had ordered them. Now, however, we have received a

NEW SUPPLY OF
George Wharton James'

The Indians' Secrets of Health

American Indians enjoyed rugged health because they followed close to the principles Nature has prescribed for healthful living. White Americans have gotten far away from some of these basic "musts"—and are paying the price in pain and disability and doctors' bills. James discusses the subject bluntly—so that all may understand.

Half-tone Illustrations
280 pages—\$3.25 postpaid

DESERT CRAFTS SHOP
El Centro, California

GRAND CANYON—MIRACLE OF EROSION . . .

On September 12, 1909, Julius F. Stone and four companions shoved off in four boats at Green River, Wyoming, to run the Colorado river rapids. Two months and 12 days later the party arrived at Needles, California, at the end of one of the most successful of the early day trips through Grand Canyon.

This merely was the first of many trips Julius Stone made to and through the watershed of the Colorado river to continue his exploration and study of the fascinating geology of this country.

Finally, in 1932 he felt conversant enough with the subject to publish his own and the conclusions of others as to the geology of the Colorado river canyon. Hence the book, CANYON COUNTRY, The Romance of a Drop of Water and a Grain of Sand.

While part of the book is a day-by-day record of his first trip through the gorge, the greater part of the volume is devoted to a study of the geological history, with over 300 half-tone illustrations which with the explanatory notes accompanying them, give a graphic story of the miracle Nature wrought in the formation of the Grand Canyon abyss.

Grand Canyon is mainly the work of erosion, and for a detailed study of how sand and water and heat and cold, with sufficient time, have been able to gouge out this great chasm, Stone quotes at length from the report of Captain Clarence D. Dutton in *Tertiary History of the Grand Canyon District*, recognized as one of the most authoritative studies ever published on the subject.

With foreword by Henry Fairfield Osborn of the American Museum of Natural History in New York City, the book was published by G. P. Putnam's Sons. 435 pages with index. \$5.00.

—RANDALL HENDERSON

WORLD OF ROCKS VIEWED FOR NOVICE AND STUDENT

We live on a rock, for the world is almost wholly a rock, in one form or another. A large part of it may be covered by the sea but underneath the sea is rock for sand is little pieces of rock. We do everything with rock from seasoning food with it to building our homes and using its metals for making our machines for making everything else.

How these rocks came about is known as

the science of geology and the story of their formation is delightfully and understandingly told by Carroll and Mildred Fenton in THE ROCK BOOK which is profusely illustrated. This is an easily understood book for the novice in geology and excellent as a refresher course for the person who studied it at college. A knowledge of rocks is needed by the collector of minerals and gems of course if one is to have any more than a surface interest. If you possess a good book on mineralogy and another on gemology you should certainly have one on geology and I can think of none that I would rather recommend than THE ROCK BOOK. It also has a chapter on how to collect and label rocks.

If it follows that one's visit to the opera is more appreciative with a previous knowledge of the story and music or if a visit to an art gallery is more intelligently enjoyed by a previous study of arts and artists then it is even more important to the enjoyment of any trip, anywhere, to have a working knowledge of geology. Every vista from a train or car window presents geology and if the view is beautiful there is great satisfaction in knowing the foundation of it all.

Doubleday, Doran & Co., Garden City, N. Y., 1944. Illus. with color plates, photos, line drawings. Index, 357 pages. \$6.00.

—LELANDE QUICK

"FISH TRAPS" BELIEVED BUILT BY HUNTERS, NOT FISHERMEN

On a series of terraces at the base of the Santa Rosa mountains in southern Coahuila Valley, California, are three rows of symmetrically placed small rocky enclosures, known to the tourist world as "Ancient Fish Traps."

To refute this popular claim and to present all facts possible in attempting an accurate explanation of these structures, Adan E. Treganza wrote a nine page illustrated paper on the subject, which has been reprinted from *American Antiquity* for January 1945. Among the many theories advanced to account for the stone-circled depressions are that they are sites of former homes, traps to catch fish from ancient Lake Cahuilla, shooting blinds for hunters, mescal roasting pits, storage pits for mesquite beans, sweat-houses, or the work of nature.

Mr. Treganza concludes that the "fish trap" theory is erroneous and is solely the outgrowth of local misinterpretation. He believes that if they are house sites, as some scientists believe, they must be unique, as the diameter ranges from four to 10½ feet, there is no evidence of continued occupation and their arrangement would be peculiar for such use. Most of the evidence, as he presents it, seems to point to the possibility that they served as blinds for antelope hunters.

DESERT Close-Ups

• Frank C. Lockwood, of the University of Arizona at Tucson, has spent almost a lifetime writing about the men who made history in the Southwest. He has told of their adventures and triumphs in such books as *Pioneer Days in Arizona, Tucson—the Old Pueblo, With Padre Kino on the Trail, The Apache Indians, More Arizona Characters*. DESERT next month will publish his latest tribute to one of the Southwest's lesser known heroes, Francois Xavier Aubrey, the man who first won fame by riding horseback the 780 miles from Santa Fe to Independence, Missouri, in five days and 16 hours.

• Mojave, the desert tortoise which James E. Mayberry found last winter near Long Beach and sent to the Marshal Souths on Ghost Mountain, long since has come out of hibernation. Marshal reports that Rider has Mojave looking almost natural again, having worked patiently for long hours with a dull knife, scraping off the layers of blue paint someone had daubed on him. "He seems grateful to have the goeey stuff off," writes Marshal. "There should be a \$10,000 fine and 50 years jail sentence for painting tortoises."

• Dr. Byron Cummings, archeologist and director emeritus of Arizona state museum, has returned to Kinishba, northeast of Globe, Arizona, to continue research and writing. He already has written one book, *Kinishba*, and many papers and reports relative to this prehistoric pueblo of the Great Pueblo Period.

• Mountain Treasure, in this issue, is the seventh of the series Barry Storm wrote about lost gold and silver mines in the Superstition mountains east of Phoenix, Arizona. Although the Lost Dutchman, supposed to exist somewhere in the broken ruggedness of this range, is the most famous of them, Storm in this series has written about other less well known ledges and mines of the Superstitions, for they too have lured men for generations—to adventure and to death.

• Walter Ford, who wrote the Doodlebug story in this issue, has been asked by many potential treasure hunters just where to start looking for "lost mines." He suggests, first, that they read Bailey's *Golden Mirages* and Mitchell's *Lost Mines*, the latter now out of print. Next, get acquainted with the old timers—they usually have a location or two tucked away in their storehouses of information.

CREED OF THE DESERT

By JUNE LE MERT PAXTON
Yucca Valley, California

The desert counts no time by days,
Nor yet by passing years;
It lives right on courageously,
Untouched by man-made fears!



Volume 8

JULY, 1945

Number 9

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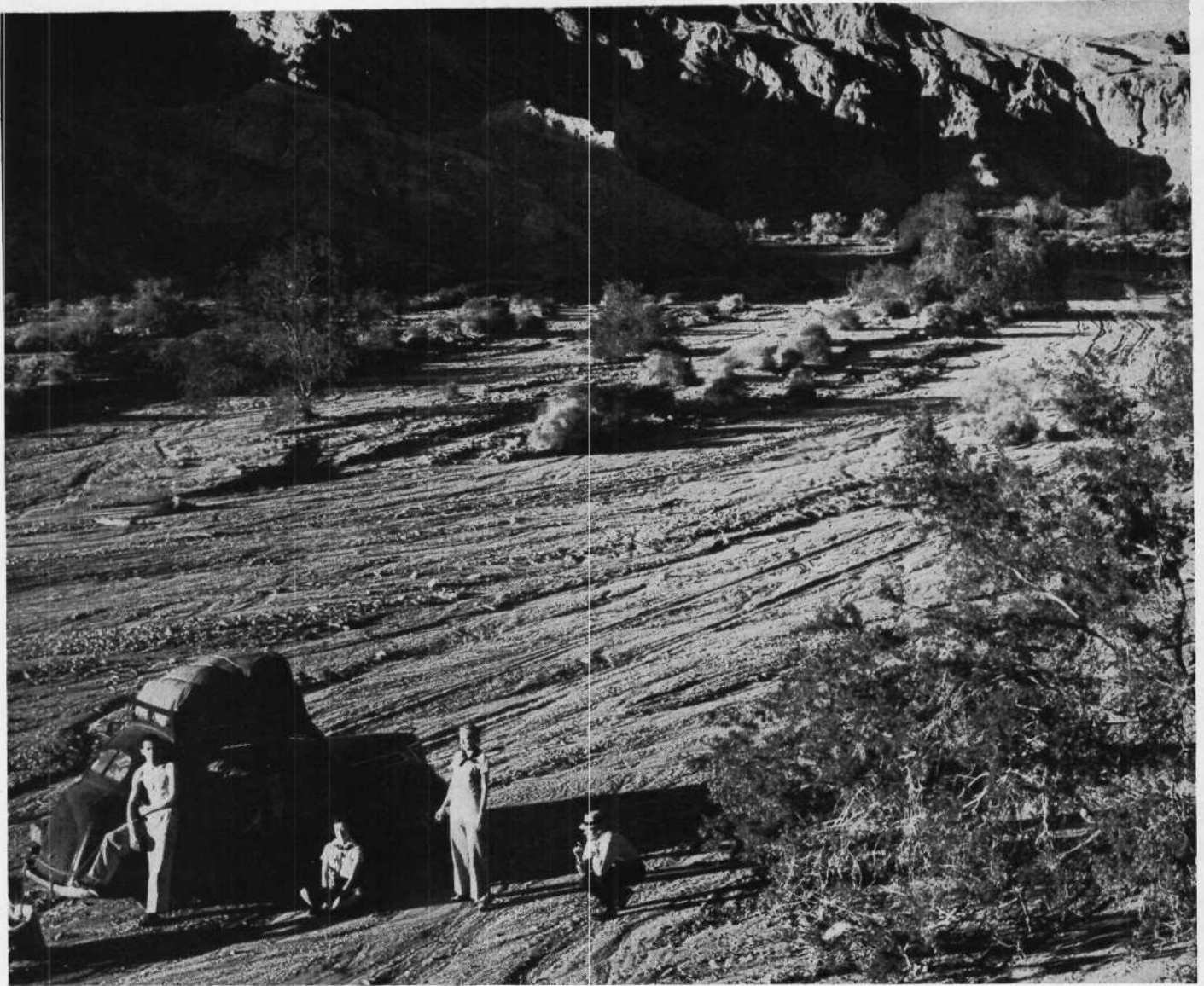
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Photograph taken in Hidden Springs canyon, California, by Dick Freeman.

CARNIVAL TIME

By JANET MOORE

Portland, Oregon

The gypsy desert dances
At her yearly blue-sage ball,
Sun-bright skies her 'kerchief,
Frost-tinted hills her shawl.

LANDMARKS

By CLARICE WIDMAN

Loveland, Colorado

I marked the place well in my mind:
The dry creek bed—the rocks behind,
The deep-notched mountain to the left,
The twisted cedar in the cleft,
The sand dune like a queer igloo
Would be most helpful as a clue
To where the spotted agates lay
When I returned, another day.
The time slipped by, a month, a year.
Another day I journeyed near
By devious desert pathway led
To find the spotted agate bed.
The dry creek flowed wide, swift and deep.
The sand dune shifted to flat bare sweep.
And the twisted cedar I would know,
Had vanished. All was strange, till lo,
I saw the deep-notched mountain peak
Landmark eternal that I seek!
Then, with bearings true I found the way
To where my desert treasure lay.

My Desert Trip

By GEORGE M. GOODELL

Los Angeles, California

I like a trip up a sandy wash
With a smoke-tree here and there,
Make a detour around a catsclaw bush,
Have m'souite twigs brush my hair.

I like the soft ground that's under foot
And the hard bedrock at times;
The winding course, the narrows and flats,
The stoops and the little climbs.

I like to pick up odd looking stones
And kick in the grav'ly bed,
To swing my pick at the rocky bank
Or nick a boulder instead.

I like to examine little plants,
I wonder at blooms so pure,
And puzzle the cactus' varied spines;
Protection so dainty yet sure.

I like to scare up a cotton-tail,
See a lizard flicking by,
A roadrunner streaking thru the brush,
Or a buzzard in the sky.

I like to stop in a restful spot
(Out here one's easy to find),
To eat my lunch and dreamily rest,
And flood with sweet peace my mind.

JACKRABBIT HOMESTEADER

By GRACE PARSONS HARMON

Los Angeles, California

I've got me a piece of a desert
And no one knows where it is "at";
It's just four straight lines on a paper—
It may be deep, hilly or flat.
They can't stake blue sky or warm sunlight,
Or near stars and great moons that shine.
Who knows? I might find me my true love
By that piece of desert of mine!

MY KINGDOM

By LELA M. WILLHITE

Garvey, California

I like a smooth, long stretch of desert land
At night, and in the daytime too, its sand
Running away in rippling waves, to disappear
To a place beyond my ken. I want a sky clear
As the arch above a desert's floor at night,
And then I'd take a full moon for my light!
When clouds came I'd have them sailing high,
All day, across the cobalt sky
Till the sun lay close above the mountain line
And I'd say, God, that fleet of ships is mine!
When summer came and locusts piped their call
I'd take my portion of the dust and heat and all
That any desert gives in form of stormy weather;
I'd say, God and the devil made deserts, together!



Two-unit doodlebug in operation.

Doodlebug Prospector

THE OLD prospector got out of his car and walked over to where I was going through some strange maneuvers with a still stranger piece of apparatus. He watched me in silence for a few moments, squinted at the sun, as if to gauge its intensity, then queried, "What are you aimin' to do with that contraption?" The contraption to which he referred was an electronic metal locator, commonly known as a "doodlebug." What I was aiming to do was to plot the depth and extent of a body of iron ore.

I was surveying a location on the Mojave desert for a mining syndicate at the time and was accompanied by one of the officials. We already had uncovered some good-sized specimens to confirm the findings of the doodlebug, so the remaining task was to determine the approximate size of the ore body. When I explained to our visitor what we were doing he scoffed at the idea. There was no ore of any kind in that vicinity, he asserted, but if we wanted proof he would give it to us in short order. He strode over to a near-by wash and returned with a forked branch several feet long.

"Now!" he exclaimed. "We'll see just how smart you fellows are." Then he began a contest between the newest and the oldest methods of making Mother Earth re-

They are not infallible, these new scientific devices which locate minerals beneath the surface of the ground—but they are based on a scientific principle which makes sense—within certain limits. Walter Ford's story will help clear some misunderstanding as to just what these limits are.

By WALTER FORD

veal her secrets. The one, based upon a sound and proven scientific principle, the other, upon some mysterious factor which, if the forked-stick clan understands, it is loathe to reveal. From a scientific viewpoint, I should be inclined to attribute a little superstition and legerdemain in their operation, but perhaps I am a bit prejudiced.

If the vehemence with which our forked stick disciple asserted his findings, were to be taken into account, I'm afraid that science would have taken a poor second place that day. Although he crossed and recrossed the area that I had gone over previously with the doodlebug, nary a

quiver did the stick produce. With a little fun in mind, I asked the old fellow to let me try my luck. I found that the stick would respond to the slightest inward or outward pressure, so I made it dip violently where the doodlebug had previously indicated ore. "That doesn't mean a thing," our visitor shouted. "You just don't know how to operate it." With that he snatched the stick from my hands and angrily stalked back to his car.

Prospecting for minerals beneath the surface of the ground and mapping hidden geologic structures by means of electrical currents and radio waves come under the general term of geophysical exploration. One of its many subdivisions is the locating of buried metals at fairly shallow depths with portable equipment, such as the so-called doodlebug.

One that is properly built and intelligently operated should locate metals several feet beneath the surface of the ground. Owing to the large number of factors involved, it is difficult to estimate the maximum depths at which buried metals may be located. The size or mass of the metal, the condition of the soil, whether moist or dry, the depth of the metal, the length of time it has been buried—all must be taken into consideration. One reliable manufacturer of metal locating outfits gives his



John Hilton searching for the "gamblers' treasure."

being carried in a knapsack, similarly to the mine detectors used by the armed forces. Some instruments of this type have the operating apparatus mounted on the coil frame, but for portability I prefer the arrangement shown in the photograph. In operating position the two coils are electrically balanced and no whistle is heard in the headphones. When the magnetic field set up by the coils strikes buried metal, it is distorted out of shape. This unbalances the circuit and causes a whistle to be heard in the headphones.

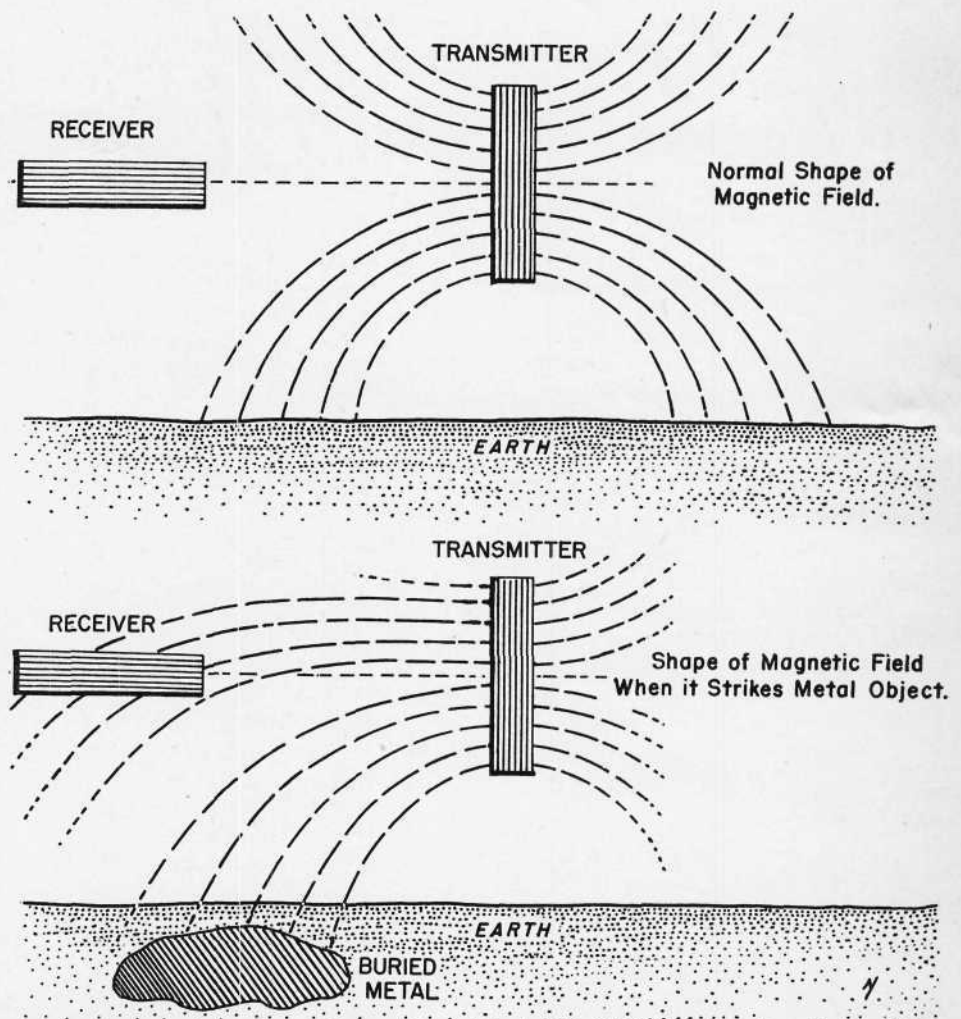
Contrary to the opinions held by some doodlebug operators, the principle of radar is not involved in its operation. High frequency radio waves, such as are used in radar would be reflected from the ground, rather than penetrating it. A typical example is the terrain clearance indicator where a radio wave is directed from an airplane toward the ground, then reflected from the ground back to a receiver on the plane to determine the height of the plane from the ground.

One fact that the doodlebug operator must accept is that it will not distinguish between precious and non-precious metals. At times it is rather discouraging to learn

operating range as 15 feet. Of the various types of doodlebugs that I have owned and operated, I have never had occasion to go deeper than six feet, so I may place that depth as a conservative estimate of their operating range. In one instance I was able to detect a small cartridge shell nearly one foot beneath the surface.

There are two general types of doodlebugs, both of which operate upon similar principles. The two-unit type, which has a transmitter at one end of two handles and a receiver at the opposite end, has the advantage of being more stable in operation and more sensitive than the single unit type, although it is somewhat more unwieldy to handle. The two-unit type consists of a coil of wire wound within each frame of the transmitter and the receiver which are placed at right angles to each other. In operation the coil of the transmitter sets up a uniform magnetic field, none of which passes through the receiver coil. When the magnetic field set up by the transmitter strikes buried metal, it is distorted out of its original shape and some of its magnetic lines pass through the receiver coil. These magnetic lines flowing through the receiver coil set up a current within that coil, which causes the receiving apparatus to send a high pitched whistle through the headphones. Some doodlebugs are equipped with a current meter in addition to headphones to give a visual indication when metal is located. The drawings illustrate the action of buried metal upon the magnetic field.

The single-unit type of doodlebug has the two coils wound upon a single circular frame, with the operating apparatus



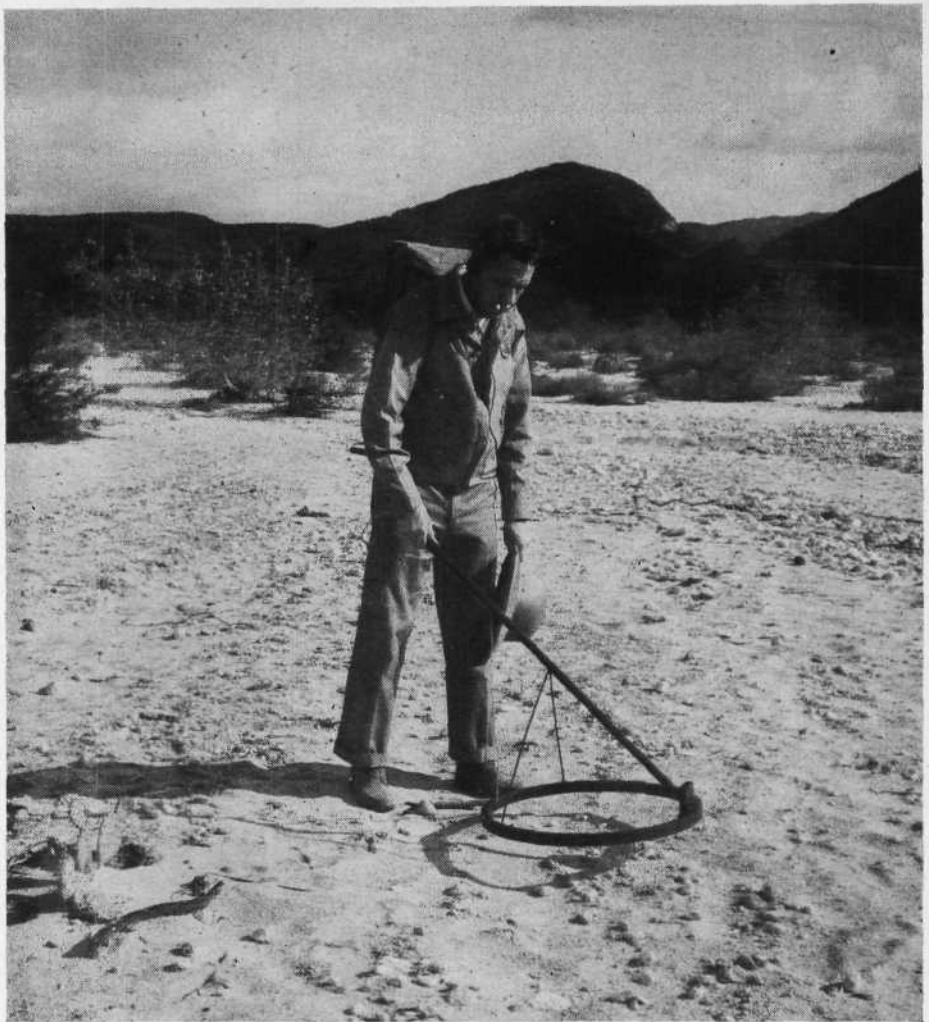
Illustrating the principle on which the electronic metal locator operates. Sketch by Norton Allen.

that the pot of gold one is seeking is nothing more than a stove lid, an old tin can, or some equally worthless object. John Hilton and I had such an experience one warm spring day while treasure hunting on a section of the Colorado desert. Briefly, the details surrounding the treasure we sought were that it was located near the former site of an old-time road house and that it amounted to approximately \$3000 in gold and silver coins. As related to us, the story goes back to the 80's when the road house was flourishing. A fight started in a room full of gamblers. During the melee the cook or his assistant scooped all of the stakes into an iron kettle and buried it outside in a pile of debris, and there it was supposed to have remained hidden.

Once we located the site of the road house, we were not long in picking up an "active" signal on the doodlebug. After a wearisome period of digging under a hot desert sun we unearthed the treasure—an old metal-bound trunk, full of rich desert soil. Should we continue the search? "*Mañana es otra día*," suggested John. Yes, tomorrow would be another day, so we retreated to the cooling shade of a near-by tree. As we passed the time away in talk of the far off places we had both visited, I could not help but reflect that our efforts had not been wholly wasted. The congenial companionship and the relaxation that followed our strenuous activity in the open air compensated to a large extent for the tangible treasure we had failed to find.

Taking advantage of the mystery that has been associated with the operation of the doodlebug, some unscrupulous persons have foisted worthless apparatus upon unsuspecting buyers, secure in the belief that the chance of their being discovered was very remote. These artisans have been clever enough to assemble a few dollars worth of radio dials, knobs and wire into impressive appearing instruments, selling for many times their actual worth. I heard of one case in which a shaft was sunk on the Mojave desert several hundred feet deep on the findings of one of those fake doodlebugs. The operator of the device one day found it expedient to leave the scene of his operations in a hurry, and in doing so forgot his equipment. A friend of mine who took the gadget apart, told me that it consisted of little more than a wood box with a knob or two and a pair of radio headphones.

A point that the treasure hunter should keep in mind is that while many of the lost treasure stories were based upon fact, some of them should be accepted for just what they were intended to be—yarns for campfire consumption. And if the treasure hunter does not take his work too seriously, he can have a lot of fun. He may wear out much shoe leather, but he will meet some very interesting people and acquire far more desert lore than he would have done had he held to the beaten path. If he should



The author operating the single-unit type of doodlebug.

stumble on to the elusive treasure, it will just be an added dividend.

No treasure hunting story would be complete without a reference to a tale that stirs the imagination of the treasure seeker whenever it is told—the "Lost Ship of the Desert." Somewhere along the sandy stretches forming the shore line of the long arm of the sea that extended from the Gulf of Lower California over the western section of the present Colorado desert, a ship laden with pearls and other treasure is supposed to be buried. Several stories relative to the lost ship have appeared in previous issues of the Desert Magazine. Author de Fierro Blanco gives a detailed account of the venture in his *Journey of the Flame*. Like many of the lost mines, the lost ship has wandered all over the desert. Its rotting timbers have been "discovered" in so many locations, that if only part of the stories are true, a small fleet of pearlshells must have been beached on that eventful day nearly three centuries back.

South of Indio along the foot of the Santa Rosa mountains is an excavation approximately 100 feet across and ten feet deep. As the story was related to me, the hole was dug in recent years by three foreigners who appeared upon the scene with

a well-defined map and an air of knowing just what they were going to do. I was told that the searchers had unearthed a number of brass ship fittings, but before they could finish their job they collided with the arm of the Law. It seemed that the three adventurers had attempted to supplement their treasure hunting with some extra-legal activities and were taken out of circulation. At the time the excavation was pointed out to me, I did not have a doodlebug with me to check the location and, due to the gas curtailment I was not able to return to get any additional facts, hence the story may be taken for what it is worth.

During the days of the Civil War, as I heard the story, approximately \$50,000 in gold was being sent from the Pacific coast to help the rebel cause. Fearing a possible ambush when they reached the Colorado desert, the party decided to bury the gold. As they crossed a wash just south of—but I have just recalled that this is an adventure that John Hilton and I hope to share together in the not too distant future. When gas is plentiful once more and new batteries are again available for the doodlebug, perhaps we can trace the fortune to its hiding place.

Long long ago the Great Earth Doctor created the Hohokam people, and he gave power to a medicine man to govern each village—Buzzard Man for what is now Casa Grande ruins; Dove Man for the village where Mesa now stands; Bat Man for a village where Tempe is; Mountain Sheep Man and Squirrel Man for villages at the present Phoenix. But the Hohokam became disobedient and wicked. Then Earth Doctor sent See- α -huh, greatest of the miracle men,

to bring the Pima people from across a great body of water to drive the Hohokam out of the land . . . This was the See- α -huh whose earthly abode in the Baboquivari mountains of southern Arizona Clee and Betty Woods and Paul the Papago youth set out to find. Clee tells how he discovered the concealed cave where for hundreds of years Papagos and Pimas had come to hold their tribal ceremonies of worship and prayer.

I Found the Cave of a Pima God

By CLEE WOODS

I STILL can hear Paul whispering at the mouth of that cave. I knew it was a prayer to his ancestral god who had inhabited this cave far up in the side of the Baboquivari mountains.

Paul was a Papago boy of seventeen. He had been to school and learned much of the white man's lore. Down at Topawa, nine miles southeast of the Papago capital

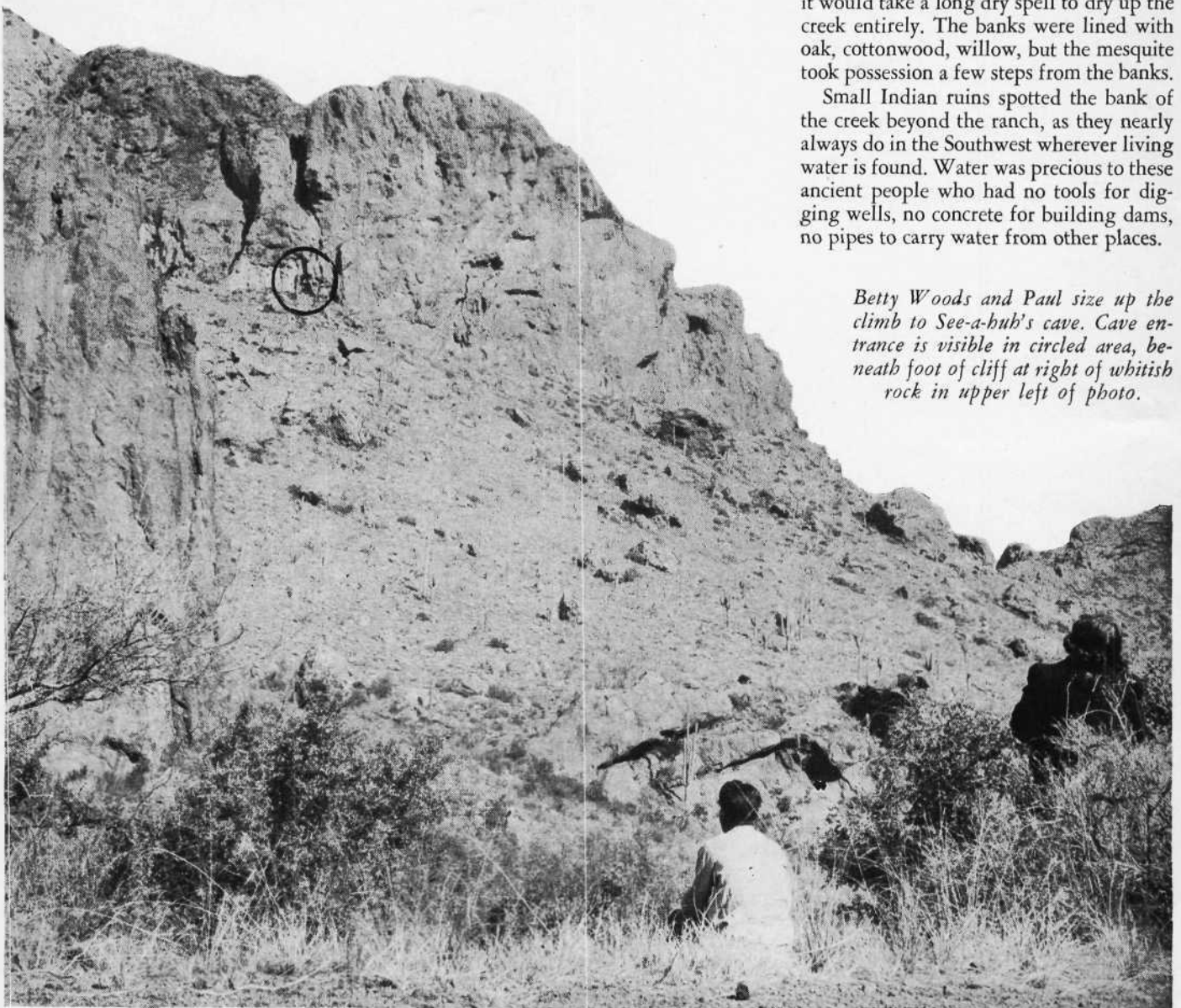
of Sells, Arizona, Paul had agreed readily to take us up the mountain to find the cave. He'd never been there, he said, but the cave's location had been pointed out to him, and an old Papago said that it was all right for the boy to guide Betty and me up there.

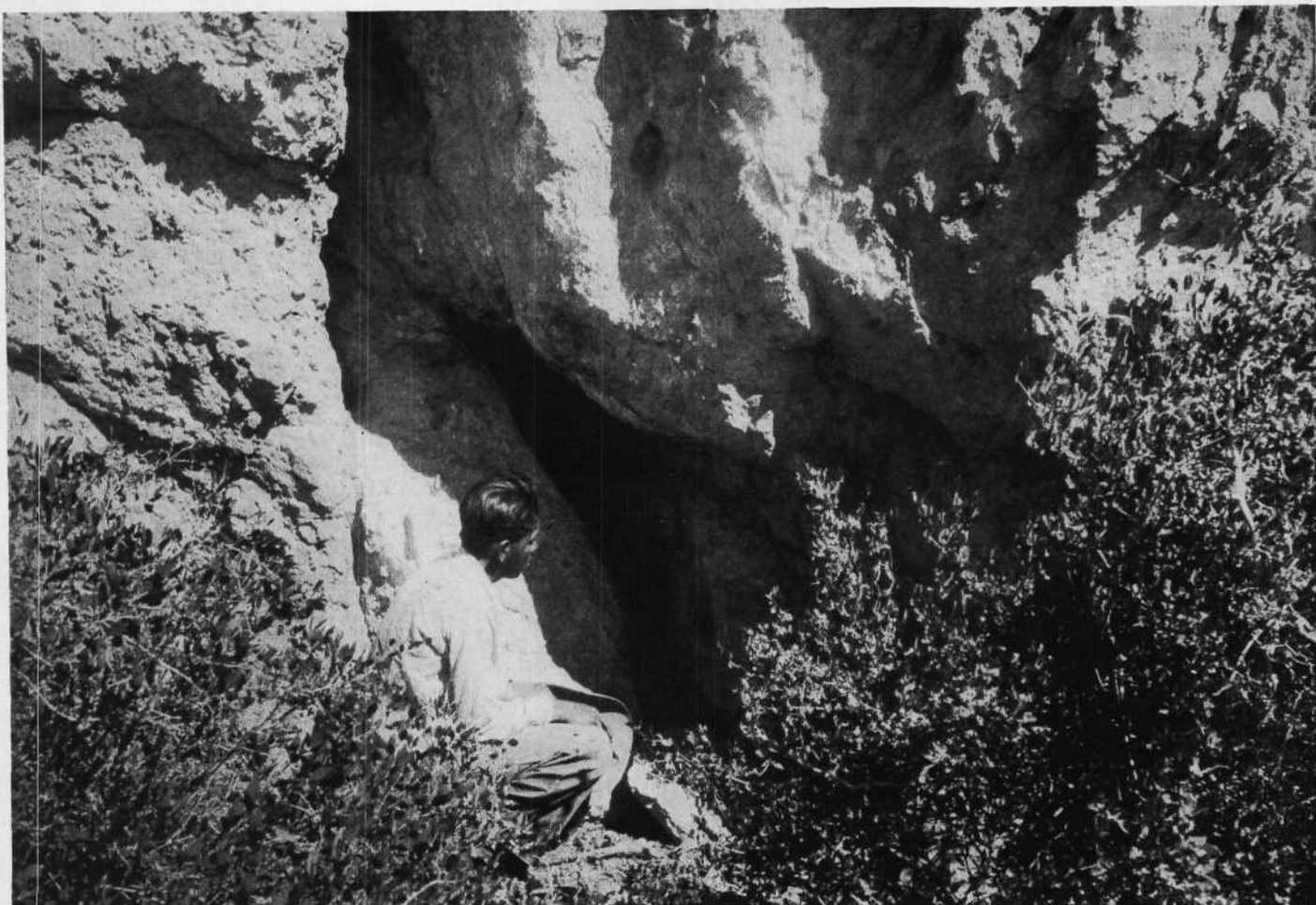
It's a splendid all-weather dirt road from Sells to Topawa. After we'd picked up Paul

in the little cluster of stick-and-mud houses there beside the Catholic mission, we drove some 12 miles in an easterly direction, pushing right up against the foot of rugged Baboquivari Peak, guiding on its left or northern side. Here was a ranch house beside a fine little stream of water. Water running so boldly in this wet winter, as measured by desert standards, that I felt it would take a long dry spell to dry up the creek entirely. The banks were lined with oak, cottonwood, willow, but the mesquite took possession a few steps from the banks.

Small Indian ruins spotted the bank of the creek beyond the ranch, as they nearly always do in the Southwest wherever living water is found. Water was precious to these ancient people who had no tools for digging wells, no concrete for building dams, no pipes to carry water from other places.

Betty Woods and Paul size up the climb to See- α -hub's cave. Cave entrance is visible in circled area, beneath foot of cliff at right of whitish rock in upper left of photo.





Paul contemplates cave where his Papago ancestors came to worship for hundreds of years.

Paul pointed up a steep side of a mountain that was pimpled with big loose rocks rolled down from the rimrock and half-clothed with yucca, mesquite, cholla and sotol. But it was the saguaros that had possession of the mountainside. Here and there they were, marching right up the rugged slope, like soldiers a thousand strong. But soldiers straight and grand, not compelled to take cover and fight as they marched upward. Ocotillos were their entanglements to overcome.

When we were against the very foot of Baboquivari Peak, Paul faced north and said that the cave was beneath the rimrock of the mountain we saw as we faced away from the peak—not in the peak itself. Betty climbed part of the way with us, surveyed the rest of the rugged rock-walled mountainside and said she'd let me go on without her. Paul had difficulty in finding the cave, once we were up beneath the great reddish rimrock. I myself finally located the small hole that constitutes the only opening of this dwelling place of See-a-huh, intimate god of the Pimas and Papagos.

The hole barely was large enough for me to squeeze through. Up in front of it was a thick growth of rabbitbrush and mesquite, hiding the entrance effectively from any chance notice. Back where the weather

couldn't reach, the walls of the entrance still were slick from the passing of many red bodies for hundreds of years. Bodies, no doubt, dropping in sweat during the ceremonial dances.

For here was See-a-huh's sacred dwelling place. The throne of thrones. Years before this I'd heard about this cave of the great god from a Pima Indian. John Mack, middle-aged Pima and one-time Indian band leader, had made a lifelong study of Pima history and legends as handed down by word of mouth. Day after day and night after night, he came to our trailer parked near Sacaton, and related to me the legends of his tribe as they'd been told to him by the old men. John realized the importance of getting this rich material down on paper while someone lived who still could tell it. Already many of the old men who had told him these things had gone back to their mother earth, and the Pima tribe is so progressive and modern that the young people aren't bothering today to learn what the old ones believed and lived.

Well, John brought See-a-huh alive for me. Made me see him as a real anthropomorphic deity, great miracle performer of Pimas and Papagos back in the days when these two peoples were one, before the vast stretches of the desert between them

gradually separated them into two tribes with diverging language and customs. How much more real then must See-a-huh be to a boy of the tribe, brought up in a remote section of the reservation where primitive beliefs still are strong.

When I crawled through the worn cleft in the cliffs, then, Paul wouldn't go in with me. He gave no reason. Just said he'd wait for me outside. But I hardly was through the hole when I heard his whisper. It continued, too, in the Papago tongue that See-a-huh understood, so that I was sure that the young man was praying before this great altar place of his ancestors.

But I couldn't listen long to Paul's worship. I was in the high meeting place of the god, and I turned on my flashlight. I saw before me a large irregular cave, ample to accommodate, say, a five-room cottage. Smoke had blackened the walls. The smell of it still was there with the smell of dust and bats and—well, just the smell of the ages.

There was no altar standing, but large stones lay about the floor and evidence was present of the visit of many other white people before me. What may have been here when the whites first came into the cave I can't say.

The one definite thing I saw was that this cave clearly had been used as the holy of

holies, the place where the believers came to be with their god. To feel his presence and partake of his divinity as much as mortal flesh may.

In the middle of the room and at other spots ashes and charcoal lay deep. On the floor were fragments of prayer sticks and arrows. Pieces of sandals and yucca cuds. A little bundle of a certain medicinal herb which I'd seen the Navajo use in the Yei-bi-chi ceremony. Broken pottery and a metate. Despite these latter, there was no indication of homemaking here.

How bright was that sunny February day when I returned to the outside. How primitive still the jagged sides of Baboquivari mountains, where the peak takes to the sky like a boy late to a game. As I stood there looking out over the blue-hazed stretches of that mysterious Papagoland which provokes a thousand thoughts while

hiding its secrets, two huge eagles hunted in the crags just above me and I knew that this one spot on the face of the earth was little changed from that day a thousand or two thousand years ago when some withered medicine man tracked his god to his earthly dwelling.

John Mack had told me how *Geé-owudth Maa-a-ki*, Great Earth Doctor, greater than See-a-huh, had built this part of the world and all the world. How he had created the Hohokam people and had given power to a medicine man for each village, to rule and guide them the way that was good for them. There was *Seévun*, Buzzard Man, for what is now Casa Grande ruins. Then *Chín-na-shut*, Lizard Man, for the present Casa Blanca ruins, a dozen miles west of Sacaton, Arizona. Dove Man, *Háu-a-be Au-a-tum*, for the village where Mesa now stands. At Tempe

of today there was the village of *Nán-na kab-muhl*, Bat Man. At Phoenix were two villages, one of *Chí-i-shon*, Mountain Sheep Man; the other of *Shirl-ik-kh*, Squirrel Man. And many more.

But the Hohokam people had become disobedient and wicked. Earth Doctor sent See-a-huh, greatest of the miracle men, to bring the Pima people from a long distance, lead them across a great body of water and finally help them drive the wicked Hohokam people out of the good land that they, the Pimas, might possess it.

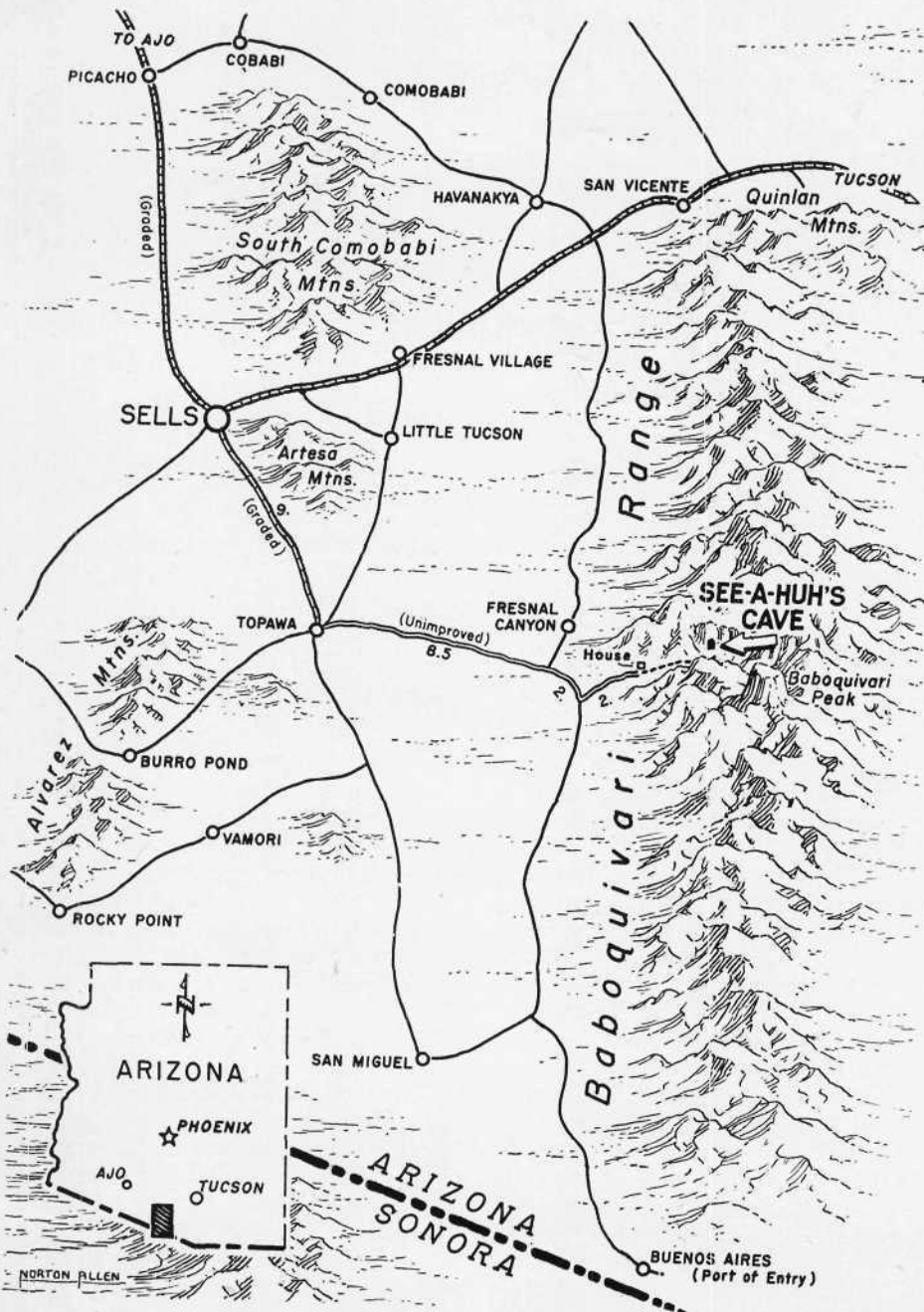
And so, because I had listened years before to the legends told me by John Mack, when I looked up at the two eagles flying above the rimrock over See-a-huh's cave, I knew about *Vankee*, Eagle Man. Quite a blade, Vankee. Ladies' man. He kidnapped a maiden and carried her off to his cave—but not this cave. Then he ate children and piled dead people up in his cave. A hoarder! Great Earth Doctor, supreme god, had to send See-a-huh to slay Vankee and end his depredations.

He was the same See-a-huh whom the Papagos for centuries came here to meet in the cave now at my back. Perhaps See-a-huh appeared in some masked form, as the Zuñi gods return each year to the Zuñi Pueblo of the present, and not greatly unlike the santos we see in native homes and primitive churches all through the Southwest, to whom worshippers give more god-like reality than the mere symbolism the church intended.

I asked Paul if he knew the story of Vankee. He did not. He knew about See-a-huh. They all do. But he was too much of a present-day school boy and too much a product of his reservation as it now is, to know about the old things I had learned of his people.

Just an accidental hole in the mountain? A symbol of primitive people and their superstitious beliefs? No. The builders of these legends were the same as you and I today, trying to find the answers to things. Why and how was the world created. Why a sore on the leg that won't heal? Why not wings like Vankee? And on and on. We have cures for the sores—some of them, anyway. But there still are many answers I'd like to know. I come nearer to them, often, when I drop back a thousand years and go out to a place like See-a-huh's cave that's been hallowed for me by the prayers and worship, however primitive and superstitious, of men trying earnestly a thousand years ago to find the answers.

I think something of the spirit of the good, powerful See-a-huh came into me that day, there in front of the cave mouth, as I looked out into the great sea of color above Topawa, Burro Pond, San Rafael and on into the farther purple and gold mists hugging about La Lesna mountains where they crossed the border and dipped into Mexico.





William A. Brophy of Albuquerque, New Mexico. New commissioner of Indian Affairs.

Meet the New Commissioner!

An Interview with William A. Brophy

By DAMA LANGLEY

WHEN THE 23,000 young Indian men and women serving in the armed forces throughout the world, return to their reservations in America, they'll find a new director of their destinies—William A. Brophy, 42-year-old attorney of Albuquerque, New Mexico, whose appointment as Commissioner of Indian Affairs was confirmed by congress March 6, 1945.

These Indians fighting right along with their white comrades for freedom of all nations, justly feel that they are entitled to plan and shape their own lives without the sometimes stupid rule of white men set over them. They, together with the thou-

sands of their white tribesmen working in war factories and other essential industries, and the thousands on the reservations doing their part as good Americans, will find Mr. Brophy a sympathetic and able commissioner if he is permitted to follow his honest convictions. Here is a man who believes that Indians have shown their ability to work toward full and unhampered citizenship in the country they have been defending.

When former commissioner, John Collier, announced his retirement, many tribal leaders of the 400,000 Indians in the United States and Alaska, urged that one of their own blood be named as commis-

sioner. The idea seems to have astonished congress. Such a sensible and simple act as appointing a qualified Indian, any number of which were presented to them for consideration, was not to be thought of!

Many of the Indians, particularly the 55,000 Navajo, objected to the appointment of Mr. Brophy, fearing he would continue former policies which they considered disastrous. But the senate committee on Indian Affairs listened to all protests, investigated all charges, subjected Mr. Brophy to a grilling and intensive examination, and then unanimously recommended that he be appointed.

I asked for an appointment with the

new commissioner and we faced each other across his desk in the Indian Offices high above the Chicago river, in that great noisy city so far from the homes of most of his charges. Mr. Brophy might well have been an Indian, himself, with his dark eyes, black hair and tanned skin. But when I asked him about it, he laughingly said his ancestors were Irish.

"What interest do you have in Indians? Why did you accept the office of commissioner?" I asked.

"I've liked the Indian people since I first went to New Mexico 20 years ago. For 12 years I was attorney for the 19 Pueblos of New Mexico and I was impressed by their intelligence, their sense of justice and their fairness. They fight for what is theirs but they are fair fighters. I have never known one of them to take an unfair advantage or commit an underhand act."

"Do you know much of other Indian tribes?"

"No, only the New Mexico Indians and those of northern Arizona. But I am unwilling to think that fact will influence my ability to serve all tribes alike. Perhaps not knowing individuals of any certain tribe may aid in an impartial viewpoint.

"I was born in New York in 1903 and had my schooling there and in Chicago. Then I went to New Mexico university, and law school in Colorado. Since then, outside of the time I've spent in Washington on the Puerto Rican commission, and a few trips to Puerto Rico, I've stayed in New Mexico. I practiced law there with one of the old legal firms."

A discussion of his plans for the Indians disclosed his reluctance to make definite statements until he had personally investigated their needs and the possibility of obtaining results.

He did say that his first concern was to familiarize himself with the entire set-up through which Indian Affairs function. He made it clear that he was not criticising any former commissioner or superintendent but that he felt it an obligation to make sure that the machinery was in good working order; that every dollar granted for Indians was spent for the purpose granted. In such a scrutiny of routine and personnel he would necessarily become familiar with the whole picture of Indian administration.

"There is something definitely wrong when 90 per cent of the Navajo, an intelligent and energetic tribe, are illiterate. By illiterate I mean they can't read or write and have no knowledge of English. If it is humanly possible I intend to remedy that situation. There, of course, must be considered the great distances between roads on the reservations and the hardships encountered in trying to get children to and from school. And the economy must be corrected. Education comes slowly when the whole existence depends on hand to mouth efforts."

"What is your attitude toward the Indian arts and crafts?"

"That is something the Indians themselves must govern. I like to think there will always be members of each tribe with enough tribal pride and love of beauty to keep their handicrafts in commerce. I want to see the sale of their products put on a higher basis. The white world should be educated to the Indian art rather than the artisan brought down to meet tourist ideas and prices. I believe there will be silversmiths and weavers as long as the Navajo tribe exists and that holds true of other tribal potters and basket makers."

I spoke of the Indians' wish to have one of their own race as commissioner. Mr.

Brophy said he thought the Indians should be encouraged to develop leadership and initiative among themselves, and that their ability to take their place on equal terms with the white world in which they live lies within themselves.

"What do you think of abolishing reservations?"

"Oh, no, you don't! You don't drag me into a discussion of *that* just yet. But come and see me again in six months and I may have interesting answers to some of the other questions you have asked."

There is something about this Mr. Brophy that inspires confidence, and I left his office believing that he should be called commissioner *for* the Indians.

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Next time one of you rockhounds finds an obsidian arrowhead on a field trip, you'll know more about it than Pliny the Elder in A. D. 77 or the many writers who followed him. Even as late as 1784 a naturalist in describing obsidian attributed to it characteristics which belong to marble. In this article Jerry Laudermilk tells what modern scientists have discovered about the conditions and processes which have produced obsidian, or volcanic glass. Although there still are some puzzling angles, they won't worry the rockhound, for most of the remaining questions involve the world of ions and molecules.

Glittering Stone of the Aztecs

By JERRY LAUDERMILK
Photos by Helen Laudermilk

DWELLINGS of the Old People once stood on a ridge overlooking the Hassayampa not far from the ranch house of the LK Bar. There, beneath the catsclaw and mesquite trees only a forlorn heap of "killed" or purposely broken metates and scattered sherds of pottery remained where busy people once had made a home. Now the only inhabitants of the lonely ridge top were a solitary quail on sentry duty and a pair of demonstrative chipmunks who watched while a harmless tenderfoot disturbed the stubborn Arizona soil with a pick and shovel.

It was a hard job for a green hand. The tools apparently had been made for a giant and the work went slowly. The result of three hours delving was a paltry excavation about knee-deep.

A search among the charred fragments of some prehistoric Arizonan's home revealed an arrow point. As a weapon this specimen was a coarse piece of work but its material touched off the trail of thought that has led to this story.

This was a rough example of the arrowmaker's art about two inches long by three quarters wide and a quarter thick. Shaped like a pointed oval it evidently had been made for heavy duty, to be shot just once as expendable ammunition. These are all common features of hastily made points but its substance was unusual—the result of an old quarrel between heat and cold and their fight for a vast pool of granite stewed to an incandescent soup in a Plutonic pressure cooker. After ages of infernal digestion with fire, superheated steam and tremendous pressure the white-hot concoction of melted silicates was disgorged from the throat of some volcano. At first it flowed in thin streams like a blazing river amidst a spray of fire, radiating destruction. Then cold pounced upon it and it congealed to the razor-edged symbol of sharpness we call volcanic glass or obsidian.

This material has been known to rockhounds since the dawn of the Old Stone Age. In those times geology was a utilitarian subject altogether since one of the first human needs was a tool with a cutting edge. Such tools could be made best from rock that broke into sharp-edged flakes like flint and chert. But of all materials for such artifacts the ideal tool-stuff was obsidian.

The Aztecs called this glittering stone *itztli*. A cult and a special goddess, *Itzpapalotl* (obsidian knife-butterfly) covered it with a haze of mystery and a certain amount of dread, for from this rock as black as congealed night were made the knives for human sacrifice to the monstrous gods of Mexico.

By what names earlier men in other lands had called this strange dark glass, we don't know. But the name we use today

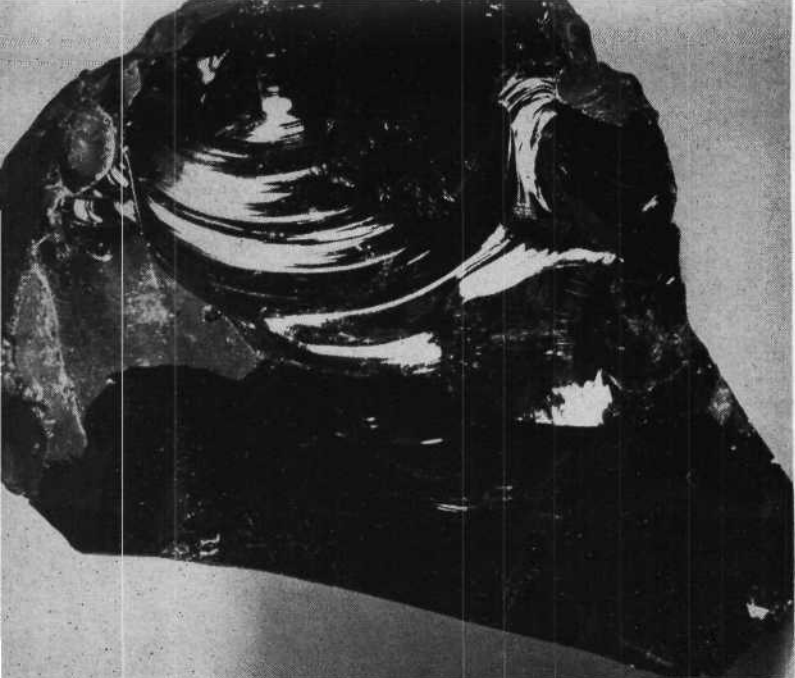


Some Aztec artist thought that the goddess presiding over obsidian might look like this brilliantly colored grotesque from the ancient manuscript, Codex Telleriano-Remensis. Redrawn by the author from Kingsborough's facsimile.

was coined by a garrulous old Roman with a strong bent for observation. In A. D. 77 when Pliny the Elder published his *Natural History* he declared that this rock first was described by a man named Obsius who discovered it in Ethiopia. Pliny himself calls it "obsian" or "obsian stone" but somewhere along the route of translation the extra syllable "di" crept in and the name became ob-si-di-an. Pliny's description fits the stone perfectly. He says it frequently was used for jewelry and even sculpture and that a statue of Augustus and images of four elephants in the Temple of Concord were made from it. During the Middle Ages the name sometimes was applied to other black stones like marble and dense basalt capable of a high polish.

Until rather recent times the science of mineralogy was largely guesswork based on rough field observations and lore handed down by the alchemists. Ideas about the composition of ores, minerals and rocks were of the crudest. Most identifications depended on the physical qualities of a specimen and only the roughest chemical tests ever were applied. If two samples of an ore showed a general resemblance they were likely to be considered as varieties of the same thing. So it was quite in order that as late as 1784 when the naturalist John Hill wrote his *History of Fossils* he confused obsidian with a kind of black marble from the Greek island of Chios. Among several curious statements he says that obsidian effervesces vigorously with aqua fortis (nitric acid), burns to a white ash and is too soft to strike fire with steel. These are all good reactions for marble or calcium carbonate but not for obsidian; in fact, these qualities are just the ones that obsidian lacks. Hill then gives an interesting description of real obsidian and remarks upon its ancient use for mirrors.

Actually, obsidian is a complex mixture of silicates of aluminum, iron, calcium, magnesium, sodium and potassium with more or less water and traces of rarer elements all present as components of a supercooled liquid. Before I explain what I mean by a supercooled liquid and tell how volcanic glass is



Black obsidian, the most perfect tool-stuff in the days before metal. Black color is due to microscopic particles of a black powder, apparently from iron oxide, scattered through a colorless glassy matrix. Specimen from Inyo county, California.

formed, it will make it more understandable if we first learn a little about crystals.

It is well known that the elements show pronounced likes and dislikes for one another and form permanent compounds according to strict rules. For instance, suppose you mix two pounds of iron filings with ten of sulphur and heat the mixture. The iron and sulphur will combine to make the compound ferrous sulphide, a dense black solid familiar to everybody who ever played with chemicals. But you won't have a dozen pounds of product; your total yield will be a little more than three pounds. Since only a fixed and definite amount of sulphur can combine with a given quantity of iron, the excess will burn up or remain as unused material.

Suppose you apply the same treatment to a small amount of aluminum oxide and a large volume of powdered quartz (silicon dioxide). If you heat the mixture hot enough there will be a

Red obsidian. Besides the typical black glass, obsidian sometimes is of other colors. This brick-red specimen owes its color to a scattered dust of hematite in a colorless matrix, has a more waxy luster than black obsidian. The sub-conchoidal fracture is typical. Specimen from Inyo county.



brisk reaction and the product will simmer down to a glowing liquid, melted quartz plus aluminum silicate, the mineral sillimanite in a state of fusion. At white heat, the necessary temperature for the reaction, the liquid will be perfectly clear like melted glass since the molecules of sillimanite are in actual solution just as a spoonful of salt is dissolved in a quart of water. In this case the excess solvent is the unused melted quartz. These two illustrations show why free quartz is such a common constituent of many igneous rocks although the rock itself is made up of silicate minerals; the quartz simply is excess quartz with nothing else to do but crystallize out and fill the gaps between the other crystals.

Most substances under favorable conditions separate from solution as crystals. A crystal is a solid having a precise geometrical shape which on careful examination is found to conform to one of six basic patterns. This plan or motif is a constant feature regardless of the size of the crystals. I can illustrate this point with a common example. Ordinary table salt (sodium chloride) crystallizes in the form of cubes. These cubes may range in size from tiny crystals visible only under the highest power of the microscope up to giants many feet in diameter. But whatever their size they all are cubes. In fact, with care you can split up a large crystal into smaller and smaller pieces each of which will be a perfect cube exactly like the original. X-ray studies of crystals show that the basic plan extends down to the tiniest identifiable molecule. This fine structure of a crystal is an essential requirement. Suppose you have a two inch crystal of the mineral halite (common salt) and a cube of glass the same size, they would look alike but one would be a crystal and the other not, since the glass cube would lack the necessary fine structure to qualify as a crystal. A crystal of a salt such as sodium chloride consists of an orderly three-dimensional arrangement of electrically charged atoms of the metal sodium and the gas chlorine; the sodium atoms carry positive charges and the charges of the chlorine atoms are negative. These electrically charged atoms are called ions (the chlorine atom with its charge is called the chloride ion). The pattern formed by the ions within the crystal is called space lattice.

Suppose you drop a crystal of ice cream salt (sodium chloride) into a glass of water; ions begin to leave the space lattice of the crystal and diffuse into the water and finally the whole crystal dissolves. It is a crude but useful conception to think of the ions as fitting into chinks between the molecules of water. In dilute solutions the ions are thinly scattered throughout the vastly more numerous water molecules.

If we boil our dilute salt solution it continually loses water through evaporation but the sodium ions and chloride ions are nonvolatile and remain behind. As more and more water molecules leave the evaporating solution we can imagine the ions of the salt as drawing closer and closer together until finally a point is reached where they again unite and build the space lattices of a new salt crystal . . . This is rather crudely put but makes a working basis for what comes next—crystallization from a hot melt.

Geologists don't know as much as they'd like about conditions within a molten magma. It is not certain whether the mineral constituents of a melted rock are present as ions or molecules—probably both exist together. At any rate, crystalline compounds separate from a slowly cooling mass of melted rock in a way analogous to crystallization from an aqueous solution, only in this case the solvent instead of being water almost always is melted quartz or a super abundant silicate mineral. In such a melted rock-mass the various ions and molecules are in terrific turmoil and as long as the solution stays hot, crystallization can't take place but if it begins to cool slowly the ions can begin to settle down to an orderly arrangement. The situation can be dramatized as follows:

Imagine a military drill ground just before assembly. Men are milling around haphazardly forming groups and again breaking up pretty much as they like. This represents conditions within a melted rock, the individual soldiers representing the ions and

molecules just before crystallization begins. Now suppose the bugler sounds assembly. All the buzzing round stops, men begin to flow toward their places in the ranks and soon what was a mob crystallizes into solid formations of soldiers. These orderly formations can be imagined as crystals of minerals—quartz, feldspar, mica, iron oxide, etc. The final crystallized army can now be compared to a piece of coarsely crystalline rock, say granite porphyry. Here I reach the point I was leading up to a few paragraphs back when I mentioned supercooled liquids.

Suppose we have the same milling gang of soldiers we had originally. Suddenly a terrific freeze strikes the parade ground; the drop in temperature is so abrupt that every man (ion or molecule) freezes fast in his tracks wherever he happens to be. The whole army now is a petrified mob without any crystalline structure. All the minerals that normally would have crystallized as large units still are present but scattered without any basic pattern as particles within a supercooled liquid, a glass, in this case obsidian.

Comparison of obsidian with a melted and suddenly chilled granite is logical although the chemical composition of obsidian varies somewhat. This has been shown by thousands of analyses of glassy lavas and other rocks from all over the earth. Furthermore, the fact that a crystalline rock can be melted and cooled to a glass and then the glass re-melted and cooled back to a crystalline rock again was proved experimentally by the famous geologist, Sir James Hall, more than a century ago.

In the latter part of the 18th century when the modern science of geology was being polished into shape, there was much speculation about the origin of igneous rocks. It had been contended by James Hutton, "a private gentleman" of Edinburgh and one of the founders of the science, that crystalline rocks had been formed from a previously molten magma. This was assumed to have cooled far below the surface of the earth under circumstances favoring crystallization. Hutton was not certain what these circumstances were but thought that pressure was one of them. At any rate, his theories were roughly pawed over by his opponents, particularly as regarded the action of heat. These critics declared that a melted magma would cool to a glass, not a crystalline rock. At this point of the controversy Hall concluded that the only satisfactory way to settle the point was to experiment. His experiments lasted off and on from 1790 to 1798. He took samples of whinstone, an ancient lava from Scotland, and samples from Vesuvius and from Mount Etna and kept them at an intense heat in the furnace of an iron foundry until they boiled. He then allowed the liquid rock to cool rapidly just as it was taken from the furnace.

His results at first appeared to favor the anti-Huttonians; his melted rock had cooled to a glass. But Hall was a careful experimenter and kept on with his work. He tried the effect of slow cooling upon his melts. The crucibles were taken white-hot from the iron furnace and "cooled" on a bed of glowing coals. This seems like a contradictory statement but actually represents a drop in temperature from possibly 1450 to 1550 degrees Centigrade to somewhere around 500 or 900 degrees. The fire was kept at this relatively moderate temperature for several hours and then allowed to die slowly down. Slow cooling had done the trick. The melts had "frozen" to fine crystalline masses and Sir James now could make either glasses or crystalline rocks from the same samples. Here we come to a point where it is pertinent to ask what conditions must exist for obsidian to form naturally.

Lava of course, has its origin in the molten magma at the very bottom of the lithosphere or stony crust of the earth possibly 40 or more miles deep. How the vast reservoir of heat, sufficient to hold all rocks in a state of fusion originated in the first place still is an unsolved riddle; perhaps it was left over from the beginning, perhaps it is due to radioactivity—nobody knows. But at any rate the molten zone is a region where conditions are unlike anything on the earth's surface. Here, at a temperature of at least 2,000 degrees C. molecules of metallic oxides, silica



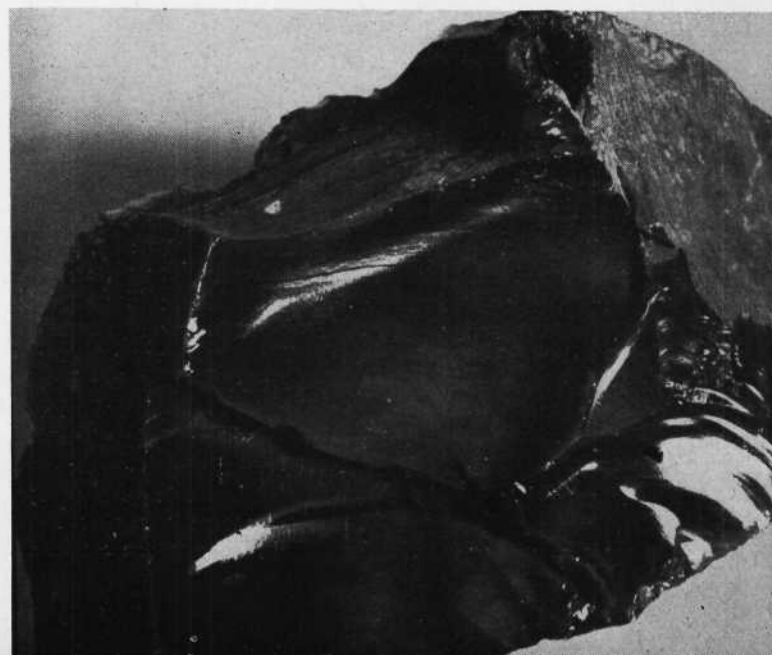
Cristobalite crystals lining vesicles in black obsidian. An uncommon form of quartz (SiO₂), formed at extremely high temperatures in the fluid rock. Specimen from Coso Hot Springs, California.

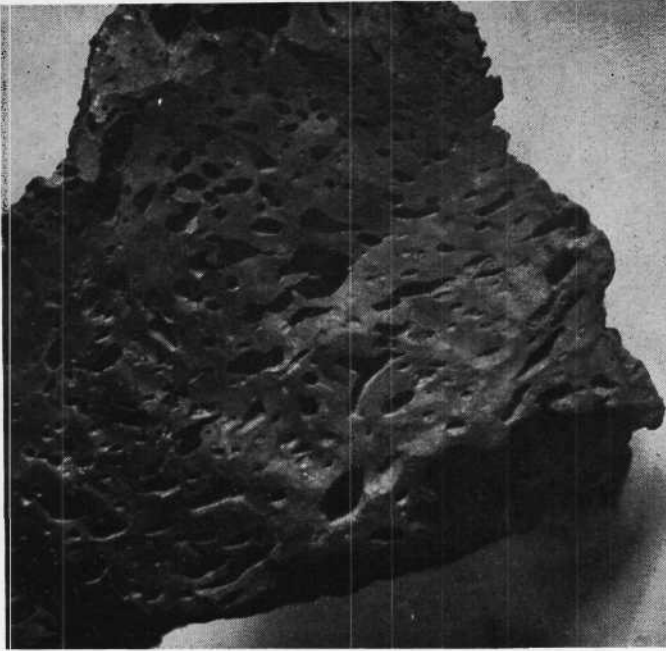
and water may make up something like a geo-chemical delirium. What this furiously battling mixture of ions and molecules would look like we don't know and probably never will. But the evidence of the seismograph indicates that it is more rigid than steel from enormous pressure, yet elastic.

At times, due to causes unknown, masses of the molten magma break through or melt their way into the strata of the outer crust. Here the fused material, no longer original magma but magma contaminated by absorption of lighter rocks from the upper crystal layers, forms vast structures of granite and pegmatite, dikes, domes and intrusive sheets. In these subterranean depths the molten rock has cooled but slowly and crystals of quartz, feldspar and other minerals formed as the incandescent mass congealed.

At other times a column of melted rock breaks through the crust and forms frightful rivers and lakes of boiling lava. These flow as spreading sheets and darting tentacles of fire. This glowing flood is overcast by a cloud of steam from water as it escapes

Iridescent obsidian. Steel-blue to bronze iridescence of this material makes unusually attractive specimens for the rock-bound. Sample from Mammoth mountain, about 25 miles south of Mono lake, California.





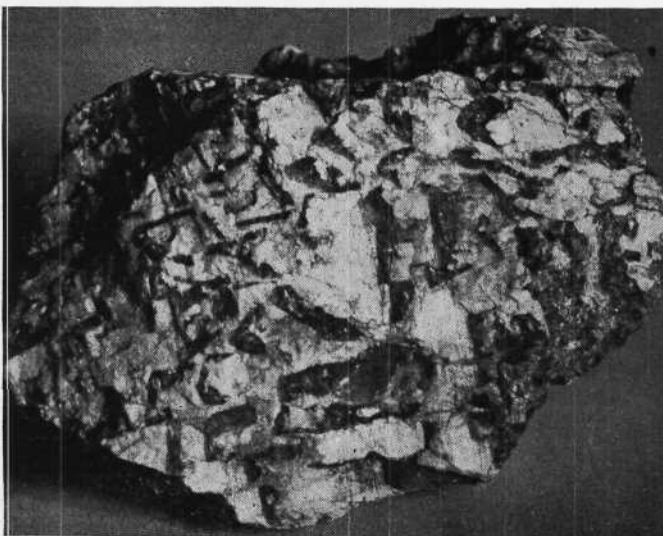
Vesicular lava. Moderately slow cooling of lava containing a great deal of steam causes this very common type of rock. Under more favorable circumstances the same rock could have hardened to a glass. Specimen from Pisgab crater, San Bernardino county, California.

from the liquid mass and the pressure eases in the air of the outer world. The lava, at first as thin as honey, thickens as it cools and much gas remains trapped as bubbles in vesicular basalt.

But it sometimes happens that most of the gases are cooked out of the lava while still fluid in the depth of the crater. It is now like the metal in a glass maker's furnace and when poured out some parts of the flow congeal too rapidly for free movement of the mineral molecules; these areas harden to obsidian.

Vast deposits of this wonderful material occur over many parts of the earth. Wherever early man found it he learned the secrets of its use. Always in demand it was traded to points

Pegmatite or graphic granite. This coarsely crystalline rock, the opposite extreme of the glassy texture of obsidian, has resulted from the slow cooling of magma at great depths. Pattern made by the quartz, dark areas, against the paler background, feldspar, is typical of this rock. Specimen from Juniper Flats, Riverside, California.



far from its source, material from the Rockies having been found in mounds of the Mississippi Valley. In Mexico it was a staple for weapons, tools, mirrors and jewelry, and among the Indians of northern California work in this material reached perfection. Sometimes enormous ceremonial swords were chipped from a single slab such as the blade in the Southwest Museum at Los Angeles. This masterpiece is more than 33 inches long. But how the craftsmen and artists of the stone age and of more recent times shaped this rock with primitive tools is another story.

TRUE OR FALSE

Desert Quiz fans will find some easy ones in the

list this month. But there are others which will require a familiarity with the history, geography, botany, geology and lore of the desert country. The average person should get 10 correct answers. Fifteen out of the 20 is a high score, and only those super-students of the desert will answer 18. Answers are on page 36.

- 1—Woodpeckers often drill holes and make their nests in Saguaro cactus. True..... False.....
- 2—Salt River valley in Arizona receives its irrigation water from the reservoir behind Boulder dam. True..... False.....
- 3—Scientists have positive evidence that giant sloths once roamed the desert in Nevada. True..... False.....
- 4—Between the mouth of the Colorado river and Grand Canyon there are five dams in the stream. True..... False.....
- 5—The capital of New Mexico is at Santa Fe. True..... False.....
- 6—Capt. Juan Bautista de Anza who led the first white colonists to California overland, crossed the Colorado river at what is now Ehrenberg. True..... False.....
- 7—The Great White Throne is in Bryce Canyon national park. True..... False.....
- 8—The sidewinder is a venomous snake. True..... False.....
- 9—The aspen is an evergreen tree. True..... False.....
- 10—Obsidian is a form of volcanic rock. True..... False.....
- 11—Date palm trees grew wild in certain parts of the American desert before the coming of the white man. True..... False.....
- 12—An atlatl was used by Indian tribesmen for grinding turquoise. True..... False.....
- 13—Valley of Fire is a state park in Utah. True..... False.....
- 14—Phantom Ranch is located in Grand Canyon at the foot of Bright Angel trail. True..... False.....
- 15—Showlow is the name of a town in Arizona. True..... False.....
- 16—The first Powell expedition down the Colorado river started from Green River, Utah. True..... False.....
- 17—The Hopi Snake dances are held annually beginning August 20. True..... False.....
- 18—The book, *Apache Gold and Yaqui Silver*, was written by J. Frank Dobie. True..... False.....
- 19—Wood from the Joshua tree is used for making artificial limbs. True..... False.....
- 20—Desert tortoises hibernate during the winter months. True..... False.....

Wild Palms of the San Ysidros

By RANDALL HENDERSON

IN MARCH 1774 when Captain Juan Bautista de Anza made his first historic trek across the Southern California desert the Indians who sulked behind rocks in Coyote canyon attempted to kill his horses. They failed, partly due to the alertness of Anza and his companions, and partly because of the inferior quality of their bows and arrows.

Father Francisco Garces who accompanied Anza, carved a record of the attack on a willow tree at Santa Catarina spring. That was 171 years ago and the willow has long since disappeared. Also, the Indians, whom Father Pedro Font later described as "so savage, wild, dirty, disheveled, ugly, small, and timid, that only because they have human form is it possible to believe that they belong to mankind," likewise have gone to their happy hunting grounds where it is hoped they are better fed and washed.

But Santa Catarina spring is still there—flowing 200 miner's inches of fine mountain water, and supplying moisture for the most impenetrable jungle of willows to be found on any desert.

Although Santa Catarina is within the general area of the Anza Desert state park, the spring is subject to a private filing made in the days before anyone thought of setting this rugged desert region aside as a public recreational area.

My story is concerned more with the willows than with the spring. For those willows at present are an impassable barrier to one of the most gorgeous sectors of the 400,000-acre park—that is, impassable to motorists.

Capt. Anza mentioned the willows in his diary. There are three groups of them in Coyote canyon—known as Lower, Middle and Upper Willows. Santa Catarina spring supplies water for the Lower Willows.

My first acquaintance with the Lower Willows was in 1934. At that time prospectors and cattlemen had a wagon trail of sorts up the canyon, following very closely the route Anza had blazed in 1774.

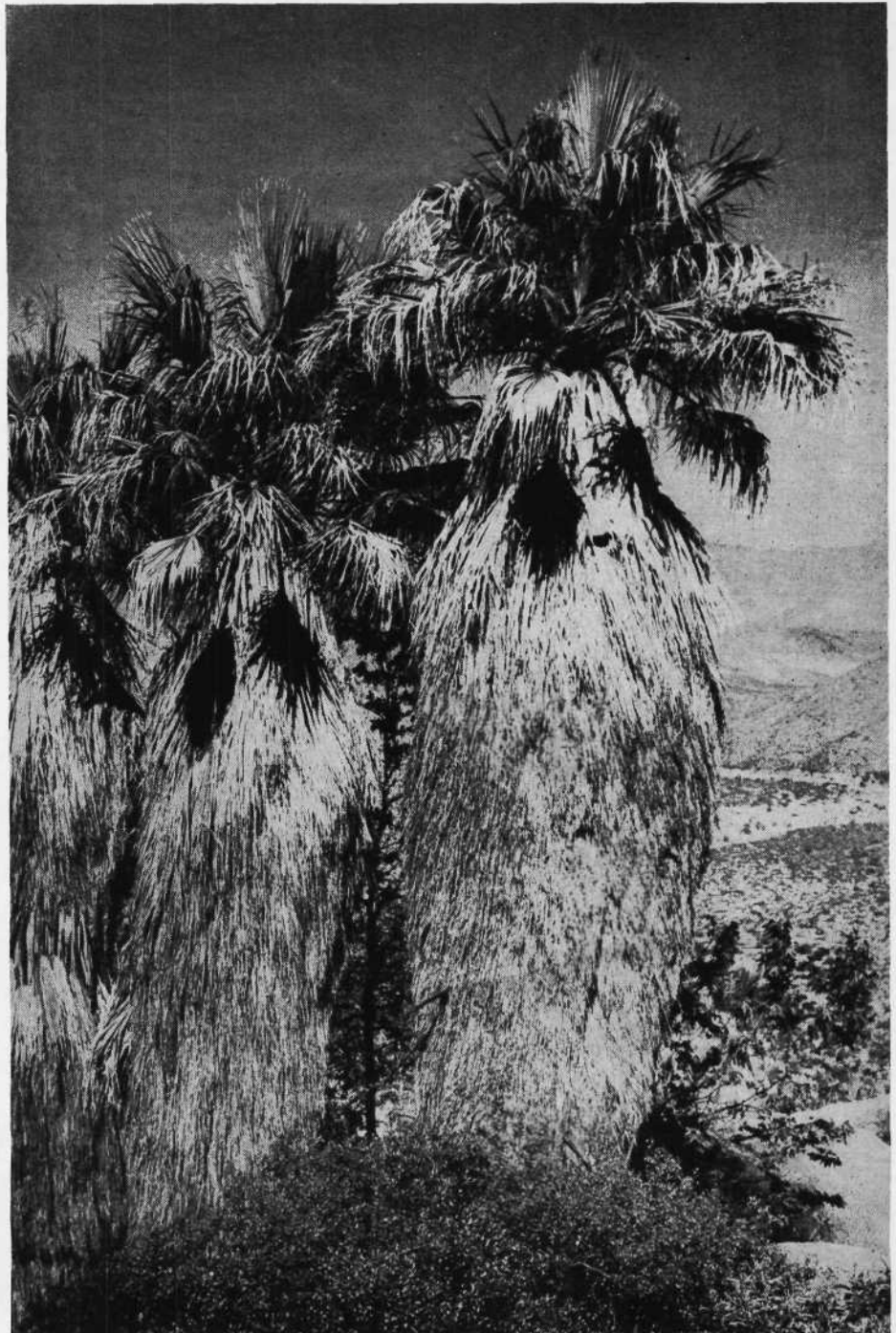
Wilson McKenney and I undertook to follow this historic trail in our jalopy. We got through—but only after we had spent most of a morning pushing and prying our car through that wilderness of willow trees. Then, a few months later a cloudburst torrent came down the canyon leaving a jumble of rocks below the willows that closed the route to all traffic except hikers, cow ponies and goats.

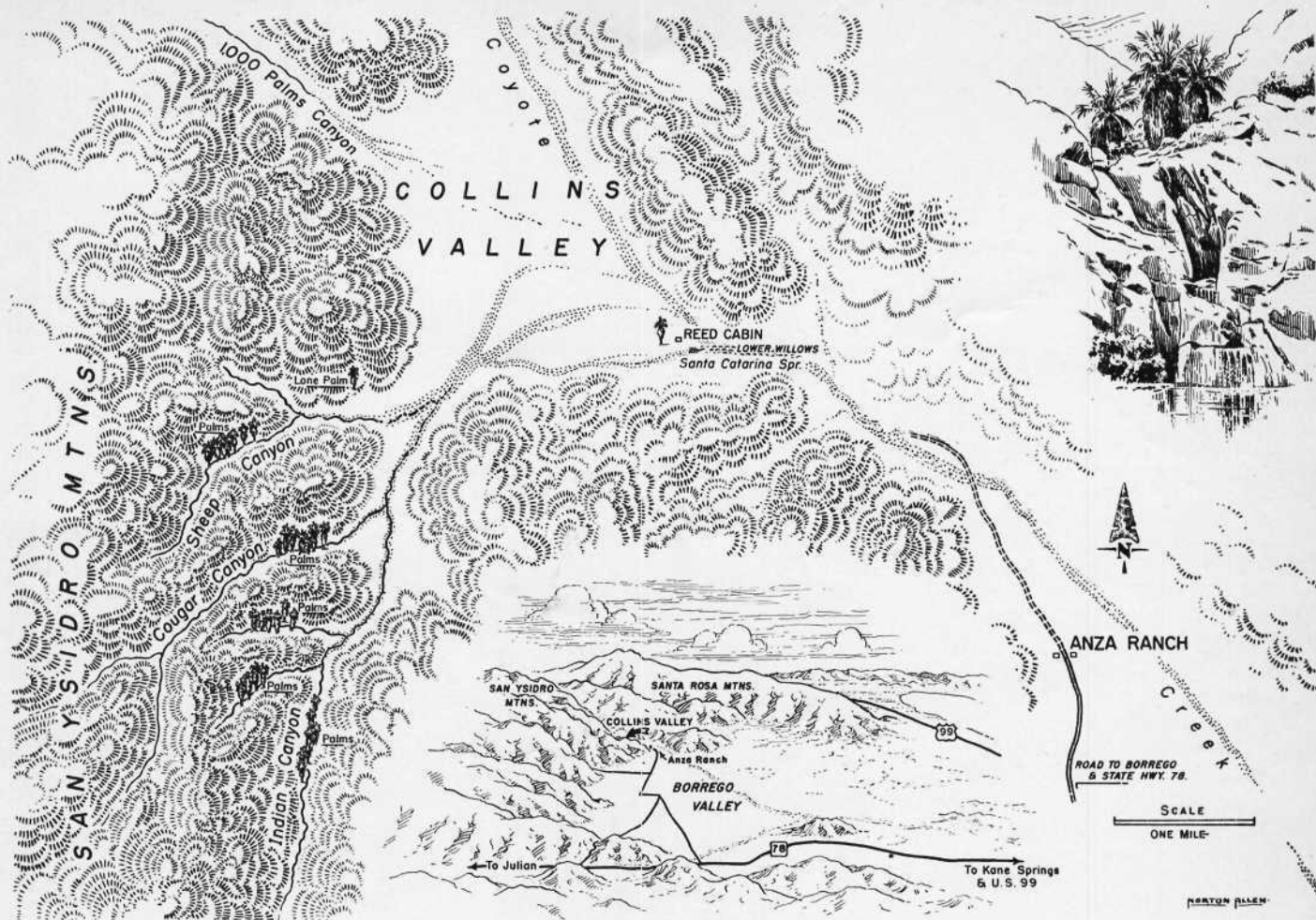
Recently, Arles Adams and I, loafing

This is just a preliminary report, writes Randall Henderson—just a glimpse of the rugged scenic beauty to be found in a little known group of canyons in San Ysidro mountains where palms grow wild amid splashing waters that tumble over huge granite boulders. Capt. Juan Bautista de Anza passed near this spot 171 years ago, but Anza and his soldiers and settlers on their way to San Francisco had no time for side trips. And so it remains for the Americans of this generation to discover and explore this rugged terrain in Anza Desert state park.

Photographs by Arles Adams
and the author

*These full-skirted veterans grow among the boulders in Sheep canyon.
Collins valley in the background.*





around a campfire one evening in another part of Anza park, brought up the subject of Coyote canyon. We wondered if we couldn't take his spider-legged jalopy, sans fenders and top, over the rocks and through the forest of willows.

Neither of us had visited Coyote canyon for four years. We knew we would be in for rough going. But there are some palm canyons in Coyote canyon's tributaries and I had wanted to revisit them to get pictures and data for *Desert Magazine* readers. So we decided to make the attempt.

We started for Coyote canyon early one Saturday morning in April this year. Going through Borrego valley we stopped at the Anza ranch where water from Santa Catarina spring is being used to irrigate a large acreage of winter tomatoes and early grapes.

The Anza ranch was homesteaded in 1909 by "Doc" A. A. Beatty who filed on the water in the spring. More recently, the ranch together with several hundred additional acres in Borrego valley, was purchased by A. A. Burnand, vegetable grower and shipper.

Burnand was not at home, but Lawrence Way, ranch foreman, intimated that anyone who would try to take a car up Coyote canyon should be examined by a sanity board. "We've a half dozen saddle horses that need exercise out in the corral," he

said. "You'd better leave your car and buck those willows in a saddle."

We thanked him for the offer, but we wanted to have a look before we discarded our four-wheeled tarantula. Anyone could ride a horse up that canyon. We wanted to see if it could be done in a car.

From Anza ranch house to Lower Willows is three miles—rough crooked going, with frequent fords across the irrigation canal which brings water from the spring down to the ranch. At the end of the three miles the trail ended abruptly on a sandy bench with a 12-foot drop off to the bottom of a creek bed strewn with boulders.

We might have found a way down off that bench, and with a crowbar and shovel and much work we probably could have opened a passage through the boulders—but up ahead, only a few hundred yards, were those willows! They've grown bigger and thicker with the passing years. They completely block the canyon for nearly a half mile. They are growing in a swamp criss-crossed with channels. The mud and water ranged from ankle deep to knee deep. Lawrence Way was right. No sane human would try to take a car through that willow-forested morass.

We returned to Borrego valley for an overnight camp, and early next morning, with Burnand and Way as companions,

we wrangled the horses through the willow jungle to Santa Catarina spring.

Above the spring there is a wide bulge in Coyote canyon, known as Collins valley. John Collins and his wife and three children took up a homestead here in 1897 and built a cabin. With the spring as a source of water they planned to grow fruit and winter vegetables. But the cattlemen who were running stock in Coyote canyon resented their coming, and after years of persecution during which his home was burned, Collins gave it up.

Later Joel Reed filed on the land and built a cabin which is still standing, although it has been unoccupied for years.

A conspicuous landmark on the bench where the cabin stands is a tall Washingtonia palm that may date back to the time when the Collins family lived here. Santa Catarina spring bubbles from the floor of a nearby ravine. You can hear the water—but unless you have the hardihood to penetrate a dense jungle of trees and wild grapevine, you cannot see it.

Burnand and Way bade us goodbye at the cabin, for there was work to be done on the ranch. Arles and I followed a cattle trail through the mesquite which surrounds the cabinsite and emerged eventually on the great creosote-covered bajada that extends from the floor of Collins valley back

to the base of the San Ysidro mountains on the south.

To my knowledge there are six canyons tributary to Collins valley having native palm trees and running water. Three of these canyons have their outlet directly into the valley and are more or less known to Anza park visitors. They are Indian, Sheep and Thousand Palms canyons. The story of Thousand Palms, written by Hulbert Burroughs, appeared in *Desert* of September, 1941. But there are three other canyons, hidden deep in San Ysidro mountains, which are practically unknown to desert travelers, and which in my opinion are of greater scenic interest than the three I have named. These are Cougar canyon and two unnamed tributaries of Indian canyon.

There may be other palm oases in this rugged San Ysidro area. But there is no record of them, and I have not yet explored the region thoroughly enough to be sure.

It was eleven o'clock when Arles and I had covered the three miles from Santa Catarina spring to the foot of the San Ysidro range where Sheep and Indian canyons come in from the southwest and southeast and join channels on the bajada.

It was evident we would not have time to visit all the palm canyons in one afternoon, so we divided forces. Arles tied his horse to a Palo Verde tree and started the rocky climb up Cougar canyon, which really is a tributary of Indian, while I continued along the cattle trail that led up to the water in Indian canyon.

There is nothing very spectacular about Indian canyon. For a desert arroyo, it has an exceedingly dense growth of chaparral and trees and a fine stream of water. There are only seven palms in this canyon, and they are growing in such dense thickets of cottonwood, mesquite and shrubbery as to make photographs impossible.

It is in the two unnamed tributaries which enter Indian gorge from the west that I found palm oases which I am sure will delight visitors to Anza park in future years.

One of them might properly be named the Canyon of the Hidden Springs. Far up on the rocky slope on one side are seven or eight tiny clusters of mature palms, their green fronds glistening in the sunlight against a background of drab grey rock. There are not more than two or three or a half dozen in each group, and they cling so closely together it is impossible to count them without climbing the slope to examine them closely.

There is no surface water coming down the slope where these palms grow. But you may be sure there are underground springs at their roots. Otherwise they would not be growing there. They, or their predecessors, probably date back to a period when there was much water on this mountainside—perhaps numerous springs gushing from

among the rocks. There is still a clear stream in the bottom of the canyon.

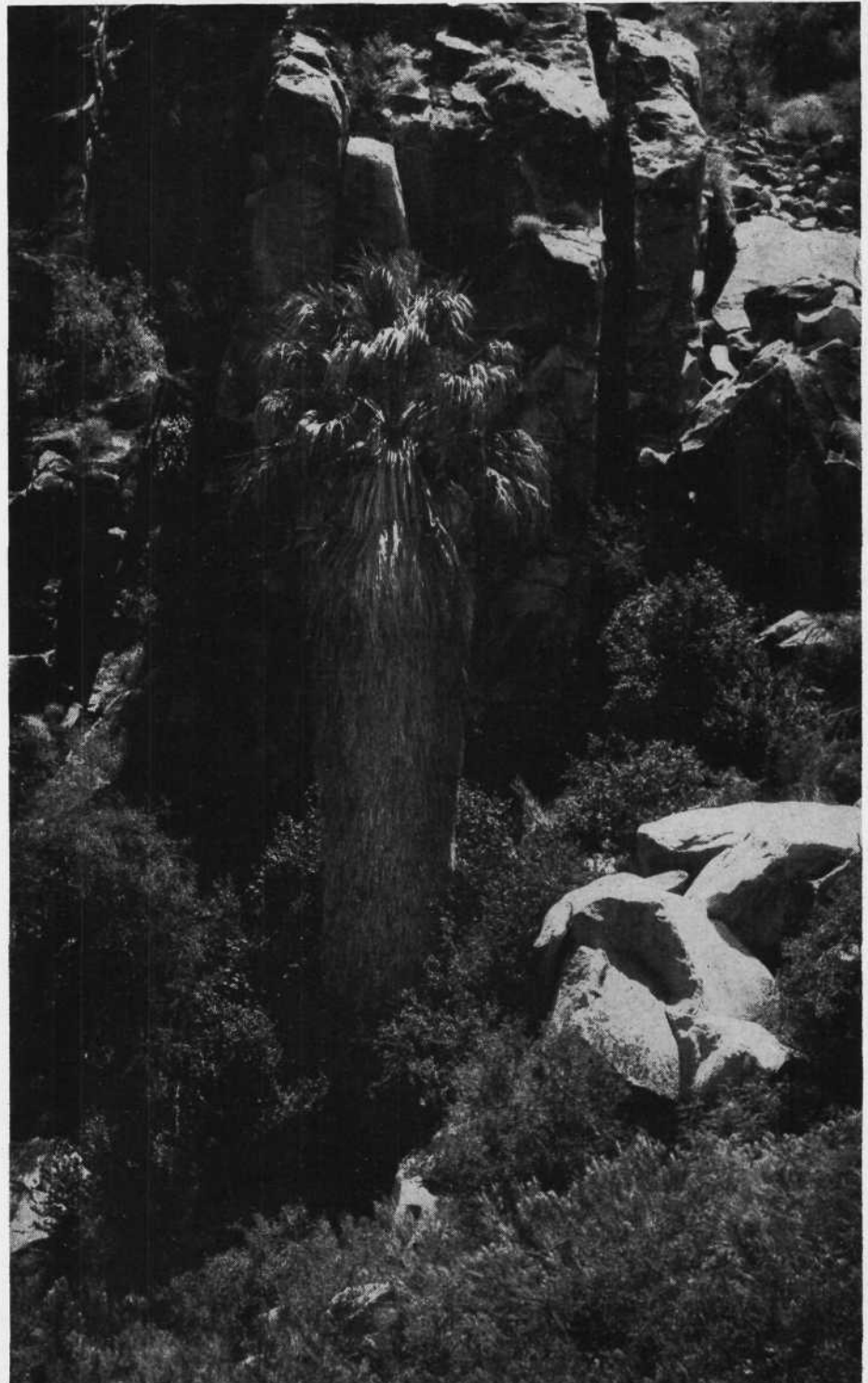
This gorge is too steep and rocky for a horse, and I climbed the last half mile on foot. But it was worth the effort. This remote canyon is a tiny world of its own—a very peaceful little world. The only sounds here are the wind rustling through the dry fronds overhead, the singing of the birds that come here to drink and bathe and make their nests, and the music of water tumbling over boulders in the creek.

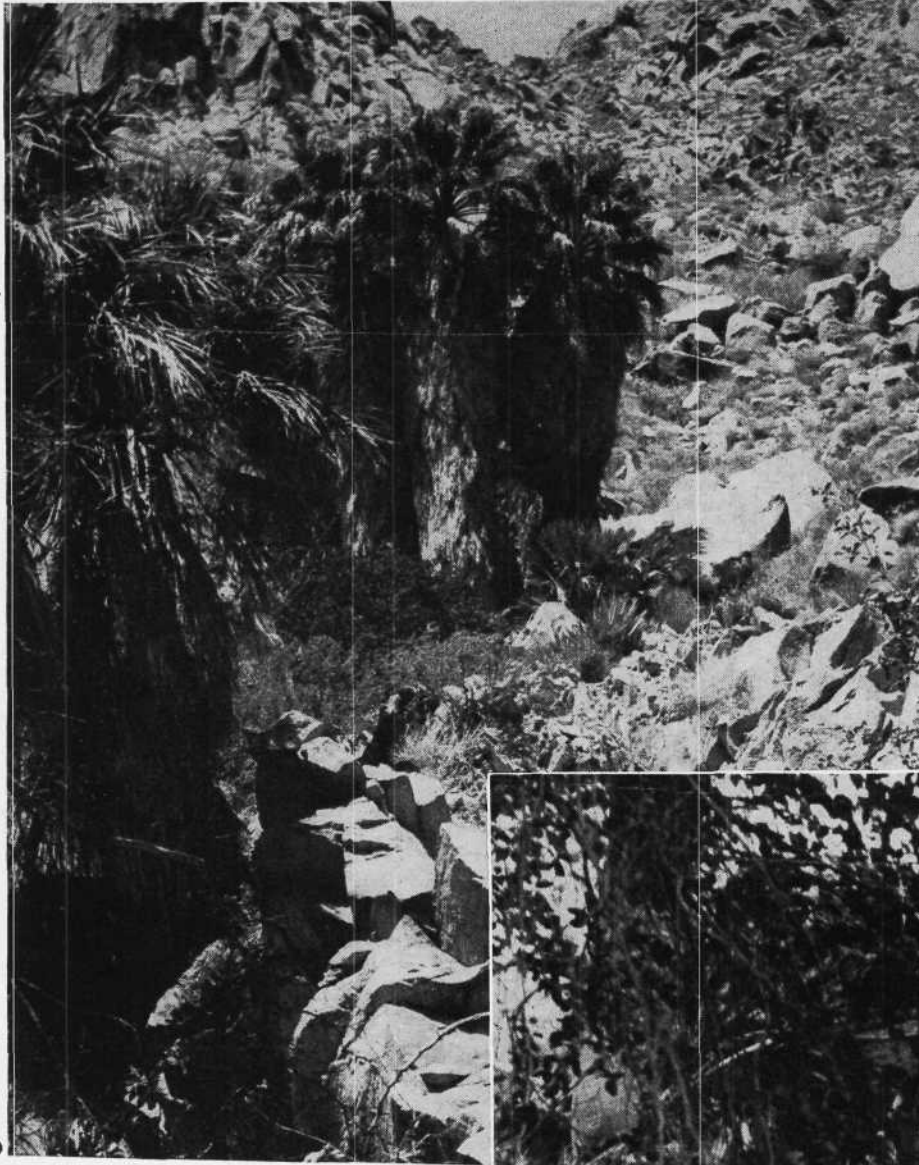
If the plans of the park authorities are

carried out, sooner or later there will be a paved road down Coyote canyon—making this San Ysidro mountain recreational area accessible to park visitors. But because of its isolation and the ruggedness of its terrain, the remote Canyon of the Hidden Springs probably will remain a sort of limited access area—reserved for those who are willing to pay something extra in physical effort for the privilege of enjoying its tranquil splendor.

I did not have time to follow this canyon to its source. I would estimate there are

In Cougar canyon—every palm is a picture in this rugged gorge of the San Ysidros.





One of the palm groups in Cougar canyon.

less than 100 palms. But it is one of those cases where every palm is a picture.

Returning to Indian canyon, it is only a few hundred yards up the cattle trail to the point where the second of the unnamed tributaries comes in from the west. And that also will have to await a more thorough exploration at a future date.

While I was spending the afternoon deep in the San Ysidro range, Arles Adams was having a grand time scaling the rocks and waterfalls in Cougar canyon. He counted 32 palms in that gorge, but lacked the time to follow it through to the end. There is a fine stream of water in Cougar, with a series of scenic waterfalls framed in stately Washingtonias. In this canyon one needs a rope for security in scaling the almost vertical walls that rise in gigantic steps toward the ridge behind.

In a hurried trip up Sheep canyon we counted 26 palms, which is two more than I recorded there eight years ago. Sheep

canyon also has a fine stream of water tumbling over great blocks of granite that make climbing very difficult. If the park authorities later budget funds for a foot trail in this area, Sheep canyon would be the logical selection for one of those trails. This is the most accessible of all the palm oases in the area I am writing about. It would require only a half mile hike from the floor of the desert to this wild jumble of palms and boulders and waterfalls. And I can think of no more delicious experience on a warm summer day than a palm-shaded seat on a rock in the spray of one of those falls.

While there are streams in these palm canyons the year 'round, none of this water normally reaches the floor of the desert as a surface flow. It tumbles over the rocks among the palms and then disappears in the sand down toward the mouth of the canyon. It is quite possible

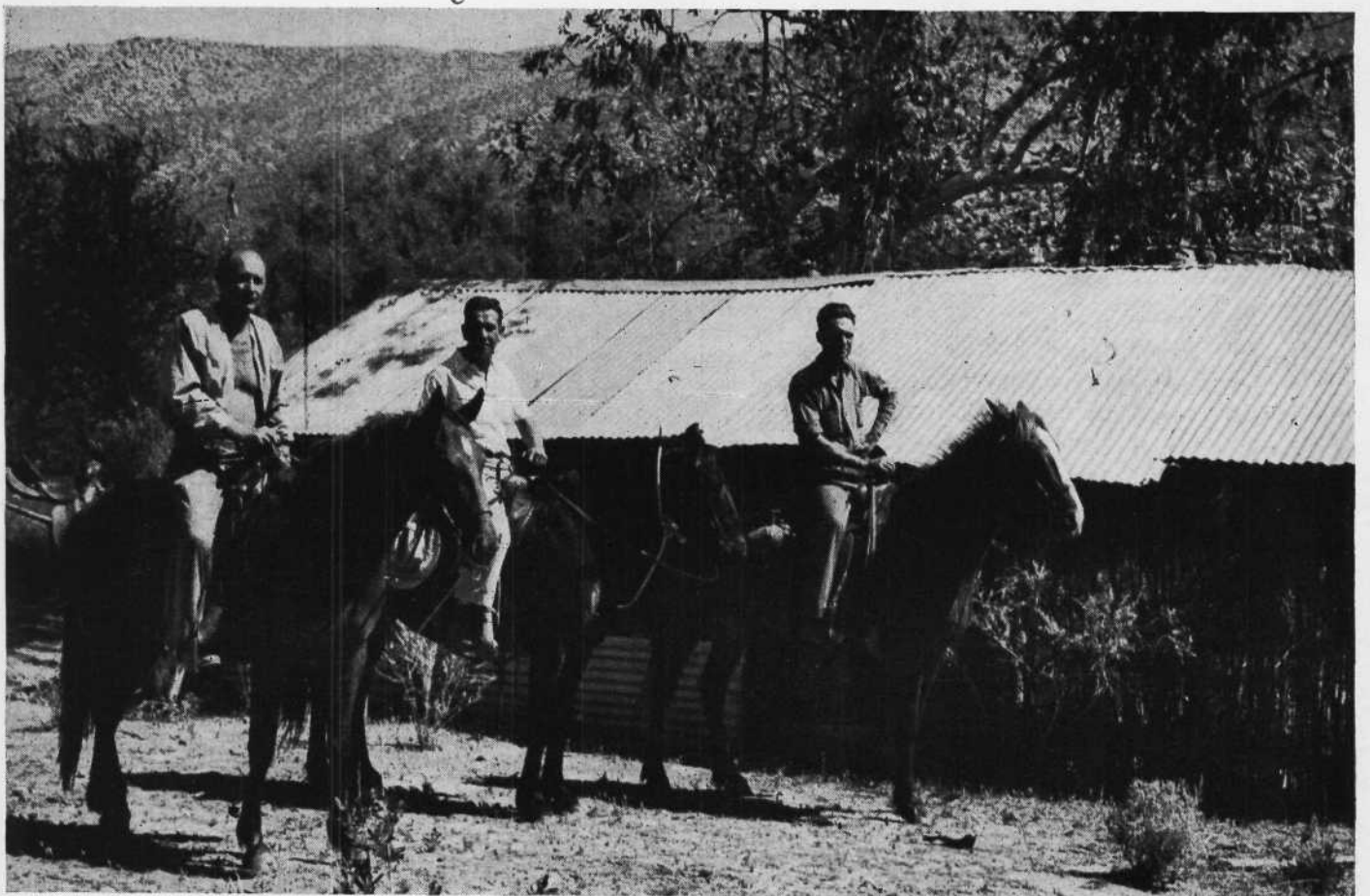
A seat in the spray of this Sheep canyon cascade is reward enough for the steep climb to this palm oasis.





In the Canyon of the Hidden Springs the wild palms grow in little clusters far up on the side of the granite slopes.

At the deserted cabin on Joel Reed's homestead near Santa Catarina spring. Left to right—A. A. Burnand, Lawrence T. Way and Arles Adams, companions of the author on the Coyote canyon trip.





Entrance to Indian canyon. Looking at the San Ysidros from the floor of Collins valley one would never suspect that hidden in these barren desert mountains are some of the most charming palm oases on the American desert.

that the generous fountain of water at Santa Catarina spring, three or four miles away, is served by underground channels from the streams in these palm canyons.

A conspicuous landmark guards the entrance to Sheep canyon—a lone palm tree growing on the western mountain slope above the bajada, a native *Washingtonia*, dwarfed in size but obviously a veteran. It is an outpost, on perpetual duty—a very unusual sentinel because it extends to each visitor a silent invitation to explore the fastness of the canyon beyond.

It was nearly dark when Arles and I returned the horses to their corrals that night. Five palm oases are too many to cover in one day. I hope future visitors will have more time to enjoy the peaceful luxury of those rocky oasis retreats than we had on this trip. But I'll be going back there. In the meantime I will ask Desert readers to regard this merely as a preliminary report on the wild palms in the San Ysidro mountains.

Each of those canyons—Indian, Cougar, Sheep and the two unnamed oases deserves a more detailed description and more adequate pictures than are presented at this time. And since this is park country—those palm canyons are to be reserved for the enjoyment of you and me and other Americans who love the desert wilderness.

Sez Hard Rock Shorty of Death Valley . . .



By HARRY OLIVER

Outside the Inferno store the wind was howling, and the air was so thick with sand it was impossible to see the hitching post 10 feet from the door.

"Good day to wash the kitchen pans," remarked Hard Rock Shorty as he emptied the sand out of his corncob and refilled it from his old buckskin pouch.

"Don't take no water for dish-washin' this kind o' weather," Shorty explained. "Jes hold the skillet an' things outside the door an' the wind'll scour 'em clean.

"Reckon some folks is glad to see all this wind ablowing, 'specially from the east this way. I'm thinkin' about Arkansas Joe who has that lit-

tle patch o' garden down Mojave river way. Arkansas calls hisself a dirt farmer. But shucks, there ain't enough dirt in that homestead o' his'n to grow a potted tulip. Mostly all sand.

"But Joe keeps a tryin', with what water he can raise with that one-hoss pump he's rigged up. He's away late with his farmin' this season. Y'see every winter the wind starts blowin' from the west, and blows most o' Joe's farm away. A couple o' months later the wind changes and blows from the east.

"Joe's been frettin' a lot lately. The winds is late and he cain't start his spring plowin' 'til his farm blows back."

Usually when the South family returns from an all day exploring trip they climb back up to Yaquitepec loaded with fire wood and perhaps a miscellany of "specimens." But this excursion was different—it took on the form of a discovery. Many times they had found evidences of the Indians who once had called this desert mountain home. But on this trip they discovered the ruins of an ancient dwelling—and in it fragments of a type of pottery not made by the Indians who were native here. This is Marshal's account of the discovery of House Forgotten.

Desert Refuge

By MARSHAL SOUTH

THE SUN sparkled upon the mountain. Against the gleam of the desert sky, flecked by a few lacy veils of white that had been flung aside by the waking dawn, the first blooms of the ocotillos swung in splashes of scarlet. Through the swaying junipers the desert wind walked, talking to itself and crooning snatches of forgotten songs as it plucked at the harp strings of the wire grass. "Come with me," whispered the wind. "Come with me and I will show you something. Come."

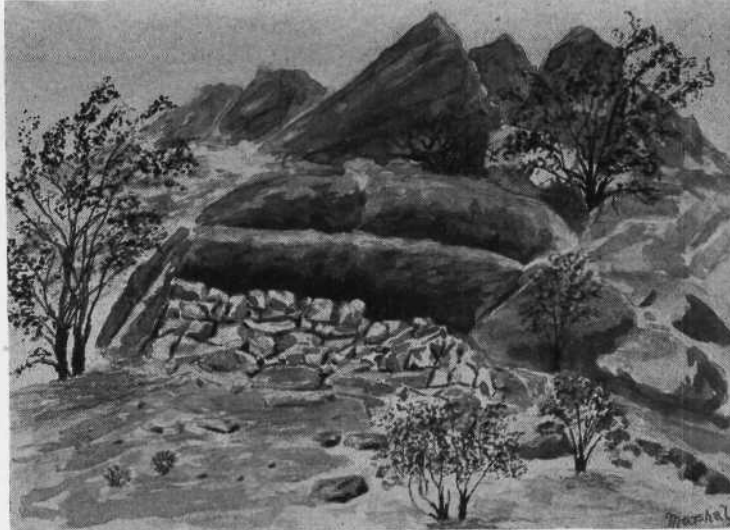
And the tall dry shoots of the mesquites swayed together in approval and the new blooms of the buckwheat nodded their heads: "Yes, go," they counseled. "It is too beautiful a day to stay at home. And perhaps you will find something. Go!"

So we took a canteen of water and a little package of food and shut the door of Yaquitepec behind us and set out upon the heels of the wind, which had wandered away down the ridges and was calling to us from between the rocks. The white sun-warmed gravel and the sloping surfaces of the granite rocks were pleasant beneath bare feet. High overhead in the clean blue of the sky a giant airplane forged westward, shattering the silence with the jarring din of its four motors. But on a swaying wand of ocotillo on a ridge beside us an oriole perched unconcernedly and poured forth a trill of liquid music.

We tramped on, following the wanderings of the wind and the glad notes of the orioles and the waving banners of the ocotillos. The desert had settled to its glowing pattern of forenoon gold. The yuccas threw pools of jetty shade. Upon the ridges the black trunks of great bigelow chollas stood like savage sentinels, each crowned in a sun-flamed mop of bristling spines. In the far clefts and canyons lurked weird deeps of purple shadow and across the patches of white gravel between the mescal clumps startled whiptail lizards streaked from before our feet. Sunshine and vast space and an unspoiled wilderness of rock and thorn and glowing earth.

We had started without destination. But after a while, as we wandered on, pausing often to pick up fragments of stone or to admire some new desert growth or to peer into the nests of cactus wrens, we became aware that we were following an old trail. There were only dim traces of it here and there, but it was a trail for several times Rudyard picked up chips of weathered pottery. And once, by a boulder overgrown in a tangle of chollas, we came upon a place where someone long ago had dropped an earthen jar—an accident attested to by several large sherds, including one that had formed part of the lip. The fragments were worn with age. How many desert suns, we wondered, had risen and set since the dim day when that jar had slipped from the brown fingers that had been carrying it.

We made no attempt to follow the trail traces. It would have been useless, they were so old and dim and infrequent. The desert, especially in the vicinity of Ghost Mountain, is full of these phantom footpaths, that seem to begin nowhere and to end in the same baffling manner. We came out presently upon the thin



This is Marshal South's watercolor sketch of the old Indian ruin they discovered among the desert rocks.

thread of a tiny dry wash. And there, just up the opposite slope, among a scatter of creosotes and huge boulders stood "House Forgotten."

It wasn't much of a house—not after the manner of those mysterious ruins left by the cliff-dwellers. Even when it had been occupied, it could never have been anything more than a rather crude shelter. But to someone, or some family, it had been home. And to any home, however crude, there always is an aura of sentiment. In the age-old stillness of the desert which shimmered around us in the hot glare of noon, we approached it in hushed excitement.

The front wall, crudely piled of rough dry stone, had slipped and collapsed. But as we made our way up the dim trail, we could see signs enough that the house had served as a human shelter for quite a long time. Pottery fragments were abundant; the pathway, though dim and age worn, had seen plenty of traffic in its time, and the big rocks that had been rolled in to fill gaps or to reinforce the wall spoke plainly of a great deal of expended energy. Like all such places it had its atmosphere—its feel of the past. And while the "feel" of this old, forgotten dwelling was different and less haunted than that of the isolated little cave which we had discovered in the hills, it nevertheless was very definite. In the silence of the desert noon the past hung over it heavily.

There was no roof to the dwelling. In the beginning the reason for its construction had been a low, overhanging projection of rock, before the ready-made shelter of which the original builders had reared the loose-stone wall. Probably the space between the edge of the ledge and the summit of this wall had been spanned at one time by yucca trunks and thatch, as is suggested by remains that we have found in other places. But of this roofing no trace save a short and very ancient fragment of yucca trunk—which may or may not have formed part of the original beaming—remained. Upon the drifted earth within the house, where a litter of packrat sticks and thorns lay thickly collected, the noon sun beat down unobstructed. Only under the overhang of the natural rock was there a ribbon of shade. And here, in places, the scorch of ancient fires still showed on the cave-like wall and roof.

As the first hush of awed strangeness gradually passed from us we went to exploring. In the other cave—the lonely little cavern of the canyon—there had been every reason to feel that the crude little shelter was also a tomb. Here however there was no such insinuation. So in the sunshine and silence, stepping cautiously (for packrats have a genius for collecting the most villainous thorn clusters) we spread out to see what we could find.

On top of the overhanging ledge, that had served partly as a roof, there was a mortar hole worn into the rock. And here, evidently, members of the family had done some of their pounding of mesquite beans and other seeds. Down the slope a little dis-

tance from the house there was another mortar hole. But this had been made in softer rock and passing years had almost weathered it away. Near the house we found an ancient fragment of bone, too weathered for identification, but probably a piece from some slain mountain sheep. And inside the house, in crannies under the overhang of the rock Tanya discovered some large pottery sherds. By the side of the wall, at a point where, when the roof had been in place, had been the entrance to the dwelling, lay a nicely rounded stone used in the preparation of roasted mescal and fibers. How long it had lain there, carefully set down by its last user, we could not guess.

But our greatest finds were in the line of pottery. Not in size—for all fragments were relatively small—but in significance. For, at this site, were types of pottery which we never before had found. Wandering back and forth over the slopes in front of the house both Rider and Rudyard picked up chips of a red clay earthenware which had been carefully coated and polished with a white clay finish. This had been laid on and worked before firing. And the white glaze polish had formed a perfect bond with the body material, a finish which the passage of all the succeeding years had been unable to mar. This was a find important enough, of itself. But Victoria, grubbing about cautiously among the packrat spine litter on the house floor, discovered a very thin fragment that evidently had been part of the upper side of a small bowl. This was beautifully fashioned—as thin as any modern chinaware—and though obviously handmade was almost as symmetrical as though thrown on a potter's wheel. Around the rim of the bowl—or rather that portion of it which the fragment represented—had been painted a band of white. A small streak of white still showing on another edge of the sherd showed also that the white design had been carried to other sections of the bowl.

The discovery of this white polished, and also the decorated ware, produced a good deal of excitement. The ancient Indians of this section did not decorate their pots. And except for some small scratched designs, found once upon a fragment of a storage olla, we never before had encountered any attempt to beautify pottery. The find set House Forgotten in a class by itself. For while it is probable that the dwellers of this little desert home did not make the pots themselves—the ware in both instances being of different body clay to that of pots fashioned locally—still it is obvious that they must have obtained the ware either by trade or from visiting friends.

We are not "diggers." We have little sympathy with those whose hands in curiosity pry into graves and tear up the ruins of abandoned dwelling places. So we did no trenching and turning of the earth, either in the sun drenched floor of House Forgotten or in its vicinity. We did search for the spring which we surmise existed somewhere close by. But the surface of the earth changes with the years. And faults in the subterranean rocks close. The desert spring from which the dwellers of House Forgotten filled their treasured white polished olla no longer exists.

It was late when we left, for after we had done our exploring and picked up our pottery fragments and hunted for springs and eaten our lunch there was still a sketch to make. And after that a good deal of sitting around on vantage points, soaking in the silence and the shimmering stretches of desert view.

The canteen was lighter on the homeward march. Which was an advantage. But not much had been gained by the emptying of the food sack. For Rudyard and Rider promptly annexed it as a collecting bag in which to carry home all manner of specimens—stones and odd sticks and seed pods and pottery chips and skeleton sections of ancient Bigelow cholla trunks. Victoria, too, added industriously to the collection, pattering here and there in search of treasures. On one of these side excursions she was thrilled to discover in a low bush the perfectly concealed nest of a pair of desert sparrows. In the beautifully woven little home reposed three tiny white eggs, from which—having permitted us only the hastiest of glances—Victoria

shooed us all away. "Hurry," she said. "Let's all go away quick so the spawwows can come back. I don't want them fwightened."

The desert was waking to the cool of the evening. Under the buttes and out from the deep gorges the shadow dancers were already shaking their sable mantles. A long way off an investigative coyote lifted his quavering note. The ravens were flopping homeward, flying heavily and commenting upon our progress with sardonic "wauks." A stubby tailed rock python, his glassy-blue metallic length half out from the protection of a mesal clump watched us as we passed and flickered a speculative tongue. Down a tiny, well worn chipmunk trail, an old brown tarantula moved, while from beneath a gnarled juniper a soft-eyed little antelope squirrel sat up from its meal of berries and squatted erect upon its haunches, watching like a friendly elf in a fur coat, the procession of queer two-legged beings that tramped past.

Our friend the wind overtook us. He was coming back to spend the night wandering on the ridges and playing his harp among the rocks and junipers.

"Well," said the wind, "didn't I promise to show you something?" And he laughed. "You know," said the wind, "someday someone is going to discover the ruins of *your* house. And find bits of your pottery. And they are going to speculate learnedly upon it and decide that you were creatures of a very primitive order. But that you did have just the rudiments of the intelligence which has come to its full flower in *them*."

And so we came back over the last ridge. And skirted around the edge of the ancient mesal hearth which is on the little flat. And there stretched on a cord between two boulders was Rudyard's sign which says "This is the town of Tilpan"—the sign which guards that mysterious retreat where he and Victoria toil mightily, constructing pit dwellings and piling up walls of rock. The sign swung in the wind, which was already beginning to chant and to harp upon the mountain. And as we went on and came around the corner of the last juniper and into sight of the little low-hunched house of Yaquitepec, we saw that in our absence the Flycatchers had moved into the tiny red-roofed home in the summit of the gnarled tree near the water cistern. They were just tidying up after a busy day of carrying nest material.

"Te-quip" and "Tee-churrr" they said in greeting. Then they flew off into the sunset.

So we opened the door of our own house and Tanya lit the supper fire and the two boys and Victoria dumped their sack of specimens upon the floor and eagerly began to go through them. I went out to take a final look around and make all snug for what promised to be a windy night.

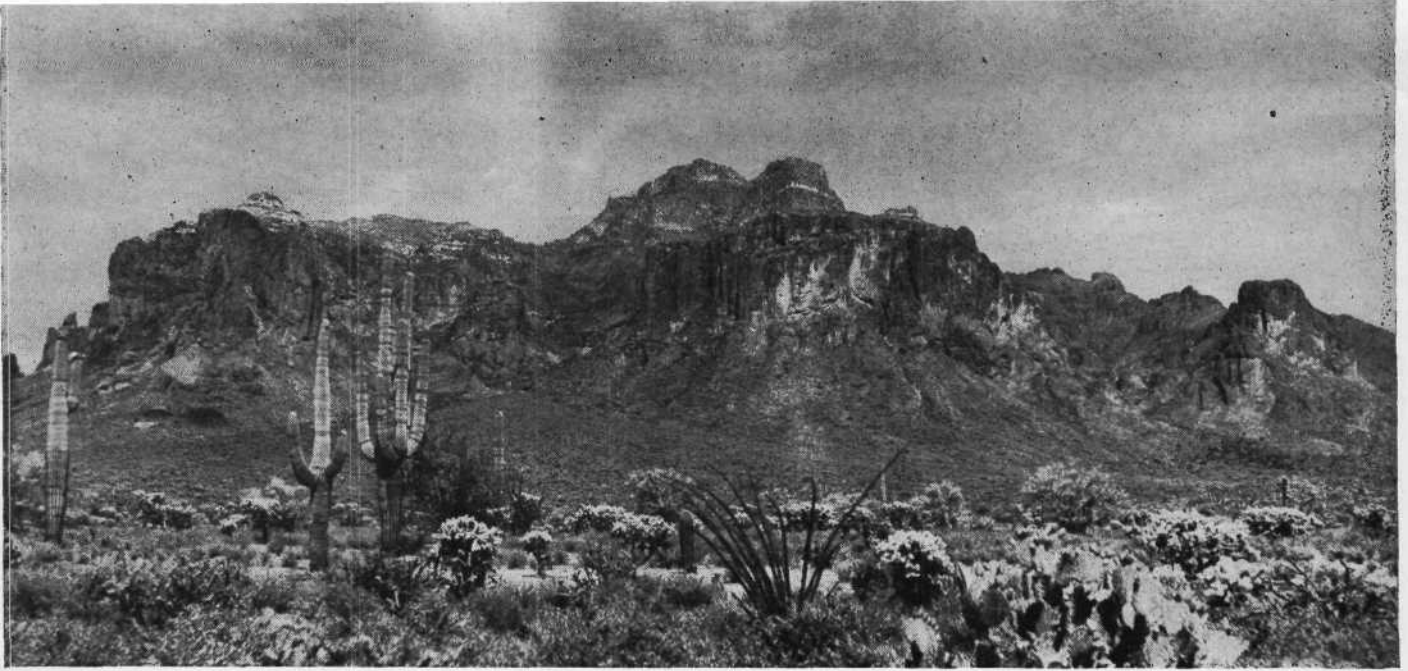
For across the western mountains, the wild harpings of the wind already were calling in weird cloud shapes—grey monsters of mist born of the damp spume of the waves which roll their thousands of leagues and their sullen depths above the sunken continent of Mu and all its cities. Grey cloud shapes of mystery which, through the night, would go charging eastward toward the shores of that other ocean which rolls its billows above the vanished glories of Atlantis.

As I barred the shutters and tied down the covers of the water barrels I knew that the wind was right. Someday, someone will come and speculate and search amidst the ruins of Yaquitepec. And will exclaim over the pottery chips and the few thin relics of another House Forgotten.

TIME

*Time? What is Time? A drop of rain.
A flash of silver wings. The light of stars.
Our great capacity for joy or pain.
And endless repetition of life's scars.
We live—we die. We are reborn.
Caught in this Wheel, and anguish torn,
Or souls upraised to the sublime!
The warp and woof of life is Time.*

—Tanya South



Rising sheer above the Arizona desert like the ramparts of a long-forgotten world the weird Superstitions of Apache thunder gods and Spanish ghosts guard the secret of long-lost mines.

Mountain Treasure

In the Superstition mountain region of central Arizona seasoned prospectors and dude gold-hunters alike still search for the fabulous mines reputed to have been discovered and worked by the ill-fated Peralta party from Mexico 100 years ago. According to legend, the gold concentrates that had accumulated when Pedro Peralta and his miners were killed by Apaches, later were recovered by a nephew—and here is the story of their recovery.

By BARRY STORM

THE YOUTHFUL looking but ragged Mexican, who called himself Ramon Peralta y Gonzales, had obviously endured an exhausting journey. He was gaunt and the roan horse, which had been his only transportation from California, was gaunt, and both of them were streaked with desert dust. But to Charles M. Clark, who was the telegrapher at Maricopa, neither man nor beast had suffered anything which could not be cured by rest and good food. So in this year of 1874, before the Southern Pacific had laid its tracks through the isolated Arizona villages and Ed Schieffelin had staked out his fabulous Tombstone claims, Clark offered the Mexican food for himself and the trade of two Indian ponies for the exhausted roan horse.

Gonzales accepted both with an obvious gratitude. And then after a few days rest he went to work around the village, making adobe bricks. Indeed, he must have intended to stay, for he informed his people in Sonora of his whereabouts by mail. But within a few weeks, he received a letter from his father, who was dying, asking him to come home immediately.

The second time Gonzales appeared at Maricopa many months later he had just come from Sonora, as he told Clark. And again he was even more fatigued than before, and the pony which he had ridden far and hard was beyond salvage. But this time, Gonzales confided, he had a map to gold, and he needed help to get it.

Maricopa was an isolated spot so Clark didn't mind making

conversation when he had the chance. And conversation with anyone who thought he knew where gold could be obtained was of high interest at a time when the mysterious Dutchman was keeping the whole territory excited with reports of fabulous hidden treasure.

"You mean you want a grubstake then," Clark said. "But how am I to know that you really have directions to where gold can be found? You haven't been in these parts long, you know."

"That is true," the Mexican said. "In fact, I have just come from Sonora where my father died. And you remember the letter calling me home. My father's name was Manuel Peralta, and he said that many years ago in his youth, before there were *Americanos* here, he had worked placer gold in the Rio Salado near the mountains called the Superstitions. He said that there was more such gold in those mountains in a canyon called Fresco. He made me a map to this gold, and I have come to get it."

Clark's interest immediately was aroused. For it was only three years ago that Andy Starr had told how a dying man named Jacobs had stumbled out of those same mountains with a wild story about finding a Spanish bonanza with the help of a map obtained in Sonora. And perhaps this map came from the same source!

"Let me see this map then," Clark exclaimed excitedly. "Maybe I'll grubstake you."

"But, no," said Gonzales hastily. "I do not wish anyone to see the map."

"Then I'll not help you," Clark said.

It was only with great reluctance, and when he saw that he could expect no help otherwise, that Gonzales finally produced the map. He kept it firmly clenched in his own two hands while he allowed Clark to take a brief look at it. Clark saw that it was an outline sketch of the Four Peaks on the north and of Weaver's Needle on the south and that between the two a line had been drawn to intersect the Rio Salado or Salt river at a point about midway between where the tributary canyon marked Fresco came into the river. Four crosses were marked around the tributary junction with Cañon Fresco—and that magic word "*mina!*"

"Mine!" Clark translated excitedly. "Then where from **this**



Abe L. Reid, pioneer Arizonan who found a piece of rich Spanish ore in 1930 on the northern slope of Peralta-mapped mountain but not, in two years of hunting, the hidden mine from which it must have come.

line between the peaks which crosses the Salt river is the right canyon—this Cañon Fresco?”

“You’ll help me with a horse and provisions and a rifle to save me from Apaches?” asked Gonzales narrowly.

“I’ll grubstake you, if you let me copy the map,” Clark exclaimed. And so the trade was made, and after Clark had hastily copied the map, the son of Manuel Peralta rode off toward the Superstitions on Clark’s horse, with Clark’s rifle in the boot under his leg and with Clark’s grub in his saddlebags.

Crossing the desert toward the northeast then, the Mexican rode on past the western end of the mountains, through the pass at Apache Gap and on to the Salt river beyond at Mormon Flat. And then he merely followed up the riverbank until he encountered the two old arrastres near the site where his father had said placer gold had been obtained. Near the site, too, of the mapped Cañon Fresco!

But the arrastres were not all that he found.

There were human bones scattered about, still partially covered by the last disintegrating remnants of clothing. Nearby was the tumbled ruins of an old camp.

Gonzales passed by the remains of the 26 year old massacre of the Peralta workers wonderingly, and went over to the camp. And then with a gasp of amazement he saw behind the tumbled ruins of the breast-works, where Pedro’s unlucky men on the river had made their last stand, the glitter of yellow gold shining through rotted hide sacks—concentrates from Pedro’s mines back in the mountains!

This was indeed rare good fortune which Manuel Peralta had not foretold upon his deathbed. For with such a treasure Gonzales could live a full life in California. And no need now to seek

farther up the Cañon Fresco which his father had mapped, though that golden canyon was indeed right at hand, running southeast from the little valley later called Mormon Flat. It was in fact Tortilla canyon which trended east, and the *mina* location was about the junction of Peters canyon which came into it from the south, a scant four miles above.

And now all Gonzales had to do was fill up the sacks which he had brought along. So he returned to Maricopa days ahead of schedule.

Clark really became excited now when he saw with his own eyes this golden proof, so he thought, of the mapped way to fortune. For Gonzales showed him, and shared with him, a large baking powder can full of the yellow dust, which Clark did not know was lode concentrates panned from the arrastres and not true placer gold. And Gonzales, in the excitement, did not disclose the full truth of the fortune he had found but instead persuaded Clark to sell him the horse carrying the fortune for a paltry 300 dollars with which to travel on, he said, to relatives in California. Then he left Maricopa, riding west into the sunset, to vanish forever as far as Clark was concerned.

Clark tried to find the source of the gold which he had seen with his own eyes; then both he and his son searched, still unsuccessfully. They did considerable placering in LaBarge canyon with small success, entirely overlooking the fact that it is really a tributary of Tortilla creek, coming into the latter near its mouth.

To this day Tortilla creek is still unrecognized as the true Cañon Fresco. Here, Russel Perkins of Tortilla Flat reported finding huge ash piles and other remains of an obviously large encampment, and Clark’s son, Carl, stumbled upon a piece of

hexagon drill steel sharpened Spanish-style in the form of a pointed, four edged spearhead instead of the chisel bit style used by American miners.

But though Clark never learned of it, Gonzales reappeared once more in the Superstitions 56 years later, seeking this time, from information obviously gained from relatives, the source of the golden concentrates which he had found upon the river. This time, too, in 1930, he came into the mountains from the southern side, trying apparently to set a course for Weaver's Needle from the desert below. But he was very old and the climbing was hard and in some way he missed his direction slightly so that he found himself in upper LaBarge canyon on the east side of Bluff Springs mountain instead of in Needle canyon on the west side. It was only the difference of a scant mile between but the sheer crags of the intervening mountain effectively blocked any view of La Sombrera from LaBarge canyon. And Roy Bradford was camping there!

Gonzales came to his camp, and casually asked Bradford to direct him to a high, black-topped hill which lay due north of another higher, hat-shaped peak which should be somewhere in the vicinity. He was Gonzales, he said, and he was seeking old mines which relatives from Mexico had once worked many years before.

Bradford was all excitement, for he himself had been searching for some years now for exactly those same mines. In fact, he recently had found at the junction of Bluff Springs and Needle canyons a huge saguaro into which stones had been embedded high up in such a way as to lead him to believe that they had been shot there by a nearby mine shaft blast. So Bradford was digging, he thought, even then upon the site of a hidden mine. And he too bluntly pressed the old Mexican for further details.

At this excited show of interest Gonzales fell into a wary silence from which he refused to be moved. Then Bradford, seeing that no more information was forthcoming and not wishing to disclose the site of his own digging to a total stranger, told the Mexican that the mountain he sought was yet many miles farther north. So Gonzales thanked him and again vanished into thin air, never to return. But with him vanished forever Bradford's one chance at fortune.

Yet, many years earlier, during the 1890's, John Carrol, a Mesa merchant, did cash in on his chance, and took his son with him on one trip to the ledge of bonanza gold ore to which he had fallen heir in payment of a delinquent bill. The ore had originally been found by a soldier from Fort Mc-

Dowell who spent most of his time off duty either drinking up his gold or prospecting for more. But he didn't dig it up as fast as he spent it and after a year he had run up quite a bill at Carrol's store. Then one day his regiment was transferred to Montana.

Carrol promptly asked for payment of his bill, and the soldier, to avoid having his pay attached, offered an alternative—"a sporting proposition." He knew, he said, where there was a ledge of rich ore in the Superstitions, even though he hadn't worked it as industriously as he should. If Carrol would call his bill even, he would tell him how to find it. And Carrol, himself, ought to have some idea about its value after cashing in the gold that the soldier had occasionally brought in.

Carrol did indeed have a very good idea of the value of that rock. He had already made plenty of profit from it, and secretly entertained the idea that a fortune was there if the ore lasted long enough. It was free milling gold in rotten hematite quartz which could be worked by hand at no cost. So he agreed to accept the phantom vein in full payment.

The soldier instructed him then to go to the parade ground at Fort McDowell, draw an imaginary line between the flagpole there and Weaver's Needle which could be seen in the distance, and then go up a canyon from Mormon Flat into the Superstitions where the line intersected. Probably there, he would still find the soldier's tracks, leading up canyon to the ore.

John Carrol took this good advice shortly afterwards and actually obtained enough gold to cause him to sell out his business and retire in ease. On his last trip to the ore, Carrol took his son along, and they rode horseback for over an hour from the river up what could only have been LaBarge canyon. Then they reached a well mineralized region of hills made reddish by oxidizing iron where many small arroyos drained down into the canyon. There they tied their horses and cooked lunch, leaving behind to mark the spot a frying pan, coffee pot and some cotton sugar sacks in which they had carried supplies.

From this point they went west up one of the arroyos a short distance to where a quartz ledge lay exposed upon a right bank. Here the elder Carrol obtained the small fortune which set him up for many years after. And then the ledge apparently vanished into thin air—was probably covered by erosion in the meantime. For twelve years later the younger Carrol returned alone, successfully refound the lunch camp, but never again the rich ledge he had once seen.

The thunder gods alone knew the secret!

Apache Lake and other man-made bodies of water in the desert now hide much of the Rio Salado down which the Peralta brothers trekked a near century ago to find rich placer deposits and fabulous, half-legendary bonanzas in the nearby Superstitions.



LETTERS...

Onyx and Onyx Marble . . .
Ft. Collins, Colorado

Dear Sir,

Under "True or False" in the March number of Desert Magazine, No. 4 "Onyx is one of the limestone minerals" is said to be 'true' which is not according to Dana and other mineralogists.

The Fourth Edition of Dana states "Onyx is a cryptocrystalline variety of quartz and is a banded variety with layers in even planes and the banding is straight."

None of the above features fits the limestone minerals, though Mexican Onyx or Onyx Marble are varieties of limestone, and should not be confused with "Onyx."

ROY G. COFFIN

Friend Roy: You are correct. The True or False editor had his wires crossed the day he wrote that answer.

—R. H.

Native Palms at Corn Springs . . .
Long Beach, California

Desert Magazine:

Three years ago I visited Corn Springs. I thought then it had the earmarks of a good story. Ever since I've intended writing you suggesting, at your convenience, that a good subject for a story was there.

Now that you have written that story, appearing in the January issue, permit me to say I think you did a rotten job.

While there I was told by an old prospector, living now at Yuma, formerly a swamper on a freight wagon for the Red Cloud mine, that the palm shoots were brought from Mecca and planted at the spring. That was their origin.

A little campaign from Desert Magazine, I believe, would force Riverside county park department to take measures to protect the palms from fire. They are worth the effort, separated by many miles from other trees, a pleasant spot for all who come. I've been thinking seriously of volunteering to cut the chaparral out by hand myself.

FRED MC KEE

Dear Fred: Just to keep the records straight, the palms at Corn Springs were mature trees when the Red Cloud mine began operation in 1898. Unfortunately, the supervisors of Riverside county have not yet discovered the scenic beauty of their desert domain—or else they just don't give a damn. In any case your offer of volunteer service in reducing the fire hazard at Corn Springs is gratefully accepted. But please do not disturb those gnarled old mesquites. They are hardly less picturesque than the palms. Thanks for your contribution.

—R. H.

Army and Navy are Feudin' Agin . . .
Globe, Arizona

Gentlemen:

After several years enjoyment of Desert, I sincerely regret the apparent necessity for prompting you on the history of your own state. The incentive is offered by a surprising inaccuracy used as an opener for your foreword to Sherman Baker's splendid story—TREK OF THE MORMON BATTALION—published in your June issue.

Unquestionably, you are safe in asserting that the expedition was "one of the most amazing infantry marches in all history." Nothing "detracts from the credit and honor due the ragged little army," but you erroneously state that "California had been seized and occupied by troops of the American army many days before Cooke's Dragoons, known as the Mormon Battalion, reached the Golden State."

There is no justification for the statement that California had been seized and occupied by TROOPS OF THE AMERICAN ARMY. Troops of the American Army never at any time seized California. The seizure was accomplished by the NAVY, and the occupation for "many days" before the arrival of the Battalion—more than five months in all—was maintained by that branch of our armed forces. Moreover, Navy control was not relinquished for at least two months longer. It was then, after the California conquest was over, that the military arm succeeded to possession, but only played an inconspicuous role thereafter.

You completely ignore Commodore Sloat and the flag-hoisting at Monterey; Montgomery, and the Stars and Stripes flown at San Francisco; Fremont leading Kit Carson and the California Battalion personnel of nondescript civilian volunteers, campaigning as a unit of Commodore Stockton's forces.

Lest we forget—America knew and appreciated her heroes during and after those glamorous days. The Californians sent Fremont to the United States Senate in 1850. In 1851, the then retired Pacific Squadron Commander Stockton received an identical compliment from fellow citizens in his home state of New Jersey.

I presume that your 99-year-late, short-short, Navy-scuttling story will provoke an abundance of salty comment if you tell it to the marines.

Your Native Sons should next year observe the Conquest Centennial with a special Navy Day program on July 7th.

LESLIE GREGORY

Dear Leslie Gregory: While you Arizonans (Sherman Baker resides in Prescott) are arguing over your Cali-

fornia history, let me remind you that the first step in the seizure of the state was made by neither the army nor the navy, but by a little band of Yankee rebels who on June 14, 1846—three weeks before Commodore John D. Sloat landed in Monterey—seized the Mexican presidio at Sonoma, arrested the Mexican comandante, and hoisted a home-made flag over the fort, and kept it there. However, it is true, the formal capture of the state is credited to the navy—and more power to the gobs. Let's hope it won't be long before they plant another American flag over Tokyo.

—R. H.

Those Highbrow Poets . . .
Banning, California

Henderson:

I'm sittin rite down to an old typewriter that has you beat for age to compliment you on your June number. Also, you have me puzzled about that poetry page. This is the second time that you have a readable page in a long time.

Generally, too much of your poetry is modernistic—whatever that means, or "highbrow"—and by usin' that word I mean it isn't understandable.

Hope you keep the good work up.

JIM PIERCE

The Lure is—Gold! . . .
South Laguna, California

Dear Editor:

Well, I see the Desert Rat argument sticks its head out of the sand once more. From what I have noticed there is no doubt that the picturesque, sometimes romantic and always interesting old codger has a lot of friends. They seem inclined to idolize him without realizing the rigid qualifications that guard his class and title. I suspect they have an urge to belong.

The real Desert Rat is a character distinct and unique. Being a mere desert dweller does not qualify for that title.

I know the breed, Desert Rat, Sour-dough or Gumbasino, they are pretty much the same type with a considerable difference in the setting. All however are prospectors. They are not wandering over the waste places just because they love the desert and admire the shadows and stark scenery. There is a stronger urge than that—the lure of gold. In fact I can't imagine a real Desert Rat being other than a prospector.

If any of these kindly idealists want to horn-in on the honest fraternity of Desert Rats, they will have to get a burro, pick, skillet, coffee pot and learn to throw a squaw hitch, then hie themselves forth into the land of sand, sunsets, sidewinders, solitude and scenery, there to serve their apprenticeship. There is no royal road, no camino real to the real thing. You got to go the route to belong.

JAMES P. PORTEUS

HERE AND THERE .. on the Desert

ARIZONA

Coyotes May Spread Infection . . .

KINGMAN—Fifteen per cent of the coyotes caught or poisoned in this area recently, have had buccal papillomata, or infectious wart, growing in or about their mouths, reports Leonard F. Miller, U. S. fish and wildlife trapper. This is the first time this infection has been reported here, although it frequently appears among dogs in northern states. It is highly contagious and often results in death. Although there will be no regrets for the coyotes among stockmen, there is danger it may spread to dogs.

Frijoles With "Black Dots" . . .

FLAGSTAFF—Arizonans are having some laughs over recent Satevepost story purporting to tell how Mexican dishes are prepared in their state. As retold in Coconino Sun, seems that Sen. Carl Hayden's favorite Mexican dish is frijoles, "those pink beans with the black dots." "He likes them for their solidity rather than for their elegance, and eats them Mexican fashion—not unlike the American way of eating a hot dog in a roll. The roll in this case is a tortilla, which is the national bread of Mexico and resembles, before it is rolled up, a pancake the size of a salad plate." As to the recipe given for preparing the luscious beans, often called "Arizona strawberries," the Sun merely snickers. And, the paper concludes, "Who ever heard of a frijole with black dots?"

Trout Fishing Until September . . .

FLAGSTAFF—Trout fishing in Arizona streams became legal May 30, and will continue through September 30. Dates are same for Fort Apache Indian reservation. Fishing licenses must be held by anglers on both state and reservation streams. Those fishing on reservation must have, in addition, special permits which may be obtained from Wm. S. Donner, superintendent of Fort Apache reservation, White-river, Arizona.

Indians versus State . . .

PHOENIX—Arizona Indians have refused transfer of Maricopa Wells, historic stagecoach station site in Pinal county, for park purposes. In replying to request of state legislature, Indians declared they already had taken steps to preserve Maricopa Wells and suggested the state might help by building a road to the site. Pima and Maricopa Indians donned U. S. army uniforms there for first time in 1865 when they were mustered in for Civil War Service as Companies B and C of the Arizona Volunteers.

Alaskans Learn Silversmithing . . .

TUBA CITY—Four students from Wrangell and White Mountain schools in Alaska are being sent by Indian Service to boarding school here to learn the art of making cast silver jewelry. Two of the students will be from the Haida and Tlingit tribes, and two will be Eskimos. Their instructor is Chester Yellowhair, famous for his beautiful work in cast silver. It is planned that upon their return the students teach other Alaskan natives, using distinctly Alaskan designs from their traditional totemic material.

Buffalo herd in Houserock valley provided background for pony express picture filmed by Republic Productions in May.

State highway commission will have an estimated \$15,715,713 to spend in 1945-46.

CALIFORNIA

Indians May Get Treaty Money . . .

SACRAMENTO—Descendants of 18 California Indian tribes are hopeful of receiving reimbursement for lands which the white man took over from their ancestors under treaties about a century ago. Assemblyman Don Allen of Glendora, himself three-fourths Indian, was slated to introduce resolution asking Congress to make awards to the 25,000 Indians on per capita basis rather than as a \$5,000,000 trust fund to be used for them. "Indians in California have been earning their own living for many years," Allen declared. "There is no reason why they should be treated as wards of the State and have the money they have been awarded kept and spent for them by some state agency."

Zane Grey's *Wanderer of the Wasteland* recently was filmed in southern Inyo county by RKO. Locations were at Whitney Portal, Alabama Hills, R. B. Spainhower ranch and Keeler-Darwin area.

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Postoffice Changes Name . . .

INDIO—Name of Keen Camp postoffice, located at Idyllwild turn-off on Highway 74 in San Jacinto mountains, has been changed officially to Mountain Center. This is the only postoffice in the country with that name, and it also avoids confusion which arose when postoffice was moved in November 1943 to present location. Office was established 40 years ago at what was then known as Keen Camp, later as Tahquitz Lodge, and still later as Tahquitz Meadows. Miss Gertrude Canning has served as postmaster since 1930.

Famed Resort Hotel Sold . . .

INDIO—La Quinta hotel, 5½ miles west of here, soon will resume its place as a playground of the rich and famous. Closed since spring of 1942, it recently has been sold for a reported \$251,100 to A. S. Kirkeby, president of the corporation owning Blackstone and Drake hotels in Chicago, Beverly-Wilshire in Beverly Hills, Gotham in New York City, and Hotel Nacional de Cuba in Havana. Property, said to be valued at more than double its sale price, involves more than 800 acres, the rambling Spanish style main building and 25 bungalows.

Hotel Indio Sold Again . . .

INDIO—Hotel Indio was sold in May to Bisno & Bisno, national hotel owners. Resident manager will be Squire Heathman of Los Angeles. Building was owned by Mrs. Charles VonDerAhe of Los Angeles, and lease, furniture and equipment were owned by Merle C. Debban and his mother Mrs. Mary A. Hamilton, who purchased them last year from Mr. and Mrs. Harold Haas.

NEVADA

Lake Bottom for Veterans? . . .

CARSON CITY—Setting aside several thousand acres of rich land which once was bottom of Lake Winnemucca to provide small ranches for veterans was advocated in May by Wayne McLeod, state surveyor general. Although department of interior in 1936 created Winnemucca migratory bird refuge, comprising 60,680 acres of lake bed and adjoining 12,106 acres lake for several years has been dry and consequently wildfowl and game have disappeared. McLeod declared combination of "very rich" soil and "high water table" make agricultural development practicable and inviting.

Engulfed City Emerges . . .

LAS VEGAS—St. Thomas, the town engulfed when Lake Mead was first filled, rose from the waters during lowest ebb in lake's history at end of April and remained a resurrected city for several weeks. John F. Perkins, early settler and builder of first modern building in the lost city, came back with his family to view remains of the home they had had to abandon when town was submerged. They found the cars they had left as waters crept over the town. Still standing was the great tree which marked corner of their lawn and which had been covered about seven years by 70 feet of water. The "doorstep" of their house consisted of a few scattered bricks. Ebb figure was 1145.54 feet above sea level, representing a fall of 64 feet this year. Lee Dana, superintendent of operations and maintenance for Boulder Dam, expects a normal rise in the lake this summer.

Lake's Effect on Plantlife . . .

BOULDER CITY—To determine how formation of reservoir behind Boulder Dam has affected plantlife in Grand Canyon and Lake Mead, Dr. Elzada Clover, head of botany and ecology departments at University of Michigan, arrived here in May to conduct the study. Dr. Clover is one of the few women who have braved rapids of Colorado river, having been a member a few years ago of the Norman Nevills river boat expedition.

Health Spa Planned . . .

LAS VEGAS—"Combining Modern Science and Desert Health" is slogan of a million dollar health resort planned for immediate future by Leland Woods, Los Angeles capitalist, who has purchased large tract on Los Angeles highway across from Hotel Last Frontier's rodeo corrals. Spa will feature good food with nationally known dietician in charge of menus. It will be operated under direction of a registered M. D., as adjunct to Samaritan Institute which Woods operates in Los Angeles. Woods declared resort is to be constructed "for the protection of public health and will be tied in closely to the veterans' rehabilitation program."

Milton J. McColm, former assistant superintendent Boulder Dam recreational area, has been promoted director of recreation planning for Missouri river basin with headquarters in Omaha.

Nevada state airmen will meet in Las Vegas October 20-22.

John Lucian Savage of Denver, designer of Boulder and Grand Coulee dams, has retired as chief designing engineer for bureau of reclamation, after 34 years as member of staff.

Valuation of railroad properties in Nevada has been set at \$68,293,500 for 1945 by state tax commission.

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—
Actually about one-half cent per thousand readers.

MISCELLANEOUS

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NEW MEXICO

Hanna Is New Indian Attorney . . .

ALBUQUERQUE — R. H. Hanna is successor to Wm. H. Brophy as attorney for United Pueblos Indian agency. He was named by Harold L. Ickes after recommendation of All Pueblo Council and Superintendent John G. Evans. Hanna has had many years experience as non-government representative of Indians. He is former justice of state supreme court, was special assistant to attorney general, which post involved the "Walapai Indian case" and aboriginal rights of southeastern Alaska Indians to tidal waters.

Ries Appointed Laboratory Head . . .

SANTA FE—Maurice Ries, Washington, D. C., became director of Laboratory of Anthropology here June 15, succeeding the late Dr. J. F. Zimmerman. Ries, former newspaperman, has served as director and research associate at Tulane university and has been connected with United Fruit company in Central America.

Water Soon Ready For 7000 Acres . . .

TUCUMCARI — With final blast in tunnel No. 4 on May 1, last barrier was removed for delivering water from Conchas reservoir, 35 miles northwest of here, completing first unit of 45,000-acre Hurley irrigation project. Bureau of reclamation engineers expect to complete lining of tunnel and make water available to 7000 acres of crop lands by July 1.

Hobby May Start Industry . . .

ALBUQUERQUE—New Mexico cedar wood may be used to make chests, boxes and novelty pieces on factory scale. W. A. White, mining engineer who has turned his hobby of furniture making into a local enterprise, believes four or five of the 21 varieties of New Mexico cedar are usable. He has purchased factory site and has started turning out window and door frames and lawn furniture. Next on list are cedar chests. Before end of year he hopes to employ 20-25 assistants.

UTAH

Mormon Leader Dies . . .

SALT LAKE CITY — Heber Jedediah Grant, for more than 26 years president of Latter Day Saints (Mormon) church, died May 14, aged 88, bringing sorrow to almost a million of his followers. He had served as president longer than any predecessor except Brigham Young, who served 30 years. At 24 he became the church's youngest stake president. Although he opposed polygamy, which the church outlawed by its manifesto of 1893, he had embraced it in his youth. He always was opposed to liquor, tobacco, tea, coffee and other stimulants. Council of the Twelve Apostles appointed George Albert Smith, 75, to succeed him. Smith had been president of the council.

Cave Monument Open to Public . . .

AMERICAN FORK — Timpanogos Cave national monument opened for summer season May 27. Charles B. Walker, ranger in charge, announces there will be guides to conduct visitors through the scenic cave area, which includes not only stalactites and stalagmites but rare root-shaped helictites which are found in abundance of delicate colorings of red, brown, green, blue and lavender. Despite travel restrictions 8000 persons registered at cave last year and many more thousands enjoyed recreational facilities of camp grounds below the cave. Located in American Fork canyon, cave is reached by mile and half long trail which ascends 1200 feet; passageways then lead back into mountain on a level, instead of downward as do most caves in this country.

Founder of Ruby's Inn Dies . . .

CEDAR CITY—Rueben Carlson (Ruby) Syrett, 61, veteran tourist guide and founder-owner of famed Ruby's Inn, died May 8 at home of his daughter Mrs. LeGrande Farnsworth of this city. "Ruby", who was identified with tourist promotion for more than 25 years, established "Tourist Rest" camp in 1919 near where Bryce lodge now stands, the first accommodations on rim of Bryce canyon. In 1924 he opened Ruby's Inn, just outside the park, a homey western tavern which became famous for its unique atmosphere and from which many prominent parties started on extended exploration trips through Bryce area.

Dr. Louis P. Gebhardt, professor of bacteriology, University of Utah medical school, is new chairman Rocky Mountain section, Society for Experimental Biology and Medicine.

Brigham S. Young III, 87, grandson of Brigham Young and second president of LDS church, died May 18, at his home in Magna.

A WESTERN THRILL

"Courage," a remarkable oil painting 20x60 feet, the Covered Wagon Train crossing the desert in '68. Over a year in painting. On display (free) at Knott's Berry Place where the Boysenberry was introduced to the world and famous for fried chicken dinners with luscious Boysenberry pie.

You'll want (1) A 4-color picture of this huge painting suitable for framing. (2) A 36-page handsomely illustrated souvenir, pictures and original drawings, of Ghost Town Village and story of this roadside stand which grew to a \$600,000 annual business. (3) One year's subscription (6 numbers) to our illustrated bi-monthly magazine of the West. True tales of the days of gold, achievements of westerners today and courageous thoughts for days to come. Mention this paper and enclose one dollar for all three and get authentic western facts. Postpaid.

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Following is the current price list for complete files of Desert Magazine **bound in loose leaf binders**. The October issue each year carries a complete index for the volume:

Volume 1, Nov. '37 to Oct. '38 . . .	\$12.00
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Volumes 1 and 2 are not always available for immediate shipment, but generally they can be forwarded within a reasonable time, as out-of-stock issues are obtained.

The magazines in these volumes are not all new, some of them being newsstand returns, but they are guaranteed to be complete copies in good condition.

DESERT MAGAZINE
El Centro, California

Mines and Mining . . .

Fontana, California . . .

Henry J. Kaiser is seeking a readjustment of his original loan of \$111,000,000 from the Reconstruction Finance Corporation for the purpose of taking over and continuing in operation the Fontana Steel plant which he has been operating as a wartime project. He has paid off \$27,000,000 in principal and \$9,000,000 in interest on the original RFC loan. Kaiser states that it will require \$52,000,000 from private sources plus additional millions for working capital to convert the plant to the manufacture of tin plate and steel products. Bank of America, through A. J. Gock its chairman, has announced that it will help finance the Kaiser program.

. . .

Santa Fe, New Mexico . . .

Capt. R. R. Spurrier, former oil man of Hobbs, has been named by Governor Dempsey as New Mexico state geologist and secretary of the state oil conservation commission. Spurrier succeeds John M. Kelly who resigned in February to take a position with independent oil operators in west Texas.

Las Vegas, Nevada . . .

The J. M. Montgomery company, veteran engineering concern, has taken over the Basic Magnesium plant at Henderson, Nevada, according to the announcement of F. O. Case, general manager for the Anaconda Copper company which has been operating the plant. The new management is to operate the plant as Basic Magnesium Project with H. H. Giddings as general manager.

. . .

McDermitt, Nevada . . .

Cordero Mining company, largest producer of quicksilver in Nevada, has set a goal of 500 flasks for its current month's production. The average monthly output for some time past has been 400 flasks. The mill at Cordero mine is a 125-ton Hershoff, but its operation has been limited to 80 tons daily due to shortage of men. Owing to decreasing need for strategic minerals, reports have been current that three of Humboldt county's top mineral producers will close down in June. These are the Getchell mine, Golconda division of the Nevada-Massachusetts company, and Golconda Manganese.

Washington, D. C. . . .

The War Production Board on May 26 removed all controls on the use of domestic silver. WPB pointed out that while anyone may now buy domestic silver without restriction, equipment with which to use it is entirely in the hands of regular manufacturers. Restrictions on the use of foreign silver will continue as in the past.

. . .

Ely, Nevada . . .

John C. Kinnear, general manager of the Nevada Mines division of Kennecott Copper corporation, has been promoted to the position of vice president in charge of operations of the company in Arizona, Nevada and New Mexico. He succeeds W. S. Boyd, retired. Kinnear started working for the company as a laborer in 1910.

. . .

Niland, California . . .

Cardox Western, Inc., successor to the National Dry Ice company, has started a deep test well near Salton sea in an effort to locate carbon dioxide gas at lower strata than have previously been tapped. The wells in operation range from 600 to 700 feet in depth, but the new test hole is to go to 2500 feet or deeper, if necessary. From wells now in operation the company is producing 30 tons of dry ice daily. About 95 per cent of this volume goes to the armed forces.

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Today, we are very busy fighting and achieving victory! Scores of young men from Imperial Irrigation District are in the armed forces. The employees remaining at their tasks on the home front are keeping electric power on the war job 24 hours a day, seven days a week . . . in military camps, air fields, vital industries, on the farm, and for the needs of the District's customers. Amidst all manner of shortages, there is no shortage of electric power. We take occasion to call attention to these contributions to the all-out effort because they are made possible under our system of free enterprise . . . one of our basic freedoms which our enemies sought to destroy.

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GEMS AND MINERALS

ARTHUR L. EATON, Editor

Gem and Mineral Exhibit in Los Angeles Attracts 13,000

By LELANDE QUICK

According to authorities at the Los Angeles County Museum of History, Science and Art at Los Angeles the attendance for the first two days of the fourth annual exhibition of gems, jewelry and lapidary art was in excess of 13,000, representing 80 per cent of the museum attendance for those two days, which exceeded any attendance since the Olympic games. The exhibition opened May 12 and will continue at regular hours through June 29 with free admission.

The exhibition was quite different from other shows in that all displays were under glass and each member exhibited his best specimens in a single stone exhibit so that the cream of the society's lapidary effort was combined in a few cases. There were 84 general exhibits ranging from novelties to faceted stones, from cameos to carved talc and howlite and about 23,000 separate items in all.

The exhibition exceeded in attendance any special exhibit the museum ever had and the society has been invited to exhibit again in 1946. A set of prominent Los Angeles certified gemologists judged the single stone exhibits, while the general displays were judged by a group of men from all over the West including Harold Odle of Rollins, Montana, and Alan Branham of Lander, Wyoming. The judging was so thorough and critical that it took the two sets of judges two days to finish that enormous task. Even with the competent help of the museum authorities and the excellent work of Exhibit Chairman Archie Meiklejohn and his assistant Howard McCornack it took eight days to place the exhibits.

The fluorescent exhibit and display of lapidary machinery were the largest exhibits of these items ever assembled. The theme of the show was "beauty" and while it was all beautiful the one word on everyone's lips was "quality." The members of this guild have progressed in the lapidary art amazingly as was witnessed by the excellent cameos of E. F. Montgomery and the carved statuettes in lepidolite and howlite of Clara Hueckel. Other outstanding items were the lighted geodes of James Forbes, sand blasted jade plaque of Esther Ports, iris transparencies of Ted Schroeder, 100 hearts and pendants of Howard McCornack, colonial home and gardens of Zola Barnes, a complete set of dinner ware in onyx by O. C. Barnes, smoky quartz sphere the size of a baseball by Ralph Dietz, carvings to scale in talc of the whole dinosaur family by Rolland Willis, and many other items too numerous for mention.

Great progress has been made in jewelry making and some of the outstanding items in that class were a bunch of grapes in drusy amethyst by Mrs. W. H. Mayfield, a thistle with amethyst by Isabelle Cass, a poppy of Nipomo spicule agate by Marguerite McLellan and great quantities of rings, pins, earrings, etc. Mrs. W. H. Mayfield contrived some very original work

by combining copper and silver in unique pieces. There were thousands upon thousands of cabochons and many members have adopted faceting with great credit. It is estimated by museum authorities, who are taking a count, that at least 70,000 persons will visit the exhibit before it closes on June 29.

MANY COLLECTORS PLAN TRIPS TO JADE FIELDS

As a result of the wide publicity given the Wyoming jade discoveries in 1939, a flood of inquiries is being received by the Landers chamber of commerce from rock collectors and gem cutters who announce their intention of visiting the area as soon as travel restrictions are lifted.

Presence of jade in this area has been known for several years and it has been found over territory extending from Dubois, Lysite and north of Shoshoni to Medicine Bow on the south. It ranges from the light green to black, the only black jade known to exist in the world.

Fremont county jade was first identified by Dr. John Marble of the National Museum, Washington, D. C., who was in the valley in the fall of 1939. Prior to that time the rock had been called almost anything except what it really is, and when the noted scientist placed his stamp of approval upon the quality of the jade in this section, rockhounds became interested.

The presence of jade in Wyoming finally attracted the attention of Chang Wen Ti, president of the Chinese Jade Pagoda Co. of Los Angeles, who made a trip there last year to examine the extensive placer field in the vicinity of Crooks Mountain and study the lode claims on the north side of the Sweetwater river.

TRADE HAS LOST SINCE MEN QUIT WEARING JEWELRY

Jewelers, without an effort, have allowed what was once a very essential part of their business to fade gradually out of existence. The male of the species, who likes good jewelry as well as his mate does, once was a best customer, using collar buttons, scarf pins, shirt studs, cuff buttons, rings, fancy watch chains and fobs, watch charms, tie clasps, etc.

A sewed on collar, two white buttons on the sleeves and the collar and cuff button business was gone. Soon tie pins and shirt studs followed. The big, solid gold watch chain, with an expensive charm, faded to smaller and smaller size, until it also has gradually disappeared. The flashy diamond, ruby or emerald ring is gone. This business can be built up again. Judicious advertising and the featuring of men's jewelry in the show case may help restore this lost business.



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50 ring stones, including genuine and synthetic — \$7.50. 12 genuine Opals or Cameos — \$2.75. Plus 20% tax. B. Lowe, Box 311, St. Louis 1, Mo.

Minerals, Gems, Coins, Bills, Old Glass, Books, Stamps, Fossils, Buttons, Dolls, Weapons, Miniatures, Indian Silver Rings and Bracelets. Also Mexican. Catalogue 5c. Cowboy Lemley, Las Cruces, New Mexico.

Mineral Sets—24 Colorful Minerals (identified) in 1x1 compartments—Postage paid, \$3.50. Prospector's Set of 50 Minerals (identified) in 1x1 compartments in cloth reinforced sturdy cartons, Postage paid \$5.75. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

Good cutting material, Petrified Wood, Agate, Jasper, \$1.00 per lb. Special mixed lots \$4.00 for 5 lbs. Variscite specimen material \$1.00 per lb. and up. Geodes and Ribbon Rock, 5 lbs. for \$2.00. Please include postage. John L. James, Tonopah, Nevada.

Montana Moss Agates in the rough for gem cutting, \$1.00 per lb. plus postage. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

Jewelry stones removed from rings, etc. 100 assorted \$2.40. B. Lowe, Box 311, St. Louis 1, Missouri.

\$2.50 brings you prepaid six rare and beautiful crystallized Arizona minerals. Vanadinite, Diopside, Wulfenite, Willemite, Chrysocolla, Azurite. Specimens 1½x2 or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

Choice Palm Root—Full of eyes showing root and trunk structure. Very colorful. Sliced for Cabochons. 25 cents per square inch. Satisfaction guaranteed. GASKILL, 400 North Muscatel, San Gabriel, Calif.

Antique Jewelry: 12 articles antique jewelry, brooches, rings, lockets, chains, etc. \$3.60 12 assorted hatpins — \$3.00. 12 stickpins \$2.75. B. Lowe, Box 311, St. Louis 1, Mo.

INDIAN RELICS, Curios, Coins, Minerals, Books, Old Buttons, Old Glass, Old West Photos, Weapons, Catalogue 5c. Lemley Antique Store, Osborne, Kansas.

Wanted: to buy, sell and exchange specimens outstandingly rare and beautiful. Sam Parker, 2160 East Van Buren, Phoenix, Ariz.

JEWELS from the Colorado Desert: Beautiful lavender agate; pound chunks, \$1.00. Agatized wood from the Chocolate Mts., showing cell structure in whites, reds, browns, prominent eyes. Copper mineral aggregations—azurite, malachite, melanconite, chrysocolla, chalcocite—takes good polish, spectacular. Slabs from these two, 35c per square inch. Placer galena nuggets from Trego Mts. ½ inch or larger, 25c. Geodes, etc. Money returned if you don't like 'em. Desert Blossom Rocks, Box 356, Winterhaven, Calif.

AGATE JEWELRY AND OREGON AGATES

—Ladies 10k gold rings, pointed or oval type, \$14.40 including excise tax. We make pendant necklaces, brooches, rings of several types. Sell plume and other agate by the slab. We guarantee satisfaction or will refund your money upon receipt of our merchandise. See that funds accompany your order. E. Lee Sigfrit, 211 Congress, Bend, Oregon.

FRANKLIN, N. J., COLLECTION. 10 excellent specimens, several highly fluorescent. Polyadelphite, Willemite, Rhodonite, Norbergite, Mangan Calcite, Orange colored Calcite, Salmon colored Calcite, Franklinite, Zincite, Graphite in Limestone. Size about 2x2 in. or larger, \$4.00 postpaid. H. STILLWELL & SON, Rockville Centre, N. Y.

MONTANA MOSS Agate in rough for gem cutting and specimen. 50c to \$1. per pound, plus shipping cost. Also can supply Jade, Jasper and Petrified wood. E. A. Wight, P. O. Box 1318, Billings, Montana.

"HERKIMER COUNTY DIAMONDS." You cannot have too many of these gem-like crystals. Very attractive assortments at \$1.50-\$2.50-\$5.00-\$10.00 and up. Postage paid. H. STILLWELL & SON, Rockville Centre, N. Y.

WILL EXCHANGE or buy for cash, polished agate, flame wood, highly colored jasper and any colorful cabochons suitable for bracelet or ring sets. Have finest Tri State district Xled specimens for exchange, no checked stones accepted. Will pay good prices for agates with good markings. Boodle Lane, Box 331, Galena, Kansas.

BEAUTIFUL KENTUCKY FOSSILS. An assortment of 12 specimens all different. Size 4x4. A real buy for \$7.00. George Bryant, The Rock Hunter, Rt. 2, Lawrenceburg, Ky.

6 BEAUTIFUL COLORADO SPECIMENS \$6.00, size 3x3½ in. 22 1½x1½ in. specimens, very showy \$6.00. 12 prehistoric lizard scales \$1.00. 1 beautiful specimen of snow white crystallized marble 5x5½ in. \$3.00. Jack the Rockhound, Box 86, Carbondale, Colorado.

NEW WONDERLITE ULTRA VIOLET BULB, fits any standard electric light socket, 50 hour life, 300 watts, 105-120 volts, A.C. or D.C. can be used continuously if desired, a rugged bulb giving beautiful results. Price \$2.60 including tax and insured post. H. STILLWELL & SON, Rockville Centre, N.Y.

ATTENTION ROCK CUTTERS! Assortment of 12 cabochon blanks, \$1.50. Citrine quartz \$2.00 per ounce. Blanks of Rhodonite 20c. Hemotite 25c. Sterling silver earring backs, screw type \$3.00 per dozen. Cut and polished star sapphires \$2.50 per carat, stones are from 3½ to 7 carats. Genuine faceted Oriental Rubies approx. ¼ carat each, \$1.50 each. Please include luxury tax on cut stones and earring backs. De Marrison and Charles, 420 No. La Cienega Blvd., Los Angeles 36, California.

PREFORM CABOCHONS, Jasper, Agates, Bloodstone, Tigerite and many others, all sizes, priced from 35c to \$1.00. Australian Opal ¾ inch to 1 inch \$1.50 to \$10.00, plus 20% fed. tax, 2½% California State tax. A. L. Jarvis, Rt. 2, Box 350, Watsonville, California, 3 miles south on State highway No. 1.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

Scientists now sez that particles uv dust in th air causes beautiful sunsets. Dust is one uv th onpleasant things desert folkes has to put up with. But if that's what makes gorgeous desert sunsets it shure has its uses. Like white hyacinths f'r the soul.

It's supprizin how few good rox are found in uther countries by rockhouns in the services. Grim busyness uv war takes up most uv their time. But when they can get away for a bit uv safe or unsafe fieldtrippin they gets disappointed in most localities an has a nuther reason f'r wantin to go Home.

Sum folkes claims yu can't identify rox properly onless yu knows lotsa things about um, such as specific gravity, hardness, etc. But you can reconize your frens in different clothes and unaccustomed places, so it seems that sumtimz familiar minerals could be identified just by lookin.

Houses lived in by unrockhouns always looks sorta bare to rockhouns when they visits in um. That's probally becuz therz so menny wide open spaces like mantles an table tops uncoccupied by rox. Seems sort uv a waste of space.

COLORFUL CUTTING MATERIAL—1 lb. Death Valley onyx, 1 lb. (beautiful) Rose Quartz—Brazil, 1 lb. Howlite (White), ½ lb. Dover England Flint, ½ lb. Opalite, ½ lb. Palm wood (Rare, good eyes), ½ lb. Rhodonite (Pink), ½ lb. Dumortierite (Blue), ½ lb. Ophi Calcite (yellow), ½ lb. Gem Obsidian (banded or scheen), ½ lb. Flower Obsidian (white and black), ½ lb. Last Chance Canyon Gem Material, ½ lb. Jasper Agate and 1 California Thunderegg. Special—All Select—\$12.00. MINERAL MIRACLES, 12103 Louise Ave., Compton, Calif. 6 Blks. East of 12100 Blk. Atlantic Blvd.

FLUORESCENT AGATE, gem cutting material, fluoresces beautiful rich green under short wave only. Rare, supply limited. SATIN SPAR, attractive cabinet specimens, fluoresces orange, yellow and pink under short wave. Rare and scarce. Special on these remarkable offerings for one month only, \$1.10 per pound. Postpaid and guaranteed. Thompson's Studio, 385 West Second Street, Pomona, California.

LARGE, CLEAR SELENITE crystals up to 125 lbs., suitable for Rock Gardens, Aquariums, Rustic Lighting Systems, or ornamental rockwork as well as rock collections. Varies from perfect transparency to cloudy twinnings with close resemblance to ice. Will sell by the pound (average 25c) or mining claim outright. Owner doubts that there is finer material of this type in the world. Accessible 2½ miles from paved highway. Henry Covington, Box 59, Fredonia, Ariz.

MEXICAN FIRE OPAL and fine specimen opal, all colors, Tiger's Eye, Brazil Carcilian, slab Chrysocolla, Ceylon Sapphire, Mexican gem Amethyst, Baddeleyite pebbles, Zirconian. Money back if not satisfied. The Desert Rat's Nest, 2667 E. Colorado St., E. Pasadena 8, California.

Among the very interesting mineral specimens found by sailors near Salton Sea are agates, alabaster, fish tail gypsum, siderite, pumice, obsidian, and salt crystals. The gypsum is variety selenite, very transparent and fluorescent. The salt (halite crystals) also fluoresces. The siderite, mixed with calcite, creamy colored to brown, occurs as incrustations and also, rarely, as well formed roses. The hot springs and small geysers there have produced many odd formations, among them siliceous sinter or float stone.

M. P. Colony, of Sacramento mineral society conducted an interesting and instructive discussion on the "mineral of the month," Rhyolite rocks. This portion of the monthly program has become quite popular. Volunteers are assigned subjects for round table discussions, and the necessary research proves of great educational value both to the speaker and to the members. Two thirty minute pictures in sound and color rounded out the program. One was "Sutter's Empire," depicting the scenic beauty and natural resources of Sacramento valley and adjacent foothill country. The other was the story of electricity, entitled "Hydro."

On June 10 the Southern California Mineralogical society was scheduled to hold its annual meeting and election of officers at the home and on the grounds of L. Y. Giddings at 1318 E. Colorado avenue in Pasadena. Prizes were given for mineral exhibits, there were grab-bag offerings, and handsome door prizes. The meeting on July 9 with a talk by P. E. "Gene" Linville of Pasadena junior college reported on the annual field trip to Kern river canyon. The field trippers brought home some fine specimens, especially garnets.

There are numerous ways by which a stone may be doped. This was demonstrated Monday night, May 7, at the L. A. lapidary society meeting. The very interesting demonstration was part of the open forum program conducted by Leland Quick. Several members brought their equipment and showed their methods of putting stones on dop sticks. Among the accessories used were an old electric iron and two old toasters, while the regulation alcohol lamp was also much in evidence.

Desert gem and mineral society of Blythe, California, held its May 14 meeting at the home of Mr. and Mrs. Norman Brooks. In addition to the host and hostess, other members present were Mr. and Mrs. Collis Mayflower, Mr. and Mrs. Glenn Vargas, Mr. and Mrs. Horace Miller, Mr. and Mrs. George Buckner, Jessie Nell Harrison, Rev. Leslie Sim, Louis Favret, Ed C. Moore, B. W. Cahoon, Ed. J. Seymour, and E. A. Montgomery. The second monthly contest in choice specimens was won by Brooks, with Vargas second and Buckner third. The grand prize for the three months' contest will be awarded at the next monthly meeting.

Members of the Searles lake gem and mineral society went to their club house, the Chris Wicht memorial at the foot of Surprise canyon May 27 for the special purpose of constructing a barbecue pit there. Initiation of the pit will be at the big barbecue and picnic planned for the society on July 4. June 17 was the date set by the society for the annual climb to the top of Telescope peak. A number of out of town hiking enthusiasts were invited to go along on the trip.

Mother Lode mineral society of Modesto, California, holds its regular meetings on the fourth Friday of each month. The May meeting was held the 25th. Wesley Gordon spoke on petrified wood. The summer meetings will take the form of a pot luck supper, and will be held at the regular meeting time at the homes of the various members.

Mrs. J. Frank Murbach, secretary of the Gem Collectors club of Seattle, Washington, reports that the club met on May 15 for its regular monthly meeting and dinner in the chamber of commerce building. Dr. Gunther of the University of Washington spoke on the use of stone by the prehistoric Indians and Eskimos as tools and weapons. The speaker brought a display of arrowheads from the Columbia river basin and jade implements from Alaska.

The State Mineral Society of Texas had four representatives at a recent meeting of the Arkansas state society. Mrs. Edith Owens, Mrs. Ford, Mrs. Nell Carrigan, and D. W. Danielson. The trip lasted four days. They were guided by Dick Buhlis to a field where they gathered lodestone, magnetite, garnets, vesuvianite, pyrite, etc., before going to the meeting. The Arkansas mineral society presented each visitor with an honorary membership certificate in the Arkansas society after lunch. The Texas representatives not only secured many specimens from their field trips, but added very freely to their collections from the stock of the various dealers in Hot Springs, Crystal Springs, and elsewhere.

Pacific Mineral society of Los Angeles held a dinner meeting Tuesday, May 15, at the Asbury apartment hotel on west Sixth street. Thomas Clements, Ph. D., talked on the emerald mines of Muzo, Colombia. Dr. Clements is professor of geology at the University of Southern California. He has a first hand knowledge of his subject, as he did geological research in the mines in 1939 for the Colombia government. He also is a member of the Los Angeles mineralogical society and was its first president. Dr. P. A. Foster displayed a collection of lead minerals in the society case.

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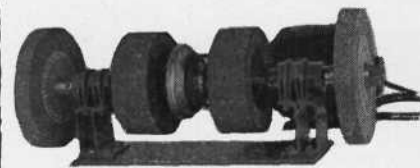
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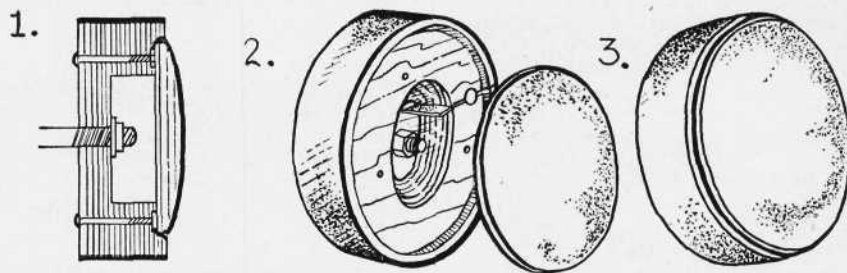
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Arbor Hole Sizes for Drum Sanders All Styles, 1/2, 5/8, 3/4, 7/8, 1-in.

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AMONG THE ROCK HUNTERS

Merton Andersen, Holtville naval air base, has been polishing sets cut from agate which he brought home from Guadalcanal. It shows lovely shades of muted pink and lavender and wavy white lines.

About fifty specimens have been added to permanent collection of Mineralogical Society of Arizona during the past year.

Ureco LAPIDARY SUPPLIES



War priorities on many materials still prevent us from manufacturing lapidary equipment, but we do have available a good stock of the following supplies for the lapidary shop:

VRECO DIAMOND SAWS . . . give you better performance . . . longer life . . . faster cutting.

6-inch.....	\$4.50	12-inch.....	\$ 8.75
8-inch.....	5.50	14-inch.....	11.00
10-inch.....	6.80	16-inch.....	13.75

Be sure to specify arbor hole size required. Postpaid.

VRECO GRINDING WHEELS are made expressly for us by the NORTON CO.

	80, 100, 120 & 180 grit	220 grit
4 x 1/2-inch.....	\$ 1.05	\$ 1.10
6 x 1 -inch.....	2.40	2.60
8 x 1 -inch.....	3.60	3.90
10 x 1 -inch.....	5.00	5.30
10 x 1 1/2-inch.....	7.00	7.50
12 x 1 -inch.....	6.90	7.50
12 x 1 1/2-inch.....	9.60	10.40
12 x 2 -inch.....	12.30	13.30

Be sure to specify arbor hole size. Postage extra.

VRECO DRESSING BRICKS are an indispensable aid to keeping wheels true.
8" x 2" x 1" Dressing Brick.....\$.85

ABRASIVE GRAIN . . . Silicon-carbide grains in grit sizes 60, 80, 100, 120, 150, 180, 220, also F (240), FF (300), and FFF (400).

- 50c per lb. in single lb. lots
 - 35c per lb. in 2 to 5 lb. lots
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 - 23c per lb. in 100 lb. lots or more
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POLISH POWDER . . . Tripoli Polishing Powder, 2 lbs.\$.85

FELT POLISH WHEELS—Spanish White Felt . . . made expressly for us by Byfield Felting Co. These wheels are the proper hardness for polishing gem stones and flat specimens.

6 x 1-in.....	\$4.25	10 x 1 -in.....	\$11.00
8 x 1-in.....	7.25	10 x 1 1/2-in.....	14.90
		10 x 2-in.....	\$19.00

Arbor hole sizes: 1/2", 5/8", 3/4", 7/8", 1".
Felt prices are postpaid.

SANDING CLOTH . . . CARBORUNDUM BRAND Silicon-carbide cloth for disc or drum type sanders. Grit sizes, 120, 220, 320.

Width	Price per Ft.	No. Ft. per \$	Price per 150 ft. Roll	Roll Ship. Weight
2"	5c	24 ft.	\$ 4.70	3 lbs.
3"	7c	15 ft.	6.90	5 lbs.
8"	17c	7 ft.	18.00	12 lbs.
10"	22c	6 ft.	22.00	15 lbs.
12"	25c	5 ft.	26.50	20 lbs.

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Kern County mineral society each month, at its regular meeting, holds an exhibit, by members, of the mineral of the month, as chosen by the society, and awards a first prize to the winner and points to the runners up. The mineral of the month for April was native copper; winner Emery Harman, points to E. Harman 5, E. P. Van Leuven 4, C. Chenard 3, G. Petersen 1, G. Hudson 1, John Kennedy 1. The following "minerals of the month" were selected for the ensuing year: May, native silver Ag; June, native antimony, Sb; September, native bismuth, Bi; October, native arsenic, As; November, native gold, Au; December, native iron, Fe; January, native mercury, Hg; February, native tellurium and all tellurium ores, Te; March, native lead and all lead ores, Pb. In the case of rare elements, the ores are allowed also.

K. J. Hillquist of Lapidary Equipment company, Seattle, advises that service men overseas, in writing for the company's catalog, should send a written mailing permit from a superior officer. Owing to mailing restrictions, the post office will not accept these catalogs without such a request. "We find it an embarrassing situation," writes Mr. Hillquist, "but there is nothing we can do except send word to the applicant that we must have a written request."

Diamonds, gold and jade were lecture subjects at May meetings of East Bay mineral society, Oakland. Dr. Austin F. Rogers of Stanford gave the lecture on jade. A mineral and lapidary show by members, with prizes, was scheduled for June.

Roland McKinney, director of Los Angeles county museum of history, science and art, announces that L. A. county museum budget for the fiscal year includes an appropriation for a curator of minerals. A group of 25 men representing schools, colleges and mineralogical and lapidary societies met to discuss a program of scope and policy for the development of the museum section of mineralogy. The group resolved itself into an advisory committee. Dr. Chester Stock as chairman appointed an executive committee as follows: Ernest Chapman, Dr. Thomas Clements, Dr. Robert Webb, Leland Quick, Richard R. F. Lehman.

Imperial Valley gem and mineral society has resumed meetings in county court house, El Centro, Calif. At May meeting, A. L. Eaton spoke on emeralds and members displayed green stones. A grab bag is planned for June, specimens to be donated by members. It was decided that whoever wins a door prize should be responsible for door prize at following session.

E. A. Curry of San Angelo, Texas, president of State Mineral Society of Texas, says that the government has uncovered some giant quartz crystals weighing from 10 to 200 pounds in Crystal mountain, Arkansas. While in search of clear crystals to use in radio, power machinery moved one whole side of the mountain, disclosing the huge crystals.

Orange Belt mineralogical society has elected the following officers for the coming year: Peter W. Burk, president; Dr. Warren F. Fox, Riverside, Calif., vice president; Mrs. A. F. Wade, secretary; I. V. Graham, treasurer; Kenneth Garner, federation director. Election was held at home of I. V. Graham, San Bernardino, with fifty members and guests in attendance. Eighteen rock specimens were awarded as door prizes. A covered dish dinner was planned for June 10 meeting at Sylvan Park, Redlands.

The Rockpile, official bulletin of East Bay mineral society, suggests that if any rockhound goes to Holbrook, Arizona he should search the neighboring open country for pebbles of petrified wood.

Charley Abbott's field trip committee of Los Angeles mineralogical society, and past president O. C. Smith, superintendent of a Richfield refinery, arranged for a field trip through the Watson refinery of the Richfield oil company, Sunday, May 20. The refinery is at Alameda street and Sepulveda in Los Angeles. This is a rare privilege in these times, especially with foremen and engineers provided as guides to lead small groups and explain the various processes. At the May 17 meeting Harry Vroman showed kodachrome pictures of the Joshua Tree national monument.

Southwest mineralogists, Los Angeles, gave awards to the following at the eighth annual show, April 7 and 8—crystals: Alwida Dartt, Zola Barnes, Albert Hake; minerals: Harold Eales, Ethel Prosser, Sam Boase.

A. L. Jarvis of Watsonville, Calif., gave a talk to San Benito minerals association on his wide experience in cutting and polishing native gems and gem materials. He displayed his cutting tools for the interested inspection of members.

William Gale, director research and development for American potash and chemical corporation was scheduled to discuss history of Searles Lake from John Searles to the present time at May 16 meeting of Searles Lake gem and mineral society, Trona, California. Gale has seen 21 years of service in Trona. May display table featured lead minerals. All field trips except those scheduled as annual affairs are to be made to Chris Wicht's to put the place in order and work on swimming pool and barbecue pit.

Ruth Simpson, curator at Heard museum, discussed prehistoric rockhounds at May 3 meeting of Mineralogical Society of Arizona held in Arizona museum, Phoenix. She illustrated her talk with material and pictures. Membership now totals 300. This group plans end of the year Jamboree May 24 and annual picnic June 3. Informal meetings will be held on north lawn of museum during summer months.

ANSWERS TO TRUE OR FALSE

Questions on page 16

- 1—True.
- 2—False. Salt River valley receives its irrigation water from Roosevelt dam.
- 3—True.
- 4—True.
- 5—True.
- 6—False. De Anza crossed the Colorado at the present site of Yuma.
- 7—False. The Great White Throne is in Zion national park.
- 8—True.
- 9—False. The aspen turns gold and sheds its leaves in autumn.
- 10—True.
- 11—False. The date palms on the American desert originally were imported.
- 12—False. The atlatl was a weapon for throwing darts.
- 13—False. The Valley of Fire is a state park in Nevada.
- 14—True.
- 15—True.
- 16—False. The first Powell expedition started from Green River, Wyoming.
- 17—False. Snake priests set the dates for the Snake dance from year to year.
- 18—True.
- 19—True.
- 20—True.

AMATEUR GEM CUTTER

and polishing equipment. Lelande Quick, who conducts this department, is former president of Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, Calif.

By LELANDE QUICK

Many people have written to remind me that there are lapidary courses available in our high schools throughout the land, particularly in California. Robert T. Hatt, director of Cranbrook Institute of Science at Bloomfield Hills, Michigan, advises that they have given lapidary courses "sporadically" during the past eight years. But this was not exactly what I had in mind when I suggested that we need somewhere a definite curriculum on all phases of lapidary procedure—a course that a returning veteran can take with some assurance that when he completes it he is fitted for a job as a lapidary. No course can give him the skill that must come with experience but he should be able to acquire a knowledge away beyond anything he can get from the high school courses that do little more than help to cultivate a hobby. Manual training in schools teaches boys to be handy with tools but it produces few, if any, carpenters or cabinet makers and I've a notion that few people taking present public school courses are equipped for a life work as a lapidary.

Veterans still are writing to ask where they can go to become a lapidary in the same sense that they can learn to be an accountant or a stenographer and I still do not have an answer for them that is satisfactory. I suppose that most professional lapidaries snort at the idea of a man going to school to learn to be a gem cutter, but then a generation ago farmers viewed with contempt the agricultural courses then coming into vogue in colleges where boys went to learn how to become farmers. Those boys made more progress with a farm in five years than their dads had made in a life time and they didn't produce the errors of the dustbowl. Probably that isn't a good comparison but the idea I am trying to convey is that "knowledge is power" and that applies to gem cutting too. If it is practical to give real courses in plumbing and bricklaying in trade schools some thought should be given to teaching lapidary procedure in such a way that a man is prepared to make a career at it and I know of no such schools to which I can direct earnest inquirers. Has anyone something else to offer?

Dr. Duke, editor of the Mineralogist magazine, and Richard Pearl have brought out a new edition of *The Art of Gem Cutting*. I have long recommended this book, among others, to considerate inquirers (and some inconsiderate ones who want me "to take a few minutes to tell them what machinery to use and how to cut gems"). The new book gives most of the answers and offers more practical advice on gem cutting than any book I ever have read. Much of the information comes from articles written by amateurs for the Mineralogist and came out of hard experience from people who have done more in five years to make gem cutting easier than the profession has accomplished in centuries.

Without meaning to be picayune I am puzzled by the constant use of the word lapidarist in the book, as the use of that word where lapidary is intended has disappeared from all other publications. A lapidary is a person who processes rough mineral materials into finished gems and when these gems acquire a setting they become jewelry. A man who is a connoisseur of these gems, although he may never have cut one in his life, is a lapidarist although the newer term, gemologist, coined by the American Gemological society, now is used in books to avoid confusion with the word lapidary. The society however prefers that the term gemologist be

This page of Desert Magazine is for those who have, or aspire to have, their own gem cutting

used only for persons who have completed a gemological course. Lapidist was superseded by lapidarist and of course the word lapidarian never existed. However such a criticism is pointless for such a useful book; it merely is interesting and useful information.

It probably will not happen this summer but there is a strong possibility that next fall and winter will see the greatest descent of the human race on the American deserts that ever has been witnessed. It is estimated that Los Angeles county, California, alone has 20,000 rockhounds, and almost without exception they will flock with their relatives and friends to the desert to see if the rocks are still there. Countless thousands who have had to stay at home and who have done more reading than they ever thought they would do, are going to be newcomers to the desert where the rocks are most easily seen and acquired.

I would like to offer new enthusiasts a word of caution about becoming rockhogs instead of rockhounds. It isn't necessary to pack a car with rocks until the springs break in order to get a handful of cabochons or a few decorative rocks for a garden. And don't break up all the rocks in sight that you can't carry away. What may appear to be just a rock to the uninitiated may be a rare find to someone who knows a geode from a coanaut. If you intend to go to the desert after rocks, arrange to go along with someone who can give you helpful advice. Many times I have a guilty feeling when I look at my cactus and succulent gardens containing enough worthless material to build a house—material that I gathered on my first desert trips when I thought that every green rock was a rare find of "green jasper." Soon, and it cannot be too soon, we shall be going to our healthful deserts again, following that thing which never has been adequately defined but for which we have paid such a price—the American way of life. Let us be respectful and appreciate our desert in such a way that the next visitors who come along will see as much of beauty and interest as we saw. Just because they sometimes are referred to as "wastelands" we don't have to make them so.

It was a great pleasure indeed to meet so many of my Desert Magazine friends and readers at the opening of the gem exhibition (on display, remember, through June 29 in case you still want to see the greatest exhibition of the lapidary art ever held anywhere). I know now that there probably are many more times as many people interested in gems as there are those who cut them. That is why this department is conducted as it is, not merely as a listing of motor speeds and grit sizes. Many people told me they became gem conscious through Desert Magazine. The 13,000 visitors passing through the display on the first two days did not permit much of a chat with any one individual, which I am sure was understood. But I thank you for your gracious words and for coming to the exhibition, an account of which is presented elsewhere in this issue.

DID YOU KNOW . . .

- The largest alluvial diamond ever found in North America was found at Peterstown, West Virginia, in April, 1928, by Grover Jones. It weighed nearly 34½ carats and is on loan to the U. S. National Museum. Mr. Jones is the father of 17 sons, all living, several of whom also are on "loan" to government services.

New Data on Alumina

R. F. Geller and P. J. Yavorsky, of the staff of the National bureau of standards have made certain measurements and determined that the melting point of alumina (AL2O3) lies between 3630 and 3690 degrees Fahrenheit. The old value usually given was 3720 degrees.

Alumina is the oxide of aluminum. As pure alumina it appears in the mineral world as rubies and sapphire, and with added water of crystallization, as bauxite and clays. In one form or another, it is used in industry for emery cloth, in super-duty spark plug insulators, refractories, watch jewels, gem stones, etc.




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Just Between You and Me

By RANDALL HENDERSON

IF ONE may judge from the letters coming to Desert Magazine office, just about everybody and all the relatives are planning motor trips in the postwar days when there will be plenty of gasoline and tires and leisure for that kind of thing.

And since many of the finest scenic and recreational areas in the West are located in the desert regions of Utah, New Mexico, Nevada, Arizona and California, I am beginning to wonder where and how we are going to find meals and lodging for all the visitors. Even in this war period, the housing accommodations, both for transients and permanents, are taxed to the limit.

Of course much of this surplus population is transient, and will be moving on when the war training period is ended. Nevertheless, on a basis of estimates made by various travel agencies, it appears probable that for many months following the lifting of wartime restrictions on manpower and travel equipment, the roads leading to the recreational areas will be clogged with folks going somewhere.

The chief bugaboo of travel these days is the "No Vacancy" sign. And it probably will be worse after the war. These signs, like certain species of desert cacti, blossom most profusely at night. About noon every day they begin to appear along the roadside. By nightfall they are seen on nearly every inn and motor court.

All of which is good business for the proprietor—but most exasperating for the motorist who at the end of a long day's travel has to go from one hostelry to the next begging for "just a cot—or anyplace for a few hours' sleep."

I've found a simple formula for beating the "No Vacancy" nightmare, and perhaps some of Desert's readers will be interested. My solution will not appeal to everyone. Nevertheless, it offers a carefree way to travel on the desert where there are at least 300 nights in every year when one with proper equipment can sleep comfortably out of doors.

There's always a sleeping bag and a box of groceries in my car. And in the sleeping bag is one of those pneumatic mattresses—the kind that can be inflated either with the tire pump or my own lung power. I rather prefer the latter method because it is fine exercise in deep breathing. I generally carry the two-third length mattress. It serves adequately, and takes less puffing.

In the great expanse of the desert Southwest there are a million dry arroyos and sheltered coves and level mesas where one may park off the highway and spread the bedroll on the ground and sleep in complete security and comfort. I carry a lightweight waterproof tarpaulin, and if it starts to rain during the night—as it seldom does—my bedroll sheds water like a duck.

With adequate bedding, an air mattress and a small pillow that rolls up inside the sleeping bag, one can sleep as comfortably out under the stars as on any mattress that ever was invented. And my Indian friends tell me it is "good for white man sleep on ground, all same Indian."

Traveling with that kind of insurance gives one a freedom

of action and a sort of gypsy independence that adds immeasurably to the pleasure of the trip—even when I have no occasion to use the sleeping bag. The "No Vacancy" sign holds no horrors because the wide open desert always has ample bedroom space.

Of course there are many possible refinements to the comfort of sleeping outdoors—a cot if you have inhibitions regarding snakes, a wool ski cap for cold weather, a hot rock for added warmth if needed, an electric lantern for reading in bed, a thermos of hot coffee for a morning rouser—but don't bother with a tent.

A few cans and packages of food also are a good standby for emergency—in fact I fare better from my private larder than in four-fifths of the roadside eating places these days. At least I get good service—and there are no more skilled chefs on earth than the cooks who prepare the canned and packaged goods on the grocery store shelves.

Once on a trip through New Mexico I discovered a new function for my grub box. I had stopped at one of the roadside stands where the Pueblo Indian women sell their pottery to passing tourists. When I started to leave without having bought any of the souvenirs, the elderly Indian woman said: "Maybe you have something to trade?"

When I asked what she meant, she said: "You got groceries?"

That was an idea. So I got out the food box, and for the next half hour we had a grand time swapping sardines and canned peaches and soda crackers for decorated pottery. I would select a piece of earthenware. Then she would reach into the box and set out the items she wanted in exchange for it. Of course she asked more than it was worth—or expected to get. So I would deduct a can of spaghetti, or reach into her stock for another piece of pottery.

She would giggle and I would haggle—and I don't know yet who got the best of the deal. But we both had a lot of fun.

Yes, the food box is a useful item, whether you are on a camping trip or not. And with a sleeping bag stowed away with the luggage for each member of the party you can laugh at those "No Vacancy" signs, and the memory of that night on the sand will become one of the most pleasant recollections of the trip.

* * *

The weather man has his dates all mixed up again. This is early June, and in this sector of the great American desert, we are still sleeping under blankets. Contrary to what many off-desert dwellers might think, the cool summer weather is not welcome here. The melon harvest is a month late and other farm production is being retarded.

But the desert itself goes along unperturbed by variations in the weather. The smoke trees in the washes are laden with indigo blossoms and the rocky slopes on the higher elevations are decorated with the gorgeous flowering stalks of yucca and nolina. The plants and animals of the desert world are highly adaptive. That is the reason they have survived. We humans also survive better—in terms of youth, health and happiness—when we keep our adaptive functions active.



Desert Blossom

This photo of a Prickly Pear cactus flower was taken by Margaret Bundren of Dallas, Texas, with a Recomar 33 camera. F 4.5 lens, 1 sec. at f. 32
HGFA Isopan film.

JULY, 1945



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