

THE

Desert

M A G A Z I N E



NOVEMBER, 1943

SIXTH ANNIVERSARY

25 CENTS

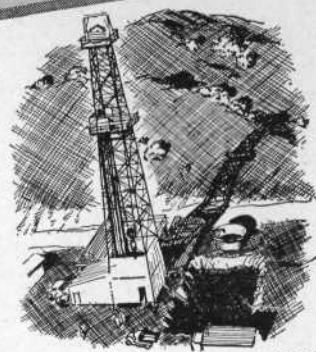
PICTURE Quiz

ANSWERS AT BOTTOM OF PAGE



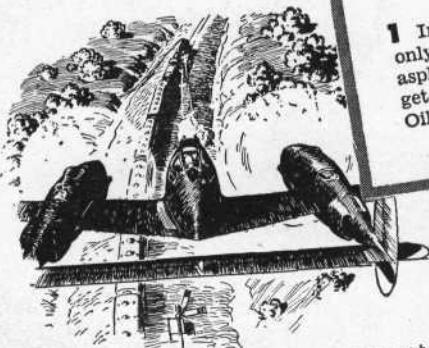
1 In 1890, when Union Oil first went into business, the only petroleum products people used were kerosene, asphalt and axle grease. We had to burn up gasoline to get rid of it. How many products would you guess Union Oil makes from a barrel of crude today?

Check One: 25 ☐ 136 ☐ 492 ☐



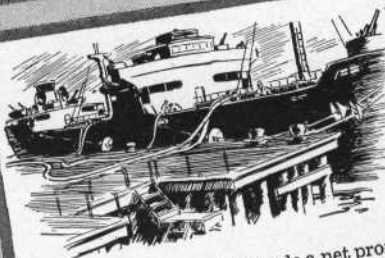
2 The average oil well in California costs about \$65,888 to drill. Last year 169 exploratory wells were drilled. How many proved of any importance?

Check One: 5 ☐ 47 ☐ 126 ☐



3 What brought about the development of 100 octane gasoline?

Check One: U. S. Govt. Research ☐
Battle of Britain ☐
Competition between the oil companies . ☐



4 Last year Union Oil made a net profit of \$5,537,329—3.8% on its capital investment. How much did this average per stockholder-owner?

Check One: \$174.94 ☐ \$2,356.22 ☐
\$15,632.41 ☐



7 Everyone who works at Union has to have "tools"—a desk, a tank truck or perhaps even a \$6,000,000 refining unit. What do you think the cost of this equipment will average per employee?

Check One: \$946 ☐ \$4,251 ☐ \$35,696 ☐



5 Nobody has to be told that the cost of living has gone up. But how many things would you say there are that have not increased in price since the war began?

Check One: None ☐ 5 ☐ 26 ☐



6 Out of every dollar you spend with the Union Oil Company, how much do you think goes directly for taxes?

Check One: 8¢ ☐ 14½¢ ☐ 20½¢ ☐

answers

1 492—The business has become so complicated we had to look this one up ourselves.

2 Only 5 proved of any importance.

3 Competition between the oil companies—By 1939, when Germany invaded Poland, U. S. oil companies had already developed 100 octane

to the point where they could produce it in volume on an economical basis.

4 \$5,537,329 is a lot of money, but it was divided among a lot of people—31,652. So it averaged just \$174.94 per stockholder.

5 This isn't official, but we've done a lot of research and we can't find more than five—cigarettes, gasoline, electricity, home gas and interest rates.

6 20½¢—It takes taxes to win a war. The average Union Oil employee made \$211 per month in 1942; but the tax collector got more of your dollar last year than all 8,192 of our employees put together (20½¢ to taxes—20¢ to wages) and 4 times as much as the stockholder-owners.

7 \$35,696—The machine age has made our tools of production rather expensive.

UNION OIL COMPANY OF CALIFORNIA

AMERICA'S FIFTH FREEDOM IS FREE ENTERPRISE

This series, sponsored by the people of the Union Oil Company, is dedicated to a discussion of how and why American business functions. We hope you'll feel free to send in any suggestions or criticisms you have to offer. Write: The President, Union Oil Co., Union Oil Bldg., Los Angeles 14, Calif.

DESERT

Close-Ups

• With this issue Desert Magazine begins its seventh year. Over there in North Africa where Desert's editor is serving with the armed forces, this anniversary despite the fast moving war scene, will bring back memories to Randall Henderson—especially that first birthday of Desert's, when we boasted around a thousand subscribers. Today, on our sixth birthday, Desert's reader-family is fast approaching the 100,000 mark. That's a record for a magazine with no promotion or publicity department. It's a tribute too to the ideals and imagination and judgment of Desert's founder—Randall Henderson.

• Next treat in store for desert rock-hounds is an imaginary trip into time—two million years back, into a strange world of volcanic activity, forests, rhinoceri, three-toed miniature horses and camels—in the Mojave desert! That's the setting Jerry Laudermilk has described with dramatic realism for his story of petrified wood.

• Sidney Armer this month relates the humorous experiences encountered when he and his wife Laura Adams Armer established their home in the remote Navajo country of northern Arizona. He studied art in San Francisco and until 1940 most of his work was illustration. More recently he has been occupied with painting California wildflowers. Visitors to Los Angeles museum of art will see a group of 60 of these paintings in the permanent exhibit. Navajo sandpaintings mentioned in this month's story were made by Laura for Mary Cabot Wheelwright as part of the most important and complete collection of sandpainting reproductions in the world, now housed in the Museum of Navajo Ceremonial Art in Santa Fe, New Mexico.

• "The Gods Walked Up There" is a genuine desert Christmas story—the Navajo story of creation and the beginning of the world as told to Richard Van Valkenburgh by the Mountain Chant Singer. It will be illustrated with a set of panels created especially for this story in tempera by Van Sinajinih. This Navajo artist has achieved the finest work of his career in beautiful simplicity and gentle color. Van (the writer) says his technique is strikingly like that used by Little Sheep, the primitive Navajo artist (—1835) whose polychromes have been found on the walls of Canyon del Muerto. With Charles Keetsie Shirley and Hoke Denetsoi, Van Sinajinih ranks as one of the foremost Navajo artists. In addition to being an exceptionally fine muralist, he also has illustrated a number of books and articles dealing with his people.



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Fort Lowell Ruins

By J. WILSON McKENNEY

Merced, California

To quell Apache Indian troubles, Fort Lowell was established by army order March 23, 1873, and became center of Tucson's brilliant social life. A few crumbling

walls remain of the once extensive adobe post. Seven miles north of Tucson, Arizona, this scene looks north toward Rillito creek and Catalina mountains beyond.



Members of Julius F. Stone's 1938 Colorado river expedition at Lee's Ferry. Left to right—Charles Kelly, Frank Swain, George Stone, William A. Cryst, Dr. A. L. Inglesby, Julius F. Stone and Dr. Russell G. Frazier.

Lee's Ferry on the Colorado

If Painted Desert were the climax of your Arizona trip, and you were on your way to the Utah parks of Zion and Bryce, you would cross the Colorado river over beautiful Navajo bridge, on U. S. highway 89. You probably wouldn't notice the dim road turning off downstream at the service station just north of the bridge . . . And you thereby would miss one of the most interesting places on the Colorado river, a point known to river explorers since 1776. Although it has been the supply station since early times for every group of voyagers along the entire length of the Colorado, it is best known to the public for its association with John D. Lee. Fleeing Utah in 1872 to escape punishment for his part in the Mountain Meadows massacre, Lee with two of his numerous wives settled at what is now known as Lee's Ferry. Charles Kelly sketches the history of this historic site and he relates the tragic end of the man who is called Arizona's first Indian trader.

By CHARLES KELLY

ROUNDING a bend in the Colorado river about a day's journey south of the Utah-Arizona state line, we saw an opening in the high canyon walls which had enclosed us for many days. Drifting downstream we passed a log cabin on the right bank and on the opposite side saw traces of an old road. Five of us, in two canvas boats, had come down the river with Dr. Julian H. Steward on an archeological expedition for the University of Utah.

We were all happy to realize we had reached Lee's Ferry, terminus of our voyage. It had been excessively hot in the canyon, we were badly sunburned, and a month's exploring for ancient ruins had exhausted our grub supply. Landing below the old cabin we beached our boats and crawled beneath some nearby willows whose shade afforded but little relief from the temperature of 130 degrees.

Having arrived one day ahead of schedule we had time to explore the vicinity of

the famous old ferry before Frank Beckwith and Maurice Howe arrived with cars to take us back home. It was time well spent, both from a scenic standpoint and because the place was important in pioneer history. Since then I have visited it many times, by river or overland, collecting facts on its early history.

Lee's Ferry has been the terminus for many boating expeditions on the upper Colorado river, the starting point for even more expeditions through the wild rapids of Grand Canyon, and the supply station for every group of voyagers through the whole length of the Colorado. Major Powell first visited it by boat in 1869, and again in 1871.

Nathan Galloway, trapper, landed there with many bales of beaver furs. Julius F. Stone, with Galloway, stopped there in 1909 only to find his supplies had not arrived, and was forced to continue on short rations. It was the supply station for several U.S.G.S. mapping expeditions. Dr. Russell G. Frazier used it as the starting point for the third leg of his river journey. In more recent years it has seen Norman Nevills begin several voyages through Grand Canyon. Since it is the only point between Greenriver, Utah, and the foot of

Bright Angel trail where supplies can be obtained, it always has been an important stopping point for every river voyager.

To most persons the fame of Lee's Ferry lies principally in its connection with the personality of its first settler, John D. Lee. But it was geographically important in pioneer times because it was the only possible crossing of the Colorado for wagons between Gunnison's crossing on the Green and Pierce's Ferry below Grand Canyon.

At the mouth of Paria river, where the old ferry is located, the canyon walls break down sufficiently to allow wagons to reach the river and get out on the opposite side. But the crossing is not a ford. Instead, the river runs deep and swift, with a rapid just below the Paria's mouth.

The history of this spot runs back to 1776, when Father Escalante, first white man to visit Utah, decided to turn back to Santa Fe rather than continue on to California. His return route was obstructed by the Colorado's deep canyon, but Indians told him they sometimes crossed at the mouth of the Paria. When he reached that place and looked at the muddy swirling waters and the rapid below, he was afraid to attempt a crossing since he could not swim. He continued 40 miles upstream before finding the old Ute crossing where he was able to ford without swimming his horses.

Eighty-one years passed before any white man is known to have again visited the place. Early trappers may have seen it, particularly Jim Baker in 1841, but if so they left no record. In 1857 two Mormon scouts, C. A. Huntington and C. E. Holladay, reached the Colorado at that place, although they probably did not cross. Their names were discovered on a rock above the river in 1938 by Billie Weaver, daughter of Leo Weaver.

The next visitor, so far as we know, was Major John W. Powell, who stopped there to repair his boats in August, 1869, before continuing on through Grand Canyon. Powell says he recognized the place from



Above—Robert B. Hildebrand in front of the old log pier which elevated the ferry cable. Note landing across the river and old emigrant road leading right to the Little Colorado river. Below—Original John D. Lee cabin. The author, right, with Mr. Hildebrand who as a boy spent a year with Lee at Lee's Ferry.

a description given him by a Mormon missionary, probably Huntington.

In October of the same year Jacob Hamblin, famous Mormon pioneer missionary to the Indians, crossed the Colorado at that point, swimming his horses and raft-

ing his supplies. Previously he had made several trips from Utah to the Moqui villages, using the old Ute ford or Escalante crossing, but on this occasion he was scouting a possible wagon road into Arizona. He found evidence that Navajo Indians had been crossing the river on their raids into Utah.

Traveling overland Major Powell crossed the Colorado at Lee's Ferry in 1870 on a visit to the Moquis, using an old boat, the *Cañon Maid*, abandoned in 1869. This was the first known crossing by boat. On his second expedition Powell reached the crossing on October 23, 1871, the end of his explorations for that year. One of his battered boats, the *Nellie Powell*, was used to ferry over Jacob Hamblin, who had just arrived from another trip to the Moquis. This might be called the beginning of ferry service.

In the summer of 1872 some of Powell's men were sent back to the mouth of Dirty Devil river to bring down a boat cached there the previous year. When they reached Lee's Ferry on July 13 they were surprised to find John D. Lee and one of

Lee's Ferry, looking downstream from the old ferry house toward mouth of Paria river. Photo by Hoffman Birney.

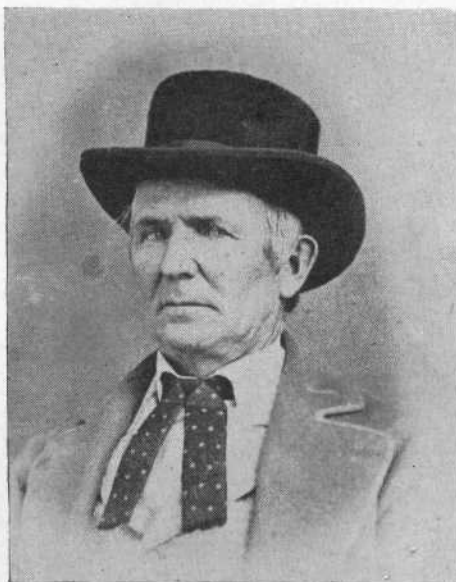


his numerous wives living in a rude log cabin built early that spring. He called the place appropriately "Lonely Dell."

Back in 1857 John D. Lee, with about 75 others, had taken part in the Mountain Meadows massacre, when a party of 145 emigrants had been almost completely exterminated. For 15 years nothing had been done to punish the perpetrators of that crime. But by 1872 the government finally began gathering evidence and hunting for some of the men involved. Lee was advised to leave Utah Territory, so he selected Lonely Dell as his hideout, then one of the most isolated spots in the West.

During the following winter Lee built a two-room stone house, and later another strong stone building known as Lee's Fort. A high hill nearby still is known as Lee's Lookout, although it is doubtful if he used it for that purpose. To this hidden spot Lee moved two of his wives, Rachel and Emma, with their families, leaving 17 others scattered in various parts of Utah. In 1873 a number of other men implicated in the massacre, feeling they might be safer outside Utah, decided to move south to the Little Colorado in Arizona. The only place they could cross the Colorado with wagons was at the mouth of the Paria, where it was determined to locate a ferry. Fifty men were sent to assist Lee in constructing a trail up the cliffs on the left bank.

The original ferry was a heavy barge built of cottonwood logs and operated by sweeps large enough to accommodate one team and wagon. When it was swept away



John D. Lee. From a rare old photograph in the collection of Edna Lee Brimhall.

by one of the Colorado's annual floods another was built to accommodate three wagons. It was lost with its cargo in 1876, one man being drowned. A number of other ferry boats suffered the same fate.

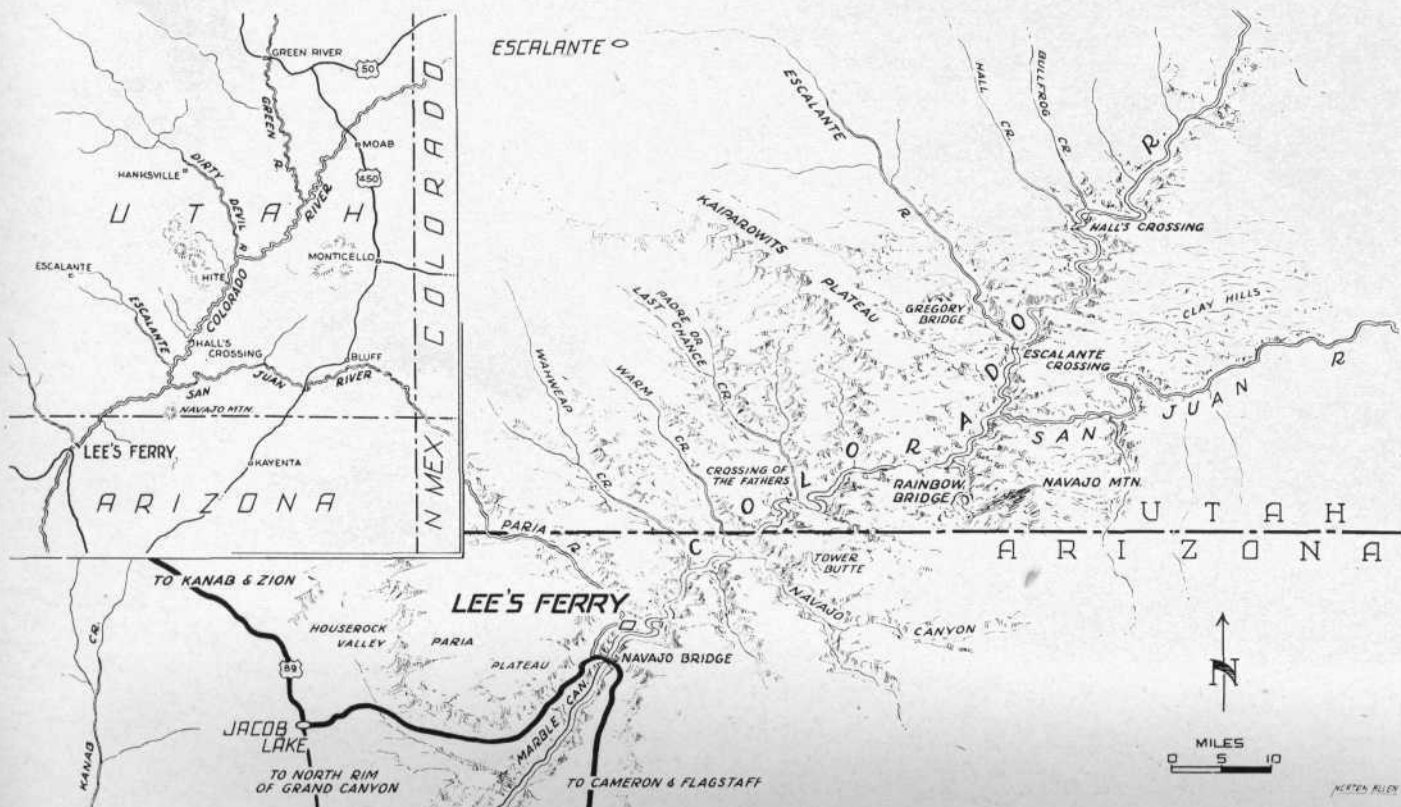
When the ferry was in operation Brigham Young ordered a number of families to cross the Colorado and settle in northern Arizona. For several years afterwards each summer saw long lines of Mormon emigrant wagons waiting to cross the river

at Lee's Ferry in order to reach Moenkopi, Sunset, Snowflake and many other pioneer settlements on the Little Colorado, Salt and Gila rivers. Although some settlements failed, most of them succeeded and a majority of the early settlers, grandparents of many prominent Arizonans, crossed the Colorado at Lee's Ferry.

Soon after it began operating, a large number of Navajo came to the river and wanted to cross on the new ferry. Lee carried them all without charge in order to keep them friendly if possible. In order to make a profit on this operation, he opened an Indian trading post, said to be the first in Arizona. Jacob Hamblin, sent to the river to prevent the Indians from raiding Mormon herds, also traded with them during one winter while Lee was absent.

In November, 1874, while visiting some of his wives in Panguitch, Utah, John D. Lee was arrested by United States officers. Tried in Beaver, the jury disagreed and he was released on bail, returning to the ferry. At his second trial he was convicted and in March, 1877, executed at Mountain Meadows, the only man to suffer punishment for the massacre.

His wife Emma operated the ferry alone for a year or two but was forced to leave when Brigham Young turned it over to the Johnson family, some of whom remained there until recently. In later years it was moved about a mile upstream where an easier out was found on the south bank and where a log ferry house was built. At

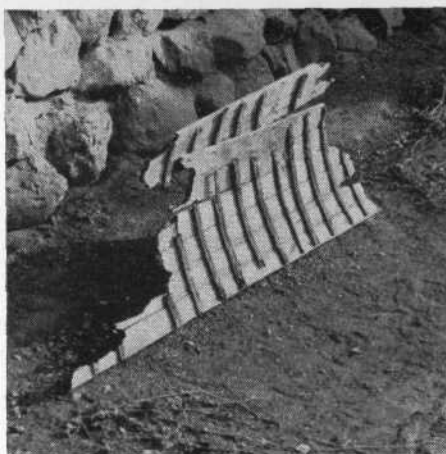


this location where the river was narrower, a heavy rope was stretched, making operation of the ferry barge easier and presumably safer.

When Frank Beckwith met us there in 1932 he brought with him Mrs. Chris Gronning, a woman past 60 years of age. Her family had crossed on the old ferry in 1879. "The river was extremely high when we reached here," Mrs. Gronning told us, "and we had to wait a week for it to go down. Father took sick, our cattle ran off, and we had a pretty tough time of it. Although I was only eight years old, I had to drive one of the ox teams while mother drove the other. I was scared to death when we got the wagons on the old ferry boat, expecting to be drowned every minute, but we got across safely. That was 53 years ago, but the place looks just about like it did then."

Two or three years before construction was started on Navajo bridge, the old ferry cable broke while the barge was in mid-stream. Swept down by high flood waters the loaded craft overturned, was smashed on the rocks below and several persons drowned. The cable never was replaced and no ferry has operated there since.

Navajo, Lee's Ferry or Marble Canyon bridge, as it is variously called, was finished in 1929. It spans the head of Marble canyon seven miles downstream from the old ferry, on U. S. highway 89. At the service station just north of the bridge a dim rough road leads to the site of old Lee's Ferry, but few travelers know about it and few ever visit the historic spot.



"We dug out of the sand all that remains of Major Powell's old river boat abandoned at Lee's Ferry in 1871."

Although some of the old buildings have been destroyed, Lee's original one-room log cabin fortunately has been preserved. Behind it stands his old blacksmith shop, where horses were shod and emigrant wagons repaired, with giant leather bellows still in working order. The old dugway up the cliff at the original crossing is still visible although partly washed away, while at the top are remains of emigrant wagons abandoned there many years ago.

On their arrival at Lee's Ferry in 1938, the Julius F. Stone expedition, of which I was a guest, were entertained royally by the Weaver family, who recently had acquired the old Lee ranch. Sitting by the

fireplace that evening Leo Weaver asked Mr. Stone if he knew anything about an old river boat called the *Nellie Powell*.

"Certainly," replied Mr. Stone, who despite his 83 years has a remarkable memory. "That was the boat abandoned here in 1871 by Powell's second expedition. Why do you ask?"

"Because," Weaver said, "I found that old boat half buried in the sand when we took over this place."

"Do you mean to say the old *Nellie Powell* is still here?" Dr. Frazier shouted.

"Yes, Doctor, it's lying in a patch of willows not over a hundred yards from where we sit."

"Come on, boys, let's go!" shouted Frank Swain, our head boatman, as he started for the door.

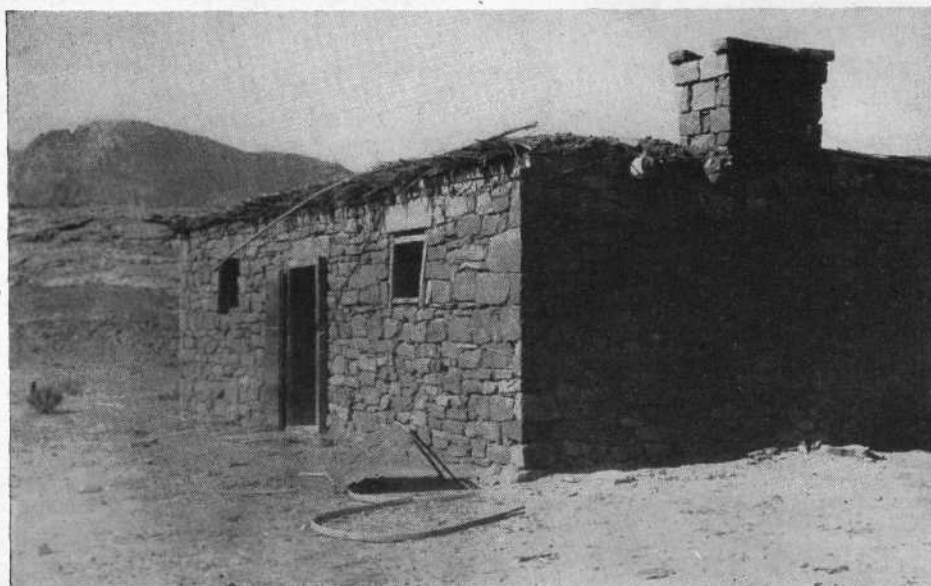
Although it was nearly midnight we all grabbed flashlights and rushed outside. Weaver took us to the spot he remembered, but seemed to have difficulty in finding what he sought. Scratching in the sand I finally unearthed a bit of wood, but it was burned on the edges. Then Dr. Frazier turned up a piece, also charred. Further search revealed more fragments. Then Weaver recalled that a man working on the place had set fire to the clump of willows in which the old boat had rested and everything above ground had been burned. But he remembered seeing the name *Nellie Powell* painted on the bows when he first found it.

In the morning we made a more careful search and finally dug up a section about three feet long and two feet wide. It was made of cedar, reinforced by many small oak ribs, all held together with handmade square copper nails. Each of us took a small bit of wood, but the larger piece was sent by Weaver to the Grand Canyon museum where it now rests with other relics of the Powell expeditions.

For several years a water gauging station has been maintained at Lee's Ferry. But it is a lonely spot and hotter in summer than the well known hinges, for which reasons water gaugers soon ask for a transfer. The assistant gauger, however, seems to be a permanent fixture. Frank Dodge, famous river boatman and champion swimmer, loves the great river and hopes to spend the rest of his days on its banks. Something of a hermit, Frank loves solitude.

Anyone with a genuine interest in the river and its history will find it worth while to drive the seven miles from U. S. 89 to old Lee's Ferry and listen to Frank's stories of fighting the rapids in Grand Canyon. They're tall tales—but he has photographs to prove them.

Lee's Fort. Built with thick stone walls, high small windows and loopholes, it provided a strong defense against attack. Photo by Julius F. Stone, 1909.



The Souths have come home. After a year of wandering in the deserts of Utah, Nevada, Arizona and California, they have returned to Yaquitepec—that home atop Ghost Mountain, looking east across the Colorado desert to the craggy ranges of Arizona. Through the anxious months of searching for an ideal home site, they knew that somewhere it existed. It did. On the very mountain top from which they had set out upon their quest.

Desert Refuge

By MARSHAL SOUTH

ACROSS the dim trail, between a bristling cholla and a bunch of withered mescal stalks, stretched a slender cable of gleaming silver. From its center swung a tiny bell of white silk—a fairy bell swaying gently in the faint stirring of the desert air. A good omen. There in the silence and the warm glow of the late afternoon sunshine it seemed to be ringing a glad welcome. Carefully we turned from the path and stepped around it to avoid injuring the work of the little desert spider whose home it was.

A hush held all the desert. On the horizon the mountains rose up warm and glowing like the rim of a golden bowl—a golden bowl filled with a wine of silence spiced with the fragrance of creosotes and junipers and sage. The whole world was so still one walked as in a dream. We did not speak. No one—not even the irrepressible Victoria—wanted to break that hushed peace. The click and clatter of occasional stones rolling from beneath our feet sounded startlingly loud.

The trail wound up the mountainside, cresting ridges and doubling back across tiny plateaus. Soon we were clambering among frowning boulders—clambering and panting, for we had grown out of practice with steep trails. An inquisitive chipmunk eyed us from a rock top as we rested a moment. Then with a saucy flirt of his tail scuttled for safety. There were junipers here, and bisnagas and the bristling bayonets of rank on rank of guarding mescals. We went on more slowly. For we knew we were drawing near to something.

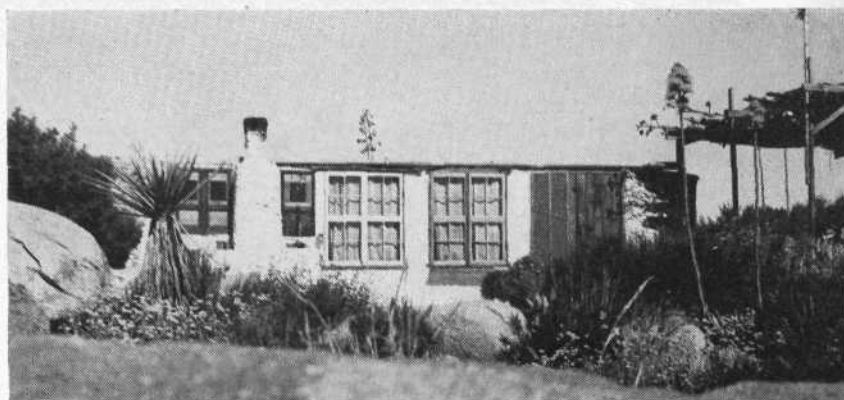
"I see the roof!" Rudyard shouted all at once. "Look, daddy! The roof an' the chimney an'—"

"—An' the 'ittle bird house!" Victoria shriiled in a sudden wild excitement that periled her perch upon my shoulder. "The 'ittle bird house in the twee. It's still there!"

"Yes," Rider said. "That's the roof. And the bird house." He drew a deep, quick breath. "Yaquitepec," he said softly. He darted away, ostensibly to see if his special cistern had any water in it. Rider's feelings are deep and sensitive. But he likes to hide them.

And so, through the junipers and the tall swaying mescal stalks, on that warm, still desert afternoon, we came HOME. Home to Yaquitepec—and to the end of our long trail of wandering and of search. The quest was over. The dream place had been found. Nor does it lessen the satisfaction that we found our ideal on the very spot from which we had set out. Rather it adds to the importance of the search and to the solid joy of the final discovery.

It was not a noisy or exuberant homecoming. The hearts of



This is Yaquitepec, the South home on Ghost Mountain, to which they have returned after a year of wandering.

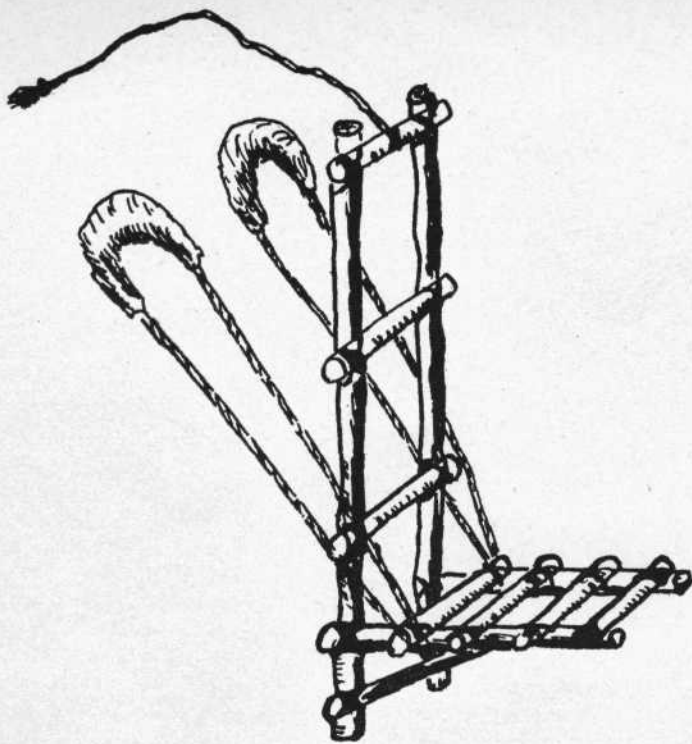
all of us were too full for demonstration. For a long while we did not enter the house. We just sat under the ramada and rested. And drank in the far vast blue-distance of the desert extending east from the foot of the mountain, far below. Everything was still. Hushed and peaceful and sunny. Even the faint stirring of a drowsy breeze along the edge of the western cliff seemed immeasurably far away. And in the midst of the deep, solemn peace the little house, hemmed by its toylike junipers and clutter of giant boulders seemed to hold out invisible welcoming arms to us.

It might have been but yesterday that we had gone. So little had changed. As we began to move about, treading on tip-toe as though reluctant to break the hush, it almost seemed that our whole wandering trail of the past months had been a dream. With a sort of wonder we picked up familiar objects, resting still where we had laid them down on the last day of our going. Save that there were weathered patterns beneath them and faint outlines where the drifting days and infrequent storms had traced their imprints, we might have placed them there just a few minutes before.

There had been visitors to the little house in our absence. But they had been kindly visitors and desert friends. They had disturbed little. Some of the old toys that had been scattered beneath the ramada were ranged in ordered ranks which plainly told that some of the visitors to the little house had been children. And along the edge of the terrace someone had arranged some of our colored rock specimens in a way that bespoke not only artistic appreciation but also loving interest. Several panes of glass had been shattered in one of the front windows. But that evidently had been a prank of the wind.

We went inside after awhile. The front door, which someone had managed to unfasten, was held shut by a prop and several rocks. This loving service, together with the securing of the unfastened front window and the barricading of a loose rear shutter, had been the work of the artist, Thomas Crocker, at the time when he had climbed Ghost Mountain to transfer Yaquitepec to canvas. On the table lay a wide thin piece of clean white board, evidently part of the side of an apple box. It had been headed, in pencil, "Great Register" and upon it several Yaquitepec visitors had inscribed their names. To this improvised visitors' book Mr. Crocker also had added a few lines of friendly appeal to subsequent callers to keep doors and windows securely fastened.

We had expected to find rats' nests and a wild litter of cholla scraps and mescal pods which these industrious little rascals generally haul in to empty houses. But even the rats seemed to have realized that we eventually would return. There was no trace of their activities. On the shelves where we had left them,



Marshal South sketched the carrying chair, or pack board, which he made from mescal stalks and fiber to carry supplies up the steep trail to Yaquitepec. Note padded shoulder ropes and top hand-hold rope.

a few trinkets still stood in orderly array. A couple of pictures hung on the walls. Silence and a thin filming of desert dust.

The house contained but one native tenant . . . a big, philosophic "Tittums 'pider" (Victoria's rendering of Tarantula spider) who sat beside the fireplace regarding our intrusion with a stoical indifference which wasn't in the slightest ruffled when we carefully herded it into an old can and carried it out to a place of safety among the rocks.

Tanya began to open windows and dust tables and chairs—a multitude of little preliminary tasks towards the job of re-establishment. With the beginning of such first tasks something of the unreality vanished. We began to realize that we actually were home once more. With full hearts and a happiness greater than anything we had known since the day of our leaving we all turned to the big job ahead of us.

And it was a big job. Every pound of our personal possessions, which we so laboriously had carried down Ghost Mountain when we had gone away, had to be re-carried up the trail. That was going to be a strenuous job. But it was not particularly this task which gave us concern. Our chief anxiety was the old question of water. That was vital. Hastily we took stock of the situation.

It turned out to be considerably better than we had anticipated. The carefully corked five gallon bottle which, from sheer force of desert habit, we had left in the house on our departure, had not been molested. And the regular inside water barrel still contained about 10 gallons of pure liquid. We went out to inspect the cisterns.

Evidently a heavy thundershower had passed across Ghost Mountain about a week or ten days previous to our homecoming. Evidences of the brief downpour were visible in cut channels in the gravel and in the mud stains in now dry catch holes. Also the overflow pool, to which the roof guttering had been con-

nected, was still about a quarter full of water. It wasn't good water because the open cemented pool had become cluttered up with trash during our absence. Still it was water.

Our main drinking water cistern was dry, except for a slime-crusted puddle in which a defunct centipede reposed peacefully amidst a litter of other "animalitos." Another smaller cistern likewise was bone dry. The same was true of a couple of other containers. But to our great joy a carefully covered tank still retained, bug-free and pure, the 60 gallons or so of water which we had left in it. This store, with the water in the house, gave us a head start on the water question of about 75 gallons. We suddenly felt our chief worry evaporate.

There still was much to be done. On that first trip up the mountain we had been unable to bring much in the way of supplies. So Rider and I hurried down the long descent to the car and trailer. Here we hastily collected a few blankets and essentials and started up the mountain again, taking note, on the way up, of several stout mescal stalks which, on the morrow, could be pressed into service for the making of a "carrying-chair."

Dusk was closing in by the time we returned. Tanya had the lantern lit and a sketchy camp supper on the table—to which we did more than justice. Weary and gloriously happy we all turned in to drowse contentedly towards slumber, lulled by the song of the old, well-remembered desert wind, harping across the cliff edge and the roof-top.

"Towards" slumber, I said. For suddenly, in the still night, there was a crash. Bam! Wham! Clatter-te-clatter-te-clomp! Bam! Slam! Tanya sat up with a startled jerk. Rudyard said "Ouff?" in a scared, inquiring voice. From the depths of her covers Victoria snuffled and yawned: "That is onwy thee owd pack wat. He comed home to his house on thee woof," she observed sleepily. Of course. Temporarily we had forgotten the old pack rat who has his dwelling up in a little pocket under an overhanging roof-eave.

Next day, having fashioned a pack chair from mescal poles and fiber, we settled to the job of carrying in real earnest. A big job. It isn't finished yet. But there is joy in the labor. When you have swung around the circle, and finally proved that your heart lies in the location you started from, the satisfaction of the knowledge far outweighs any physical toil.

For, in summing up, there is for us but one Yaquitepec. No other place, no other scene, in all the desert empire we have traversed, can compete with it. We saw solitudes and beauty. We found wells and waterholes. We gladdened our hearts beside the silver trickles of springs, singing their cool song beneath the glowing lift of desert cliffs. But we found no peace and no contentment like the peace and tranquillity that wraps around the little home that perches on our bald mountain summit. Yaquitepec!

The granite crest shoulders back the driving winds. The ravens wing above it and the savage chollas crouch in the spaces between the tumbled rocks. It is barren and sun scorched and storm harried. And there is no water. But—it is HOME.

CONTENTMENT

*Who knows content? Not the exceeding rich.
Nor yet the prosperous. Nor e'en the poor—
For it is never worldly substance which
Brings sweet content to grow within our core.
Contentment is a spiritual thing,
Nurtured by mental viewpoint and by goal;
The outcrop of imaginings that bring
An understanding peace to heart and soul.*

—Tanya South.



Carlsbad Caverns

Photo courtesy
New Mexico Tourist Bureau

One of the beautiful new caves in Carlsbad Caverns national park, New Mexico, still not open to the public. Thirty-two miles of connecting underground chambers have been explored; well-lighted trails lead through seven miles of the limestone fairyland of stalagmites and stalactites.



Toli, adored by governors, senators, actors, painters. Milner portrait.

"**T**ELL me a story of our people, Grandfather," little Squawpoose begged the grandfather. He looked at the child snuggled against him. With a baby's blessed gift of acceptance, she was at home and an Indian.

Dusk had settled down on the pueblo of Laguna, sprawled on its grey rocky hillside beside the San Jose river in northern New Mexico. Against the crimson sunset the tower of the ancient mission loomed stern and uncompromising, a bulwark against too much modernness. Laguna was the last settled of the Keresan pueblos, dating back to 1697. There are perhaps 200 dwellers in the town but three thriving villages composed of Laguna farmers and herders lie within a radius of 20 miles. Paguate, seven miles away, is the largest of these, and it was there that the grand-

father of Toli tilled his fields and kept his sheep.

The old man began his story in the soft Laguna tongue, but seeing only blankness on Squawpoose's face he turned to stumbling English that she might understand.

"Our people first came from a land in the north, where all Indians lived in a great underground chamber. Mother of all was Beautiful Corn, and when a great power created the earth, the moon, the stars, and all things alive, there was still something missing, the sun! Beautiful Corn stood on a high hill and said, 'There must be light,' and the Great Power created the sun. But he left it floating around loose in the sky, plaything of each wind that blew. Beautiful Corn, being a tidy person, decided it must be anchored, it must be placed where it would do the most

From birth until her fifth year, Toli Sombbrero (Shining Face Big-Hat), Laguna Indian baby, was a member of the White Mountain Smith household in Petrified Forest national monument, Arizona, and Grand Teton national park, Wyoming. Hundreds of famous people knew and loved little "Squawpoose" as she called herself. (She explained gravely that "squaw" meant Indian woman, and "poose" Indian baby, and that she was an Indian woman baby!) Wallace Beery, Ann Rutherford, Leo Carrillo, Chief Thundercloud (Tonto of Lone Ranger fame), were her devoted friends. Jessica Dragonette and Lily Pons sang gay baby songs to her. Governors, senators, painters, photographers adoringly pictured her in her gay scarlet dress and cowboy boots. While Toli lived with her white friends, her young mother spent the years in nurses training at Sage Memorial hospital, Ganado, Arizona. The time came when Squawpoose had to return to her own people in the ancient Indian pueblo of Laguna, New Mexico.

Toli Goes Back to Laguna

By MARGARET STONE

good with its light and warmth. And, like all women, she wanted it to hang where it would be the most becoming to the earth.

"Well, she had it rise in the north, but it didn't look well there. South was just as unpleasing, and for awhile she thought she would leave it stuck on top of one of the nearby mountains in the west. But when it glowed at midday it threw too much light and heat down against a big rock where she liked to sit and rest.

"Beautiful Corn angrily snatched it from the western sky and tossed it out of

sight over the rim of the earth in the east. Tired of all this sun-moving she stretched herself against Mother Earth and fell into a deep sleep. When she opened her eyes the first timid rays of the sun were falling on her, from where it peeked meekly over the earth's edge.

"Come on up where all can see you, Sun," cried Beautiful Corn, 'but when we are weary of your light and heat, sink back out of sight until we are rested.' And that is why the sun comes up in the east and goes out of sight in the west at night. It never has learned how to turn around in the sky and just has to keep traveling all night long to be back in the east when Beautiful Corn wants to see it again."

Every day, every hour in the Indian village was an adventure to little Squaw-poose. She followed her grandfather into the fields where he cleaned the tumbleweeds and silt from the irrigation ditches, as he explained gravely to her that unless water could reach the roots of the corn and wheat and peppers he planned to plant, they could not grow and produce food. If no food grew all the Indians would be hungry.

What crops the Laguna Indians raise in their small irrigated fields are hardly earned. They have some wheat and corn, pumpkins and beans and melons which they store for their winter's food. Laguna Indians are typically desert people, pro-

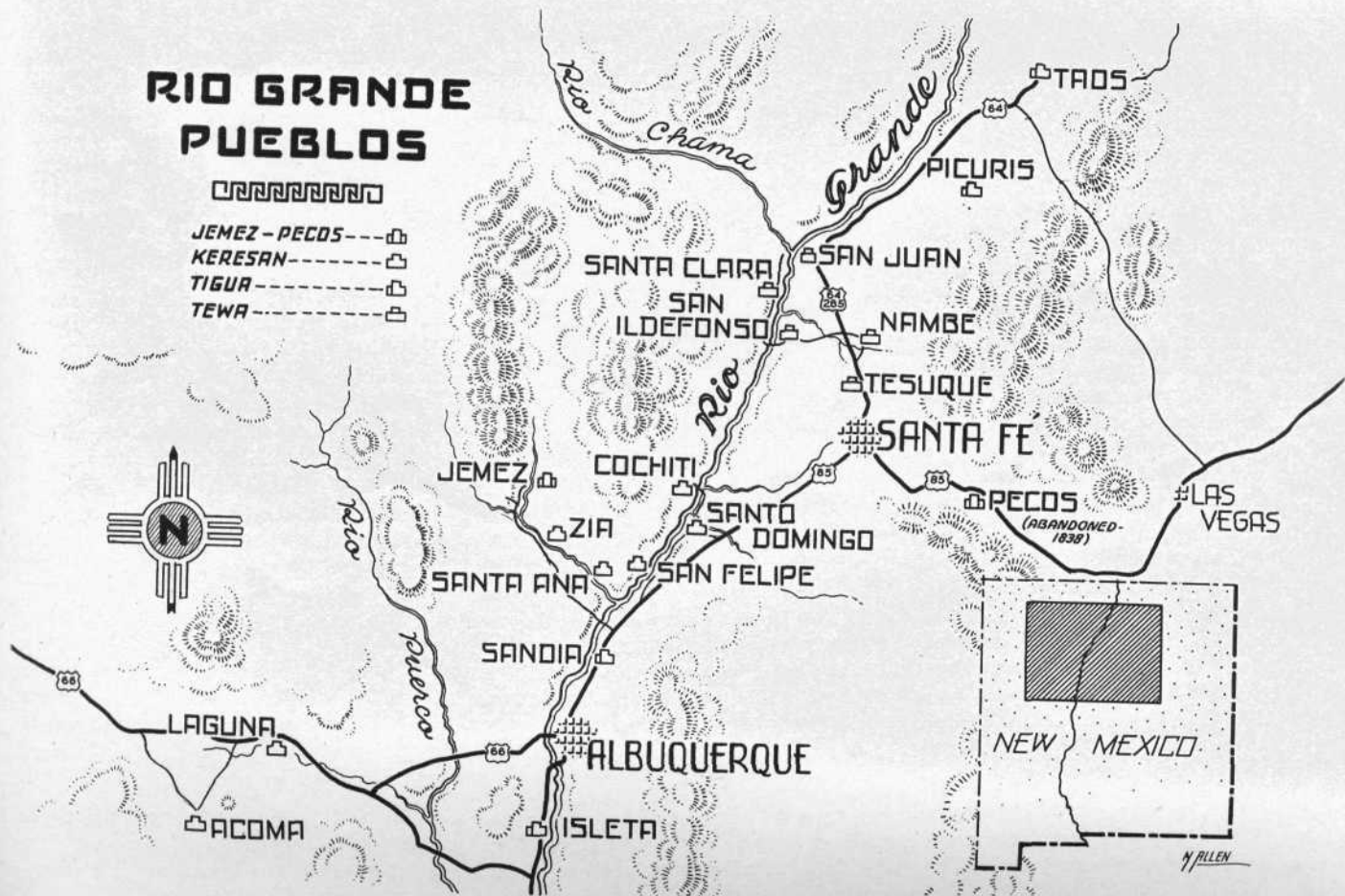


Pueblo Laguna sprawls on the grey rocky north bank of San Jose river, 45 miles west of Albuquerque, New Mexico. Department of Interior photo.

duced by living for generations where living is a full-time job. They have hard enduring bodies, made so by the tough coarse food they must eat and by the demands of a harsh environment. They never have quite enough food to satisfy their hunger, never the necessary clothes, never sufficient heat in winter nor shade in summer.

But they are honest, hard working and uncomplaining.

What real money comes into their possession is through the chili peppers they raise and truck to far-off towns and from the pottery the women make and sell to tourists traveling along U. S. highway 66, which passes through their pueblo. When





Laguna pottery is beautiful in design, but fragile due to poor quality of clay in the region. U. S. Indian Service photo.

the crops are harvested many of the men go to the machine shops of the Santa Fe railroad even as far away as Needles, California.

Laguna pottery is attractive and interesting but quite fragile. The clay in this section of the country is too sandy, and although their design and color are fine, Laguna women never have learned how to fire pottery properly. Small two-headed bird ash trays and little baskets with twisted handles, black and red on white background, are the chief items they offer for sale. The older women and children have erected stone and brush shelters along U. S. highway 66, and day after day they patiently offer poor pottery and bright flashing smiles to passing tourists.

In the fall when the peppers are harvested they are strung on heavy cord and hung to dry. These strings cover the sunny sides of every grey adobe in the pueblo—and there is no more colorful a sight. Artists travel from remote places to paint them, and miles of colored films are squandered on the peppery landscape by movie fans. They pay dearly for the privilege of taking such pictures, as the Lagunas are not famous for their "Welcome"

on the doormat. They know too much about the extremely poor manners of curious tourists to encourage them.

Back some hundreds of years ago the Spanish soldiers and priests came to live in their midst and the Lagunas have found that hospitality to other races does not pay! At that time, according to legend and to records left by the Spanish, there was a large body of water in the valley held there by a landslide which had blocked the canyon through which the river flowed. When Toli begged for another story while Grandfather rested on the low stone step before his door, listening to the homey sounds of the village, he told her about this water and about the sacred serpent that had lived in it.

Almost all the Southwest Indians have a legend of a winged serpent in one form or another. The story of the Laguna sea serpent is to be found in government reports.

"Once, long ago," Grandfather began, "plenty of water lived in our valley. That was when the Spanish priests and soldiers came to this land looking for gold and wealth. One winter the soldiers from across the great water lived in the houses

of our people here in Laguna. They are the ones who told us to call the pueblo 'Laguna'. They said in their language it meant 'lake' or place in the ground where water collects and stays.

"This water stayed happily with us, held from going on down the valley by a big bank of earth and rocks down where the canyon is narrow. It was the lifeblood of our people. Our fields were always full of growing corn and beans and pumpkins, and in the wintertime we were never hungry because we had all the storerooms full of what we had saved from summertime. The Spaniards gave us sheep and they never went far away to graze because grass was everywhere.

"Our fathers tell us stories of a great sea serpent that lived in the lake, but we treated him kindly and he caused no trouble. If now and then a lamb drinking at the edge of the water disappeared, nothing was said about it because after all the sea serpent could just as well have taken one of our children when they waded and played in the water.

"We watered our fields from the lake and it was a fruitful land. Too fruitful for our own good I guess because a tribe living not far away had no beautiful lake with a kindly sea serpent, and they were unable to bear with fortitude the good fortune of the Laguna people. One stormy night there was no moon, and even the stars hid away among the clouds. The envious Indians came and tore away the high dike at the end of the valley where the lake lay imprisoned. The life-giving water rushed madly down the canyon and was lost forever.

"Our old people say the wind wailed and whipped the loose desert sand around trying to stop the water from leaving, but all they could do was in vain. The sand only covered the tracks of the wicked Indians so that in the morning we could not see which way they went. And even now, when there is no moon and the wind calls sadly along the houses in the terraced village the older men say they can hear the despairing cries of our friendly sea serpent as he was swept away from us in the darkness."

Little Squawpoose listened that night, as she lay snug and warm in her blankets, for the sound of the sea serpent. She was ready to hide her smooth black head under the covers, but the next thing she knew it was morning and Grandfather told her she could go across the sandy hills to the farming village of Pagate.

That day they looked over the flocks of sheep, and the little girl played with the mischievous lambs bounding around the warm desert. When they went home to eat

the hot stew and crusty bread baked in an outside oven by Grandmother, a small motherless black lamb went along in the wagon to be the joy of the little girl's heart—and the despair of the neat house-keeping Grandmother.

Now and then the small Indian girl would feel a little homesick for her foster people and then she would try to tell her grandfather about living close to snow-crowned mountains, and going out in boats on deep blue lakes where bears came to the edge of the water and ate huckleberries from the bushes. Of the great sulky moose that used to stand outside the door of the big log house where she lived, and kept her from playing in her swing hung on the limb of a huge pine tree. And she would remember the proud doe that brought her twin babies to look in at the window while Squawpoose and Bill of the household ate their breakfast. Or maybe she'd talk about the pet antelope always begging bread from the kitchen door. She asked if Grandfather knew her friend Wallace Beery or Tonto of the Lone Ranger stories? But Grandfather, wise in the way of homesick children, would take her into the fields with him and she'd be happy again.

She liked to go to the meadow where the grass grew tall and sweet and watch the men cut it with scythes so that it lay in smooth windrows and cured in the sun. In this field it was that her Uncle Felipe almost stopped being alive! He came there one hot day with Grandfather to help cut and rake the hay. But a sudden thunderstorm broke and Felipe was sent to seek shelter under the wagon until the rain would stop.

There was a blinding flash, and when the smoke cleared away one of the horses tied close to the wagon was killed by lightning and the little boy lay senseless with his small face turned up heedless of the beating rain. Grandfather did not forget the laws of his tribe. He longed to snatch the small body in his arms and try to bring back a spark of life into this, his only son. But he stood some distance away, his tears mingling with the falling rain and waited for the medicine man to come and clear away the wicked spirit of the storm. Otherwise it might follow the little lad into the world where he seemed to have gone, and harm him again there.

Minutes dragged by while the village was searched for the medicine man. Friends and neighbors gathered in the rain and gazed sadly at the boy, and many of them wailed softly, adding their grief to that of the mother. The father stood alone and never took his eyes from his child. All at once a small arm moved and then a sound reached the crowd, "Father, I am cold." There was no more waiting for



Squawpoose, when she was 3½ years old.

anything. The stunned boy, brought out of his coma by the cool driving rain in the face, was carried in triumph to the village, and even today he is the object of awe from

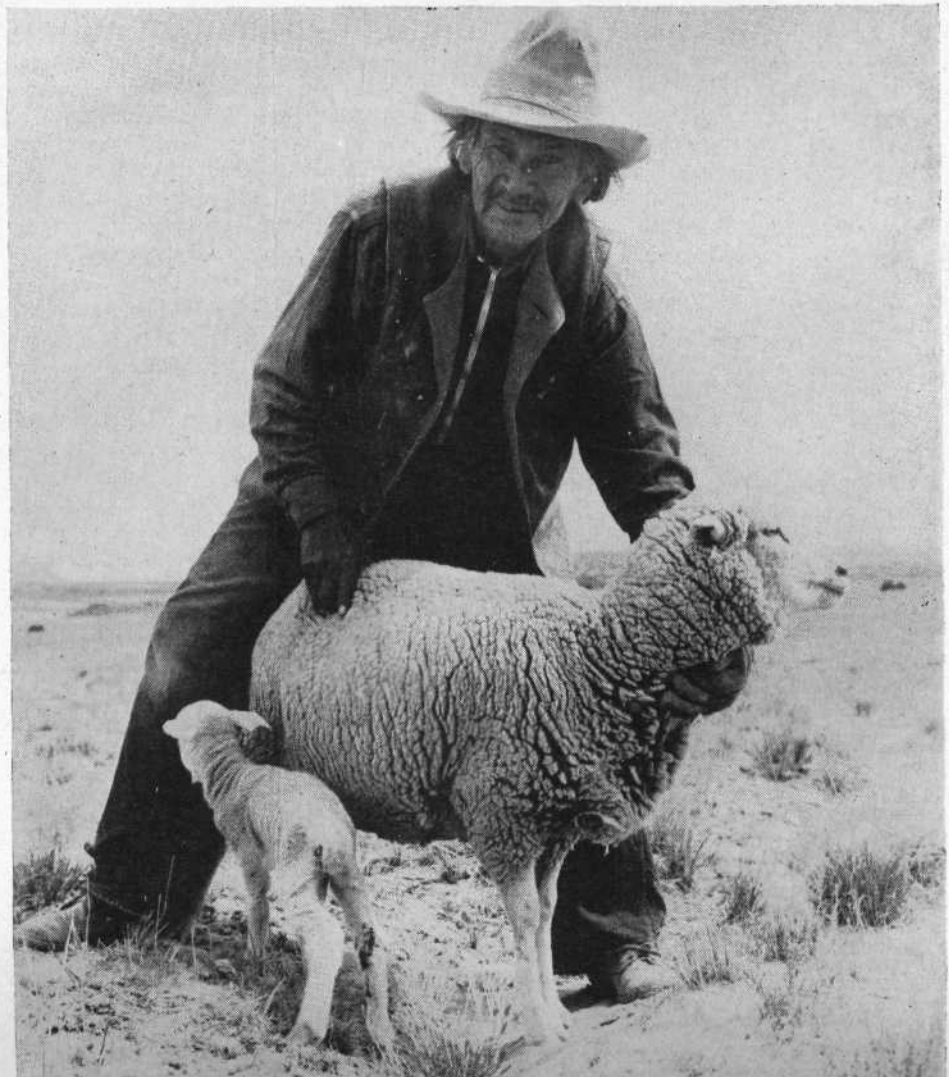
his very old grandmother who knows he is something sacred.

The low whitewashed ceiling of Grandmother's kitchen was always fascinating to the little girl. Here among the strings of peppers were hung bunches of dried sweet corn, the husks stripped back from the kernels and tied together. Now and then an ear would be taken down, the husk chopped off and the ear put to soak overnight. The next time little Squawpoose saw it the corn was part of a rich mutton stew.

Dried pumpkin and dried peaches and apples, strings of green beans dried in the sun and in the wintertime round green melons wrapped in grass and hung in nets added to the food store. When the dry red peppers were being ground to a fine powder in a stone bowl, the little girl always found something to do elsewhere. The pepper got into her nose and made her sneeze, and tears streamed from her eyes.

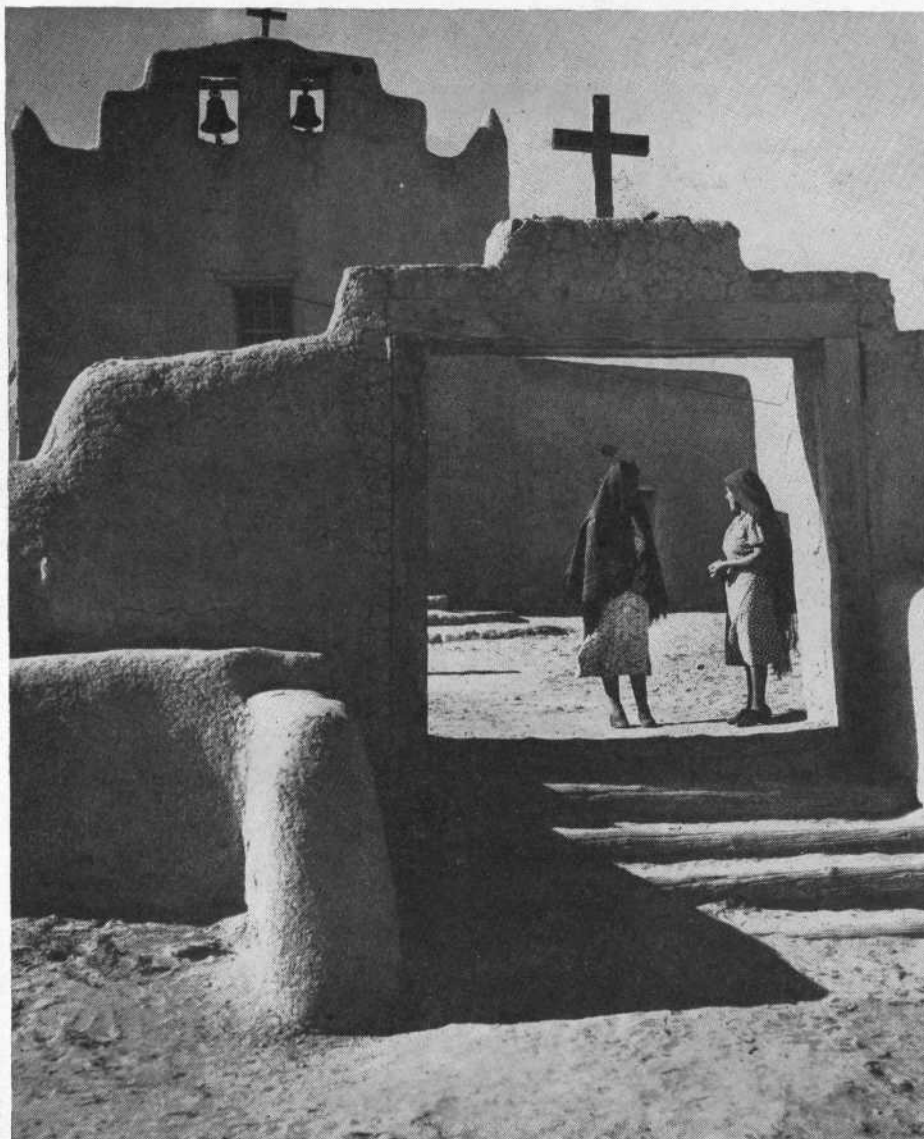
Every week the Indian women made homeground wheat into loaves to be baked

*Toli would go out to the fields where the old man tended the ewes and their lambs.
U. S. Indian Service photo.*



in the outdoor ovens. It was fascinating to see a fire of dry wood built in the little adobe oven shaped like a chocolate drop. A thin stone was placed tightly against the oven door to keep the heat inside. When the fire was burned to coals the ashes were pulled out with a wooden hoe and the floor wiped clean with juniper boughs dipped in water. Right down on the hot floor went the loaves, the stone door shut again, and after awhile when Grandmother saw the sun reach a certain mark on the wall, she opened the door and there was a most delicious smell of hot crusty bread. Sometimes Squawpoose kneaded a special little loaf herself and insisted on Grandfather sharing it with her. The inside of the loaf as not as fine and white as those Grandmother made, but the old man bravely choked it down and told her she was a fine little cook.

Little Squawpoose liked the smell of burning incense and the painted angels on the ceiling in the cool darkness of the grim old church—but she was attuned to the rhythm of the drums as her own people chanted age-old songs to their ancient gods.
United Pueblos Indian agency photo.



Sunday, with prayer-book in hand, the little girl and her grandparents entered the grim old mission, cool and dark and quiet inside. She liked the smell of burning incense and the songs from the choir loft, and it was amusing to turn around and around and look at all the painted angels on the ceiling and the strange hungry-looking saints on cracked canvas back-grounds.

That was nice, but she liked best to go back to the plaza where Indian dancers moved to the thump of a drum and sang songs not taught to them by a white man's church. As they stamped the hard earth and chanted age-old songs to their red gods, imploring them for rain on the parched fields, a chord of memory was stirred in the heart of the child and her own small feet moved in the rhythm of the drums. Toli is Indian!

Sez Hard Rock Shorty of Death Valley

By LON GARRISON



"Oh sure—we have cold weather here in Inferno sometimes!" stated Hard Rock Shorty. "Not that today's any sample o' course but I've seen it get just as cold as you can take it!"

Hard Rock looked out over the landscape shimmering with the rising heat waves and shivered a bit thinking of his last blizzard.

"Why, the last time it got real good an' cold here the cold weather saved my life! That's a fact.

"It was 14-15 years ago. The dude business was goin' good over to the Fried Egg Canyon hotel an' I got so interested in the stories about the feather beds an' the fancy-pants waiters that I went over to look. They give me a room up on the fourth floor an' that was nearly fatal.

"Along durin' the night I heard folks a-hollerin' outside an' bangin' an' runnin' around an' when I opened my door to see what the commotion was all about I found out the hotel was on fire! Yes Sir—burnin' right up an' me there in it an' the stairway blocked so I only had a fourth floor window to get out of!

"I went over to the window an' pulled it up an' looked out. That ground was sure a long ways off! They had ladders up gettin' folks out o' the lower rooms but they sure couldn't reach me. I didn't have no rope—the beddin' wasn't long enough to get me down to the ladder an' I was really just about to join Wing 'A' o' the Fried Egg Canyon hotel in the ashes when I noticed how dad-blamed cold it was outside.

"Yup—it'd really got cold quick an' watchin' the water freeze as it come out o' the fire hoses give me the idea that saved my life. I grabbed the water pitcher, run over to the window, poured the water out the window, an' then after I put my pants on, I slid down the icicle!"

LETTERS . . .

Not Enough Facts in Desert . . .

Twentynine Palms, California

Editor Desert Magazine:

I read Desert Magazine because thereby I enlarge my contacts with the desert and obtain information which is otherwise unavailable to me. However, I find too little in it of the FACTS of the desert and too much of the superior white's account of his contact with the desert, with much airy nonsense about his appreciation of its beauties and so-called hardships.

The human element in the desert, especially the white man element, is a comparatively minor part of it, and is greatly overshadowed by its faunae, flora, climate, geology, etc. My interest is in the straight factual articles you do not, as a matter of policy care to publish. I have to wade through much extraneous matter to get at the facts which are thinly scattered throughout. Occasionally you do publish a largely factual article despite your announced policy and I suppose that is why I continue my subscription though I sometimes think to let it lapse.

The factual type of article need not be a bone-dry affair. It can and does appeal to many of us (I hope to most of us.) You have published articles by Prof. Laudermilk, Mary Beal and Marshal South which contained much meat to interest the non-specialist general reader. To my mind, a good fact is worth more than columns of esoteric descriptive matter written for the fuzzy thinkers. A travelog of a superior white visiting the world of the simple desert Indian wherein the traveler writes of his personal reactions to his "discoveries" of a very few sketchy facts he thinks he is uncovering, heavily watered with much detail of the minutiae of his trip, is almost not worth the wading through to get at those few facts.

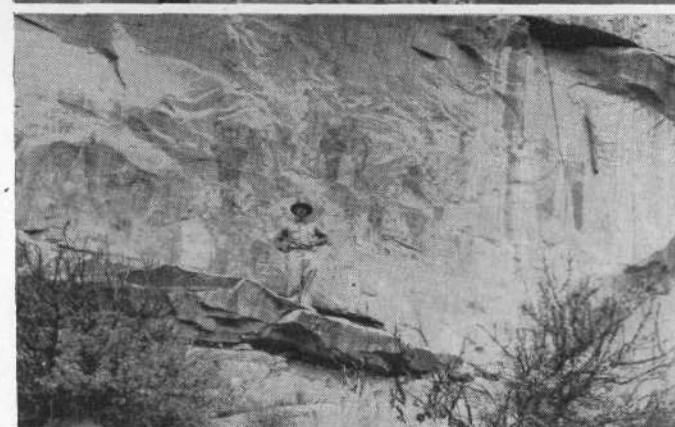
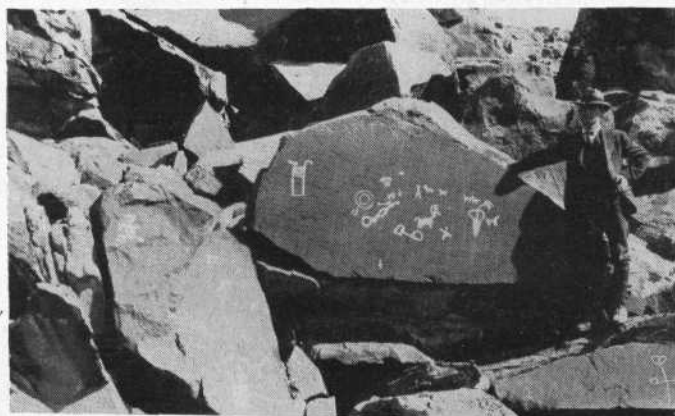
Marshal South's early articles, wherein he describes his experiences in establishing himself and his family on the desert, his accounts of building, pottery making, mescal roasting, experiments with natural desert foods, etc., are more interesting than his later diatribes against the artificialities of conventional civilization.

I realize my particular interests are not necessarily the same as those of all the other subscribers of Desert but I do think my tastes are those of the average moderately educated person who constitute the larger part of your subscription list and who continue to read the magazine year after year because we really are interested in the desert. I do think that if more articles are included containing FACTS of the life and struggles of the real desert dwellers, the animals, the birds, the insects, the plants, the Indians, together with environmental data on the geology, climate, etc., that we readers can supply the drama and appreciation, each to his own ability and need.

You may have some subscribers who enjoy reading the dramatized travel agency accounts of our Southwest Indians but I think most of us would like more Indians and no travelers, more about our chipmunks, kangaroo rats, snakes, cactuses, palms and cloudbursts and less about the ephemeral whites who come in occasional contact with them.

The account of Willy Boy's final adventure was enjoyed by most of us despite the few who complained. We who are adult surely know that most of the early whites were not plaster saints. While I am not advocating a diet of yellow journalism I think Desert should reflect the desert as a whole as it is and not as our pollyannas would like it—all cleaned up with the "stickers" trimmed, the "immoralities" hidden and with wordy bursts of eloquence over the hardy individuals who brave its hardships bolstered with an automobile, vacuum bottles, elaborate camping equipment.

MERRITT W. BOYER



Upper photo shows Mr. Simonson at Hieroglyphic canyon, Utah, as it was in 1920. Middle, same petroglyphs today disfigured by vandals. Lower, another group of petroglyphs in same canyon, showing work of "chiseler clan."

Utahn Scores Destruction of Indian Art . . .

Green River, Utah

Editor Desert Magazine:

My first visit to Hieroglyphic canyon, in southeastern Utah, on the Green river was about the year 1920. At that time the many petroglyphs were free from the obnoxious work of vandals. It is obvious from one of the pictures that those responsible for the mutilation, cared little for the work of our early Indians.

In spite of the laws which carry stiff penalties for tampering with such antiquities the destruction continues unabated, not only in this canyon but in others. I have also seen pictographs that were ruined by those who have painted their names over the pictures or who have bombarded this ancient work with a six gun or rifles.

To stop the devastators from this outrage is not an easy matter. It will require the cooperation of every individual who appreciates and wants to see the work of our Indians remain on the walls of the canyons.

JOHN P. SIMONSON

Desert Tops With Pioneer . . .

Buckeye, Arizona

Dear Sir:

Enclosed find money order for D. M. for one year. We have been reading it for three years but miss it sometimes at the stand.

We think it is tops, as we have lived on the desert for 40 years and appreciate it very much.

A. R. PHILLIPS

About Cactus "Wool" Crop . . .

Brookline, Massachusetts

Dear Mr. Henderson:

Enclosed is a sample fiber from a cactus in Rose Park greenhouse in Hartford, Connecticut. It feels like wool. Through hybridization could not a cactus produce a vegetable wool? I've heard of wool plants in Hawaii found in volcanoes.

MRS. EDNA CLAIRE DAVIS

Dear Mrs. Davis—We asked artist-mineralogist-cactophile John Hilton about possibilities of producing cactus-wool commercially, and below is his answer.—L. H.

Thermal, California

Dear Miss Harris:

Species of *Cephalocereus* from Mexico and *Orocereus* from South America do produce (hair) which is soft and tough and has been used by primitive tribes for weaving, as have the fibers themselves after the flesh has been cleaned away. The skeletons of many of the tropical cereus species are used today for manufacturing small tools, brushes and even the roofs of houses. Only drawback to commercialization is relatively small range of the plants and fact that it would take from 20 to 100 years

to produce additional plants large enough to harvest. Interesting as the hairy and wooly cacti are I think I shall just keep mine for decoration and get someone to shear the wool off a sheep, which will live most anywhere and grow much faster.

JOHN W. HILTON

No Hope for Cactus Wool . . .

St. Louis, Missouri

Dear Miss Harris:

Several thrifty-minded persons have suggested the use of cactus hair as a possible economic product, but in my estimation there is no possibility of it ever being put to commercial use. All the hairy cacti are rather slow growers and have to be many years old before reaching appreciative size. Then too the amount of hair or wool produced on an individual is negligibly small.

LADISLAUS CUTAK,
Missouri Botanical Garden

Coast Guard Made Homesick . . .

U. S. Coast Guard
Cape Blanco, Sixes, Oregon

Dear Sirs:

The U. S. O. brought a number of magazines to our unit last week for the boys to read. Among them was a copy of your March, 1941, issue of the Desert Magazine. I'm a native Californian as well as a desert lover, and I think your magazine is tops.

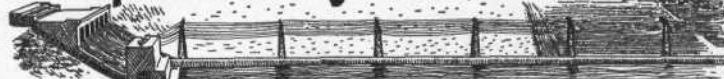
The only trouble is that it causes me to get a bit homesick. I used to love to travel over the desert and take pictures—the photography in your magazine is excellent.

LAWRENCE E. MORRIS, Sea. 1c

The Final Chapter . . .

- The people of Imperial Valley will soon write the final chapter in a thrilling story of progress that has been twenty-five years in the making.
- For a quarter of a century they have fought to secure the future of this fertile valley—to insure the vital water supply—to guarantee the economic future by full development of the great natural resource of power on the All American canal.
- Water they now have in abundance thanks to the All American canal and Boulder dam—danger of flood or drouth is past—soon the story will be completed as full development of the power resource is assured and payment of the canal debt by power sales become possible.
- By purchase of the competing power system—by elimination of this costly competition—by securing a market for double their present sales—the program will be completed and the final chapter written in this saga of progress.

Imperial Irrigation District



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

The Roadrunner

By CARRITA LAUDERBAUGH
Pacific Palisades, California

Does anyone know where the roadrunner's gone
Who used to sit on my fence,
His Halloween noise-maker call sounding out,
So raucous, cheerful, intense?

If anyone hears that he's fighting the war
Or working in our defense,
Please tell him for me to fight firmly and long,
But come, come back to my fence!

POETRY OF THE DESERT

By MARIE ZETTERBERG JELLIFFE
Claremont, California

Poetry of earth within the desert lives
Through bright-hued clouds against a sea-blue sky.

Its cadence fills the hearts of many flowers.
Its rhythm thrills the birds that upward fly
Toward golden suns and moons; the sifting sands

Bejewel themselves in glints of passing light.
Their meter flows along the curving strands.
The mountains raise their gold-lit heads in song.
The lonely plains, the silent waiting trails
Re-echo verse, and melodies prolong.
All Nature's scroll unrolls the musicales
Of stars that sing in chorus to the night.
Each measure in creative glory swells
Where God the Master of all beauty dwells.

VIEWPOINT

By LANORA RUSSELL WHARTON
Long Beach, California

Together, side by side they rode the bus,
Each watching desert landscape gliding back.

To one, the road stretched velvety and black,
A ribbon, through the sagebrush and the flowers,

Exciting wonder at each bend and curve.
The mountain hues gave testimony mute,
Inviting introspection of the soul . . .
A tuneful lure that sang and filled her heart.

The other chewed her gum, then restless, spoke:
"My Gawd! This desert sand sure gets my goat!"

DESERT GLAMOUR

By KATHARINE BUOY
Portland, Oregon

Back to the desert my spirit is flying,
Over high mountains of pine-crested green,
Over white glaciers on lofty peaks lying,
Over wild spaces where storm winds are sigh-

ing,
Over low valleys where rain elves are crying,
Crossing all barricades lying between;

Over barbed cacti in sandy wastes growing
Under the desert sun, fervidly glowing,
Warming the winds from mountain-tops blow-

ing
Over the chollas' illusory sheen.

Purple or lavender colors the shading,
Changing through hours until daylight is fading,

Bringing out stars in a matchless parading,
Waving bright torches on midnight's blue screen.

Back to the desert I find so enchanting,
Silences leaving my spirit serene.
Shadows now lengthen as day is levitating
Over the mountains where shining rays' slanting
Hushes my breath and my heart's restless pant-

ing,
Conscious of entities here, though unseen!



—Photo by V. Stanley-Jones, Garnet, California.

GRAND CANYON

By FRANCES HOPKINS
Newark, New Jersey

Here in the first
Golden solitude,
God left one sunset
And a desert dawn
Held in stone-cut color,
Unfading and eternal
As beauty and wisdom,
Fresh as wonder,
Primitive as song.

DESERT NIGHT

By MELISSA DICKSON
Riverside, California

There is a majesty to space—
This endless, boundless, soundless place.
There is a dignity of star,
Untouchable and so far,
Among this infinite expanse.
I pause to ask my soul, Perchance
Can I alone and in the dark
Make just one mark, one faint small mark?

CREED OF THE DESERT

By JUNE LEMERT PAXTON
Yucca Valley, California

The desert broods over troubled times,
And waits for a change that will be;
It waits for the day of the new-born age—
The age to set souls free.

MOJAVE FUEHRER

By S/SGT. MARCUS Z. LYTLE
San Diego, California

Disordered lines of cloud are smashed;
The conqueror breaks forth,
Leading a blitzkrieg of the sky
Out of the stark hot north.

His war-song echoes through the hills,
He looses fierce white fire
Of parching sun upon the town,
The trees bow to his ire.

His marching cloak flames through the air,
Metallic, desert blue;
Unchecked, his panzers swirl the dust
Down every avenue.

As once Attila conquered France
And Timur stalked through Sind,
This fuehrer overruns our land—
Mojave desert wind!

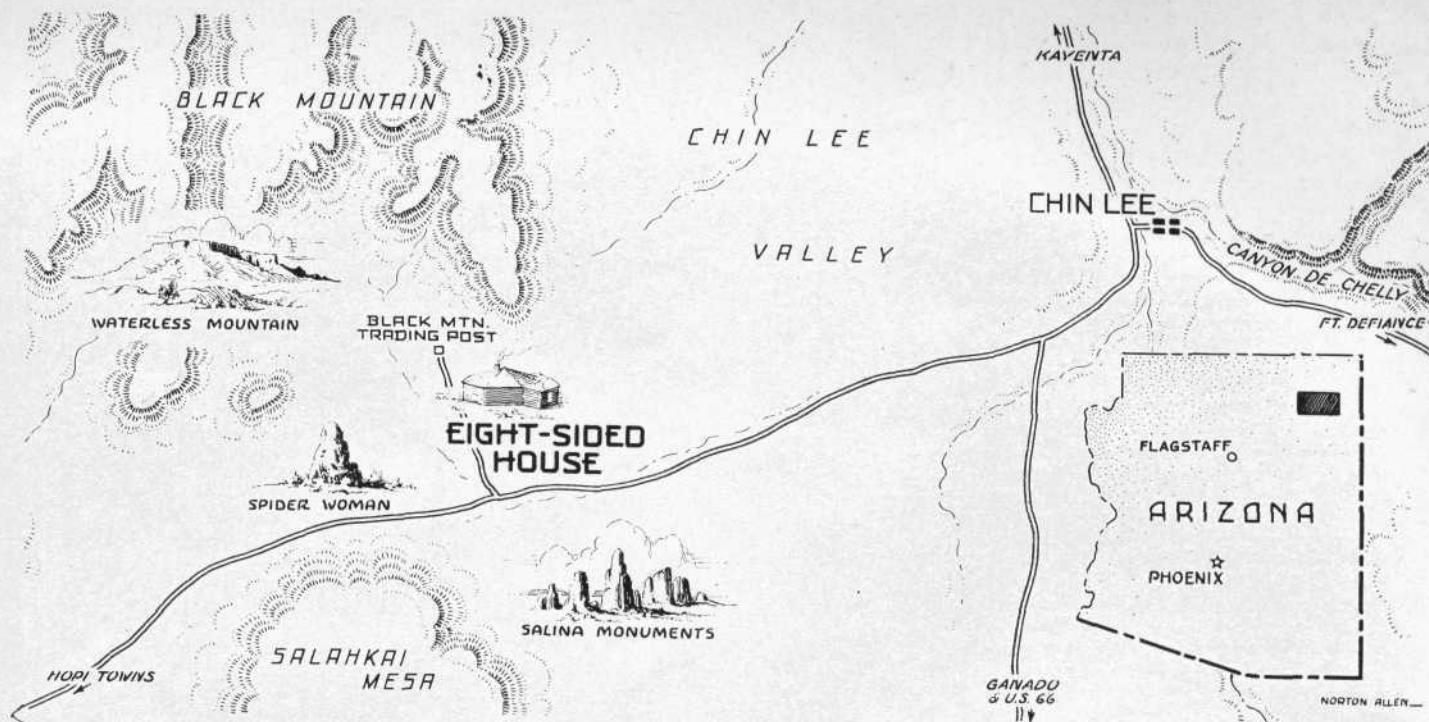
MAGNITUDE

By LELA M. WILHITE
El Centro, California

No land can hold a dread emptiness
Whose solitude is a mute caress
That calmly lies in the evening's haze
To the far horizon revealed in a sunset blaze.

Beyond the wind-etched grey, blown sand,
As if they were a benediction to the serrate land,
Are signals reared, as hope would rise,
The gaunt mountains towering to the skies,

Westward, above the capricious mould
Across the desert, with its floor of tawny gold.
All the earth of empty space can hold no more
Of fulfilled dreams than the desert's store.



Desert Garden in Navajo Land

"All that trouble for a bunch of hosh—and Heart-twisters at that!" was the scornful exclamation of the Navajo Indians who watched Mister Cactus, as they called Sidney Armer, collect native cactus and shrubs to add to his garden. But as they helped him find rare plants about the mesas and canyons of Black Mountain country in northeastern Arizona, a new interest was added to their lives. Soon they were participating as enthusiastically as city Victory Gardeners—and now they know it does make a difference whether a clump of cactus grows here or there in the desert.

By SIDNEY ARMER

IN THE northeastern corner of Arizona, 6,000 feet above the level of the sea, the flat-topped ridges of the Black Mountains enclose a vast stretch of desert wilderness. It is a bleak area of sandstone wastes, with a scattering of small pine trees and wind-bent junipers. Navajo horsemen ride among broken hills and gullies. Navajo flocks pour in grey rivulets over the crests of barren ridges. A bleak area—and the last place in the world one might choose for the making of a garden. Yet that is the setting we chose for our garden of native shrubs and plants.

We had built our house at Black Mountain Trading post because Laura, my wife, knew that a mine of riches lay beneath the forbidding exterior of that area. She had found the desert her chief source of inspiration for her books. Here too she fraternized with medicine men and made copies of their ceremonial sandpaintings.

As a dwelling place a Navajo hogan is romantic but it is apt to leak. If we were destined to live where domestic comfort

was unknown, Laura proposed to introduce at least a bit of it. At her order, Navajo wagons began to haul logs and rock from remote mountains. In due time an eight-sided house was built. Facing the east, it stood on a rise of ground 100 yards from Black Mountain Trading post in the circle made by the road which approached the post from the east and wound out again so the trucks did not need to turn. It was a hogan enhanced by the requirements of soft civilization. The Navajo looked at it in solemn admiration and murmured, "Nezhoni hogan" (Beautiful house).



Waterless Mountain . . . in a vast stretch of desert wilderness . . .

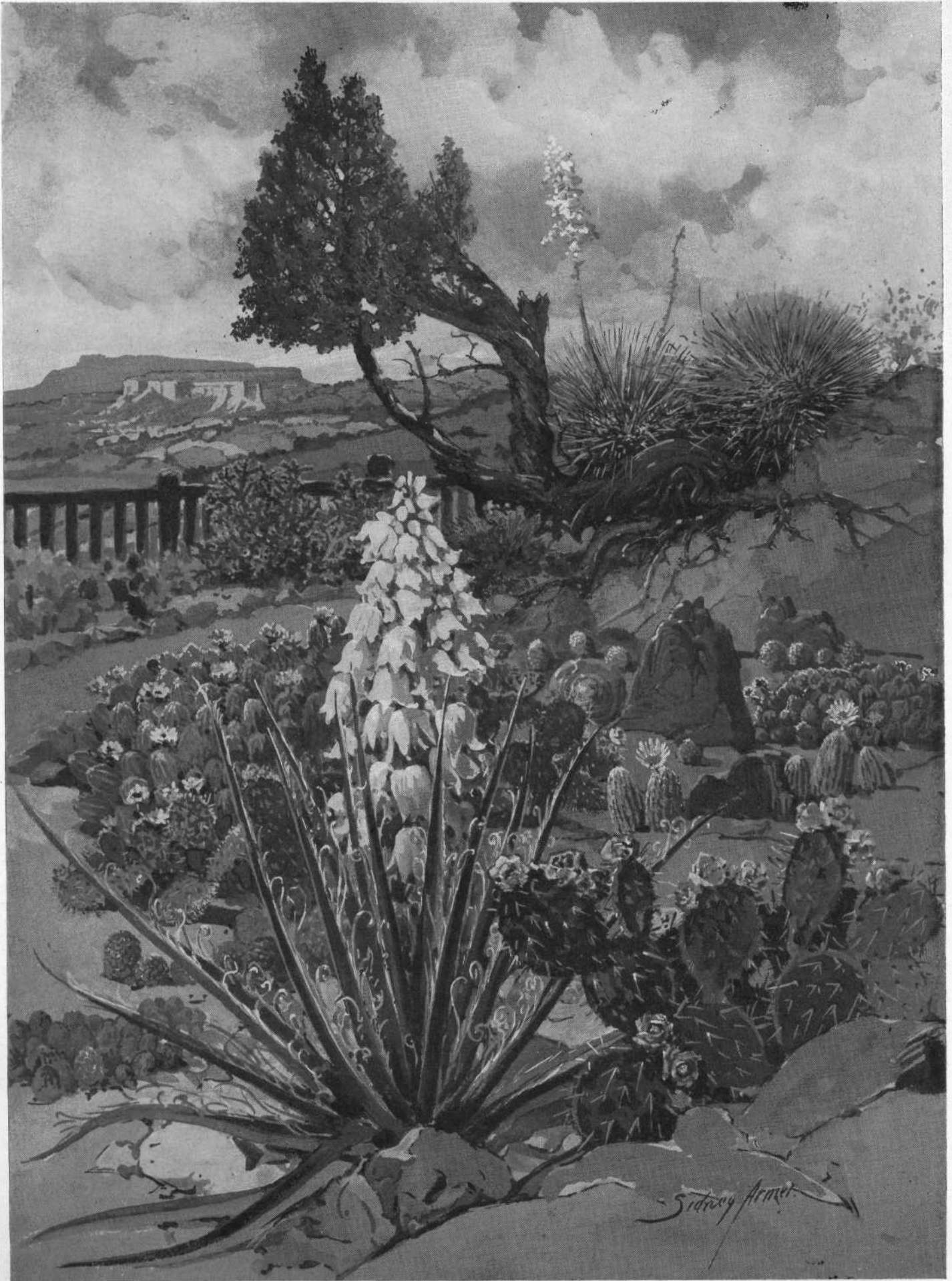
The high altitude and drought condition limited our garden to the plants native to our own district, but we scented adventure in experiment. Whereas Navajo prayers for rain might bring no results, we proposed to see what could be done by causing dishwater to do double duty.

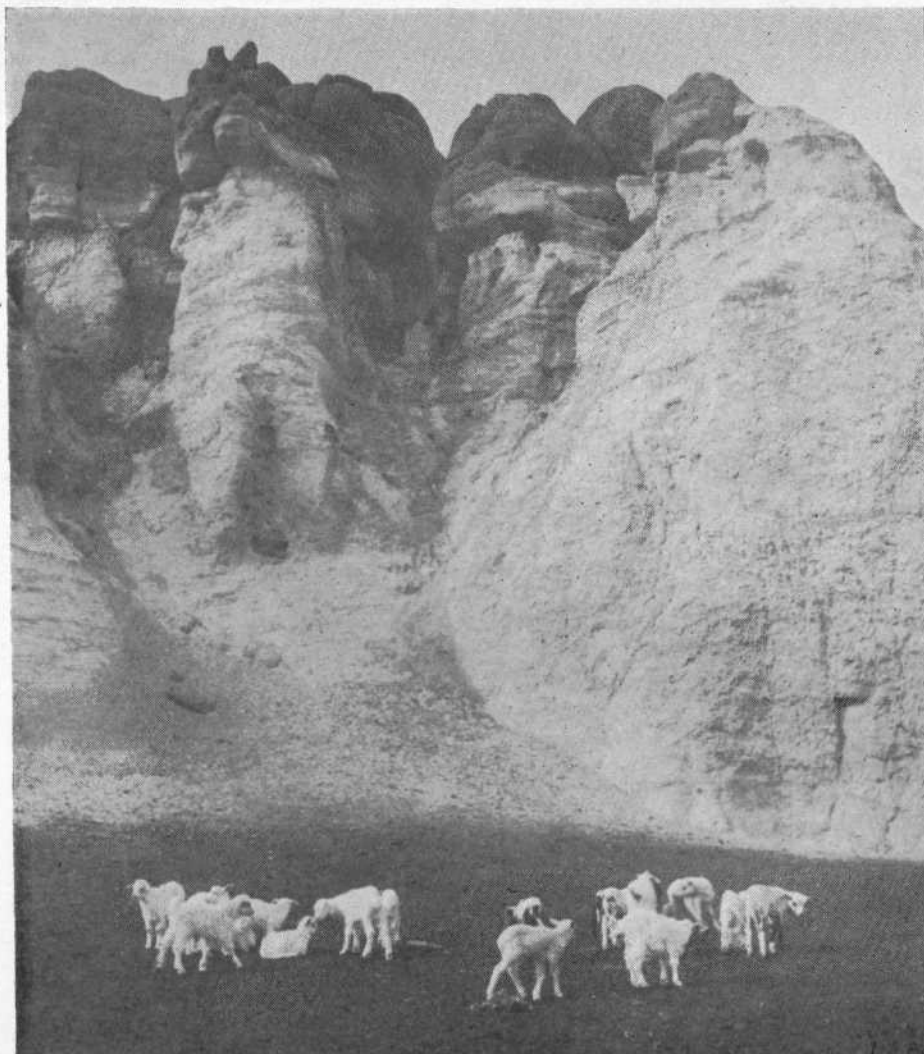
Our first trophy was the Heart-twister cactus, *Echinocereus coccineus*. Bah-tso, a Navajo boy, helped us collect it. We started out with a shovel and a large square of canvas, having first arranged with Charlie-Many-Goats who was going down the valley with a wagon after mutton to pick us up on the homeward trip.

Bah-tso's store of English was limited to the words, "Over there." I happened to know the Navajo word for cactus—"Hosh." With this equipment we started out, nor did we waste any time with irrelevant conversation. The boy led me for a mile or two up the sandy wash, then by signs indicated that we must make for the mesa top. A stiff climb brought us up on the flat. Bah-tso, with a sweeping gesture gave me to understand that our quest was ended, that here were the cactus plants, and he was ready for instructions.

I looked about. There were indeed many clumps of opuntias, both the flat and the cylindrical species, but no Heart-twisters were there. Fortunately, I had heard the old legend which tells of the

Right—Sidney Armer painted a corner of his native desert garden.





Tuble said, "How could there be any flowers where the sheep eat everything."

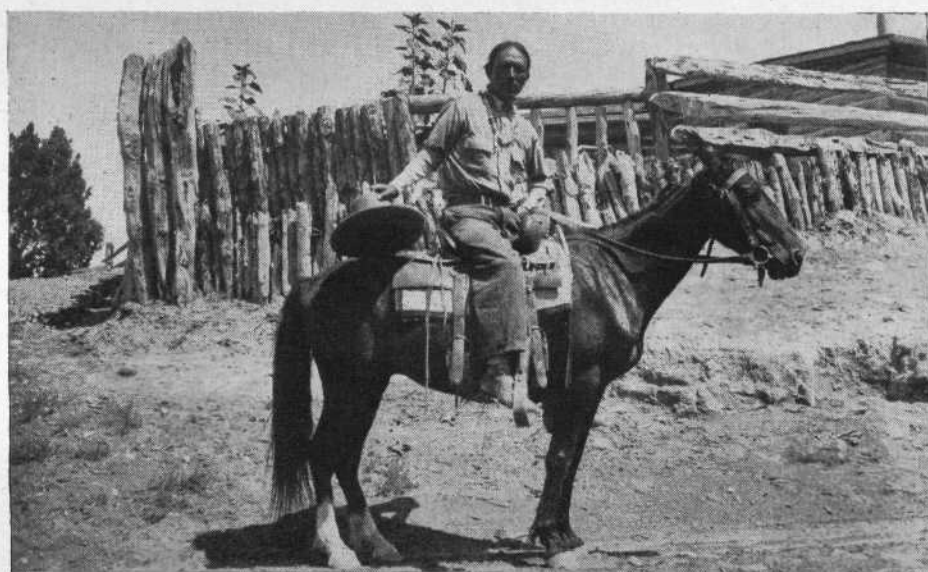
Navajos' experience with the Heart-twister cactus. I made a movement as if pulling a hair from my head, another as if I were placing it upon a cactus clump. Bah-tso beamed his understanding and proudly voiced his entire stock of English. "Over there," he said. And over there we went.

The Navajo say that many years ago there was famine in the land and the tribe had to subsist on the meager fruits of desert growth. The yellow-green fruits of the Heart-twister attracted them. Its delicious fragrance was reassuring, but alas, deceptive. For a brief moment their hunger was stayed but a violent twisting of the heart followed the eating of the fruit. Then one, wise in the lore of living things, gave counsel. "Pluck a hair from the head," he said, "and offer it in sacrifice, praying to the Hosh that it does not twist the heart."

Bah-tso shared my delight in the great mound of plants which he had discovered. Mine was the joy of the gardenlover who had treasured a single plant and now was in possession of a clustered mass of two to three hundred plants. Sixty-six scarlet flowers spread their velvet petals over the

spiny mound. If the cluster had grown outward from the center, it must have thrived for a hundred years.

We made a litter of our canvas, placed



"It was Honogani who told us many Indian stories which account for the picturesque names of desert plants. And it was he who nicknamed me Mister Cactus."

the thorny mass upon it and cautiously made the descent. Later, the wagon came rolling along and took us on board. There was much merriment among the Indians. "All that trouble for a bunch of hosh—and Heart-twisters at that! And why was not a cluster of hosh just as good in one place as another?"

But for all their merriment, a new idea and a new interest had come to our Navajo friends by way of our developing garden. Hardly a day passed without some friendly gesture in form of a gift. Once it would be a cactus brought with difficulty from Canyon de Chelly, 25 miles away. Again it would be a worthless weed, earthed in a tomato can—presented with a bashful kindness.

Our old friend Moqui-tso, a dignified medicine man, tied his horse to the juniper tree at our gate. He came up to our screened porch where a group of Navajo had gathered, and said, "Hasteen, upon that mesa top are fine flowers."

He pointed to the north with his lips. "I will go with you to that place. I will talk to the flowers in Navajo, so that they will grow for you."

Then there an expedition was organized. Bah-tso would furnish the wagon and horses. His wife Tuhle, who spoke good English arranged that. Then Moqui-tso remembered that he was to preside at a healing ceremony for which he needed three colors of paint. After all, he would be unable to go with us. He got his paint and left.

Then Tuhle said, pointing to her husband, "This feller says the Indians don't want you up-on-top."

We hardly were surprised at this show of unfriendliness, as we knew Tuhle resented our presence at Black Mountain. Tom Armijo the trader came in just then. We turned the interpreting over to him.

He reported that the boy said nothing about our not being wanted up-on-top. It was as we had suspected. Laura was annoyed at the reception. Tuhle was told she was not to be included in the expedition. She left the group in a huff.

On the appointed morning we looked across the hills and saw Bah-tso's camp stirring. Presently we saw the wagon leave and head toward our house. When it arrived Tuhle was mounted up on the seat. She was smiling and greeted us with happy innocence.

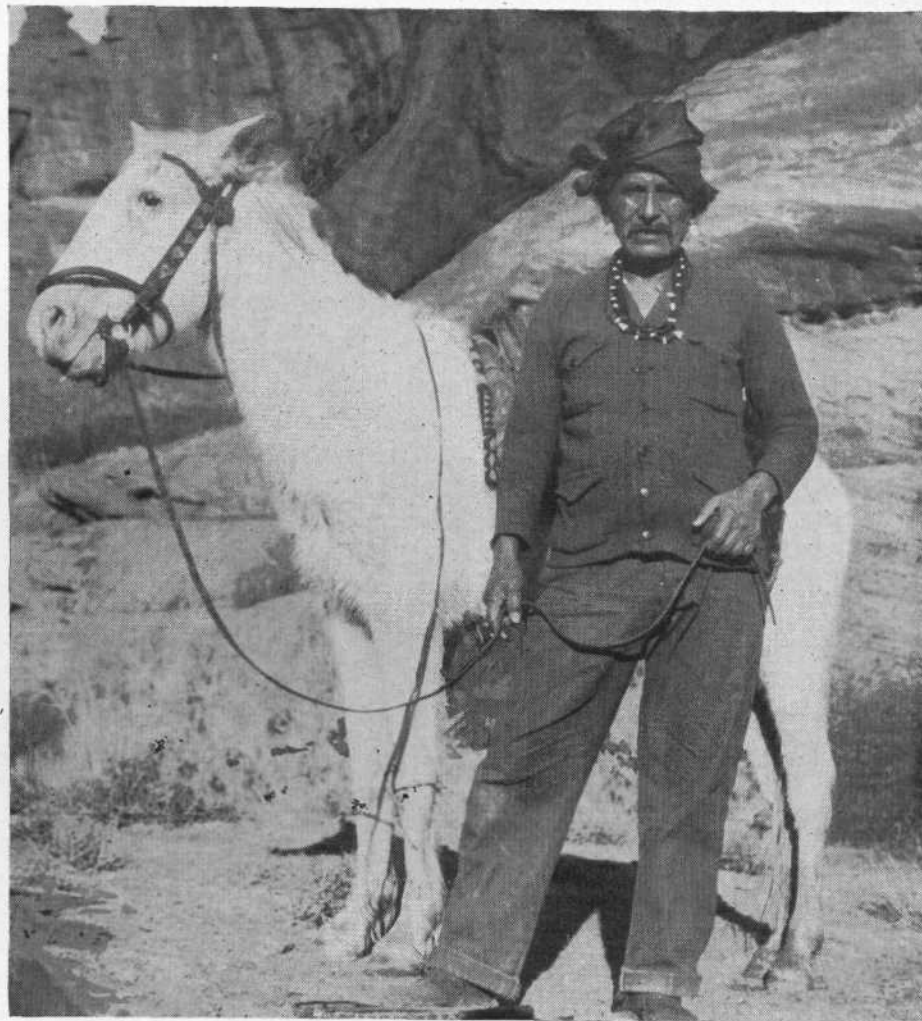
Secretly, Laura and I discussed the primitive mind, observing that each day is a new day to the Indian. We forgave her, but demoted her from the spring seat. We loaded the wagon with pick, shovels, food and canteens of water. Then we were off, rumbling and jolting across the valley.

In a couple of hours we had traveled across the flat and had climbed up to the mesa top. A wide plain lay before us. We asked Tuhle where we were headed. She was a bit more serious now. We sensed a hesitancy in her answer, "Over there. There are flowers over there." Her expression did not show any enthusiasm.

I recalled that *Nestsili-begay*, Big Man, lived in this neighborhood. In an hour we were at his camp, where we learned from Tuhle that this was the terminus of our journey. We looked at the barren country—then at Tuhle. We told her that while we were delighted to be at Big Man's camp, we nevertheless were compelled to notice one outstanding fact, namely, that there were no flowers there.

Tuhle hardly could have missed the sarcasm in our tone. She replied with withering scorn, "How could there be any flowers where the sheep eat everything and run all over this country here?"

Her answer was so convincing that for a second we questioned whether we had not been guilty of stupidity. Unable to



"Mister Tall Singer could not whole-heartedly approve the rocks we had brought in to the garden."

fathom the eccentric workings of Tuhle's mind we left her, mistress of the day.

But her victory was only a partial one. High up among the tumbled rocks where knotted junipers clung perilously and where the sheep had been unable to pene-

trate with their devastation, Laura discovered a thriving colony of *Yucca baccata*, the broad-leaved yucca. Also some hardy plants of the evening primrose, good specimens of the scarlet penstemon and *Gilia aggregata* (Hummingbird food).

Later, we discovered why this expedition had terminated at a Navajo camp. Tuhle had brought three beautiful blankets which she had woven. These she had hidden carefully in the wagon and here she was, trading them to Big Man for sheep and lambs. It was a clever stroke to have used the expedition for her own ends while she permitted us to pay for the hire of horses and wagon.

But we refused to let her think she had outwitted us. We exhibited our plants with pride, vowed that the outing had turned out better than our expectations, and expressed our pleasure that Tuhle had brought us there. Once embarked on the homeward trip all memory of friction vanished. The best of good nature prevailed. Bah-tso broke into a happy Navajo song, which meant according to Tuhle's translation, "All us cousins are trotting around."

That evening while setting out the



Tuhle and her man Bah-tso brought a tub of blooming yucca for the garden.

yuccas and other plants, I looked across the flat, in the direction of the monuments of Tse-lani. I caught a glimpse of a truck. Tsosi had arrived with a load of mill-slabs from the government sawmill at Fort Defiance. We were pleased to have the slabs to finish our house of logs, but doubly pleased to have the use of Tsosi's truck. Now we should be able to get a load of rocks for our garden. It was arranged that we take the truck over in the direction of Mesa wash.

We would need a helper. Our choice fell naturally upon Honogani. Naturally, because of his interest in our garden, because it was he who told us many Indian stories which account for the picturesque names of desert plants. He it was who had nicknamed me *Hasteen Hosh*, Mister Cactus.

Tsosi thought that the most beautiful rocks would be found near the Spider Woman, about five miles west of the post. He explained that the Spider Woman was a pile of rocks built up to its present height by the placing of votive offerings of juniper sprays, each held down by a rock placed upon it. Navajo passing the spot halt a moment on their journeys and place the juniper offering with a prayer that their mission might prove fruitful.

Our quest took us to a mesa edge where big squared masses of rock lay each to each, like a pueblo village of square-built houses, lacking only windows and chimney-pots. The rocks were mottled with gorgeous lichens ranging in color from deepest orange to pearly grey, their own greens and reds and golden yellows mingling with the lichens in fantastic patterning.

There was a great amount of broken pottery all about—ancient relics of a people gone since many centuries. There were interesting wild grasses growing between the rocks. I gathered some roots for the garden. "That grass," said Tsosi, "is called 'Afraid of Summer.' In a month it will turn brown even if the rains come. It knows when summer is coming and it gets afraid."

A load of beautiful rocks was piled upon the truck. When after much persuasion the truck drew up at our garden gate, curious Navajo stood about to contemplate and comment on our folly. The Badger Man's son thought the rocks might not after all be a total loss, and he proceeded to explain how we could remove the lichens with boiling water.

There was plenty of volunteer help in placing the rocks in our garden. Little by little curiosity grew into interest, and interest into approval. Two or three of the Navajo drew apart and conversed quietly. Presently one approached and said, "If the Mister and my Mother wish it, we will, after the next sun-up, bring to them a great tree."

On the afternoon of the next day their wagon arrived. They unloaded great



"Our first trophy was a great clump of Heart-twisters."

smooth slabs of petrified wood, vertical sections of a giant tree that in centuries past had turned to stone. It made a capital pavement for our garden walks, a board-walk indeed, converted into stone.

Our desert garden is flourishing now. In early springtime the yucca bells and the cactus blooms, endless in variety, dispel all thought of drought or of aridity. One of our opuntias (*hystricina*) is in itself a festival of color. We have gathered many of these plants and the variety of their flowers is a matter of constant surprise. They range from lemon yellow through chrome to apricot and golden brown, from laven-

der-pink to red, approaching crimson. In a single day, one specimen will change from a pale green-yellow in the early morning, to orange in mid-afternoon, then to a brown, approaching chocolate.

There is more than visual beauty in our desert garden, for every plant recalls the kindness of some Indian friend, or tells the tale of age-old myth which brings the land, the people and the plants into one beautiful unity. We called the fellowship complete upon that day when Tuhle and her man Bah-tso, staggering with the weight of a big dishpan, brought us a mass of cactus pads covered with yellow blooms. Tuhle herself had grown them from seed, expressly for our desert garden. She called them "wide cactus with thorn-rimmed fruit," *Opuntia stenochila*.

Our Navajo friends rest their arms upon our fence of peeled poles and silently regard each plant and lichen rock. They have found that it *does* make a difference whether a cactus clump is growing here or there upon the desert.



"Bah-tso's store of English was limited to the words, 'Over there'—and over there we went."

William Caruthers, in *Desert Magazine's* personal adventure prize story series, tells about his experience in hunting for the Lost Chinaman mine with Shorty Harris, famed single-blanket prospector of Death Valley country. Shorty had been out of the hospital but a short time — and Caruthers was dubious about heading into the broken waterless Panamint where Shorty was positive he'd find a mine of pure gold . . . But Shorty had "learned a few things from the Pahutes."

Shorty and the Lost Chinaman

By WILLIAM CARUTHERS

WATER, you have heard, is life on the desert. Curiously—even fatefully, I was thinking of it that day as I sat on a slab bench in front of Shorty Harris' crumbling adobe cabin in the ghost town of Ballarat.

Shorty, dean of Death Valley prospectors, was urging a trip we'd planned for three years. He waved toward a long sweep of the Panamint. "I'm telling you it aint been scratched." His voice was vibrant, his blue eyes eager. "If there aint a million dollars waiting up there, I'm not a single-blanket jackass prospector."

I reminded him that he had been out of the hospital less than a month after a major operation, the second in two years, and that the doctor had ordered him to stay out of the hills for at least six months. I had brought him home only the day before.

"Those doctors—" he scoffed . . . "they don't know how tough I am. Why hell—I'm losing a million dollars a day. Think I'm going to sit around here with my feet itching? No sir. I'm going to put another town on the map." He rose, danced a jig to prove his fitness.

Thirty years before, he had walked up a little canyon near Buck springs on the Amargosa desert, knocked a piece of green quartz from a ledge. It was a prospector's dream. Picture rock. One of the most amazing stampedes of the West followed. Towns sprang up. Bullfrog. Rhyolite. Beatty. Gold-mad men jammed the new-made trails across that burning stretch of hell. A railroad came. Shorty was on top of the world. The Big Boys who wanted



Cabin at ghost town of Ballarat where Shorty "holed in."

his claim, feted him, and one "morning after," he woke to find he'd signed away for a song the famous Bullfrog mine—the discovery strike that had turned the barren desert slope into a seething town.

It didn't faze Shorty. He simply followed his burros into the hills again and put Harrisburg on the map, and now in his seventies his one ambition was to start another boom.

The jig finished, Shorty's golden laughter rang out on the desert air. "Don't tell me I'm not fit. Let's get going . . ."

Our purpose was to locate the Lost Chinaman, which ranks with the Lost Breyfogle in the legends of Death Valley mines.

Shorty Harris as guest at a Death Valley picnic held in Wilmington, California. Frashers photo.



Shorty started to tell me more about the Lost Chinaman. I didn't protest, though I'd heard him tell it innumerable times to tourists sitting under the spell of his tall tales.

"I was working at Searles Lake for old man John Searles," Shorty said. "One day I saw a fellow stagger down from the Slate Range and flop on the edge of the lake. I thought he was drunk, but it turned out he was a Chinaman who'd got sore at the boss over at Eagle Borax works and started out afoot. The Pahutes told him to take a short cut over the Panamint, but he lost his way and ran out of water."

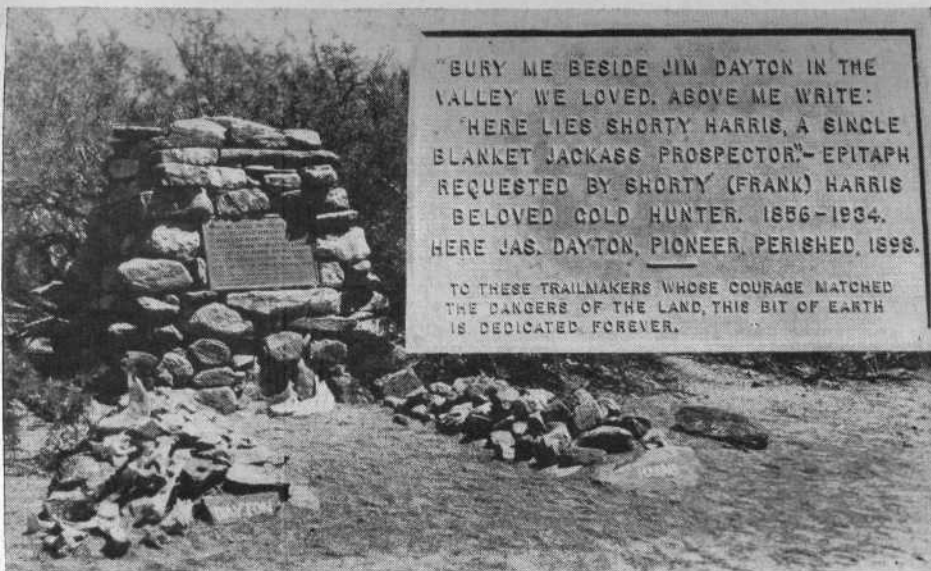
"We had him on his feet in a day or so, but he got the idea he was going to croak and wanted to get back to China so he could be buried with his ancestors. Salty Bill, John Searles' teamster, was taking a load of borax to Mojave. So we threw the Chink on the wagon. I tossed his bag up and started away. The Chink called me back, dug into the sack, pulled out a piece of ore and gave it to me. I couldn't believe my eyes. It was dam' nigh pure gold. Maybe 15 pounds. He tried to tell us where he'd found it. 'In the big timber,' he said, 'where a steep canyon pitches down into Death Valley.'"

"John Searles and Salty Bill searched five years for that gold. No go."

Then Shorty tapped his breast importantly: "I know." He pointed to the peaks. "See that sawtooth? Over and down. There's your Lost Chinaman. And those doctors telling me to sit around here! Why, migod—with ten million dollars in sight . . . maybe twenty . . ."

I yielded to his ingratiating persistence and agreed to set out next morning.

Shorty of course, knew every trail in the country, but I was not sure that he could stand the arduous climb. I knew nothing of that part of the Panamint, but I'd talked with Fred Gray and learned there were places where we'd have to go on hands and knees and that there was no known water



Shorty's grave, with epitaph written by the author at request of government officials. Frashers photo.

in the district we expected to explore. As I didn't want a cripple on my hands, I did considerable worrying.

Sitting on the bench in the mid-afternoon, I saw a Pahute, whom I'd known over at Shoshone, stop at the well behind the old saloon. I went over.

Now a Pahute knows his desert—its moods, its chary tolerance of life. He knows where the sheep hide and the fat lizards crawl, where the drop of water seeps from the lone hill. I asked him about springs. He knew of none where we were going. "If Pahute lose his way, he look around for animal tracks going same place. Maybe water."

It must have been a blessed urge of fate that led me to question the Pahute. In broken English he went on to tell me what else the Pahute did about water on the desert. If he came to a spring, he would skim the water from the surface, dash it upon a rock and smell it. If there was an odor of onion he knew it contained arsenic, and let it alone. He knew also he would find an Indian sign about and would look for it. One of these would be a broken circle of stones with the opening pointing toward the next water. The distance to that water would be indicated by stones inside the circle. If there were two, for instance, he knew it was two days' journey, because each stone represented "one sleep."

If more than one trail led from the water, the one that led to the nearest spring would be indicated by an oblong stone placed conspicuously along the right path. In addition, the kind of water to be expected there would be indicated by the color of a small rock placed on the oblong one. If it were white the water at that next spring would be good. If brown or red or dark, it would be poison.

Frequently there would be other useful

information for the wayfarer. Perhaps picture writing on a boulder. The crude drawing of a lone man indicated that the country about was uninhabited. If, upon the pictured torso there were marks to indicate the breasts of a woman, he knew there was a settlement with squaws, children and food. If he found a feather under a stone with a hole punched through it or notched, he knew that an Indian had been there who had killed his man. Since there was a difference between the moccasins of the tribes, the dust about often would inform him whether the buck who went before was friend or enemy.

The Lost Chinaman? Well, it's still lost. We ran out of water and Shorty, enfeebled from overexertion so shortly after the operation, collapsed. I had to leave him under a bush and set out, terror stricken, for water and help. Trusting to him as guide, I had taken no bearings. I looked out over the gutted range below me, and had a panicky feeling even before I started.

The sun was about three hours high. I ran into one blind canyon after another, only to struggle out with a desperate sense of futility, as I aimlessly headed for lower reaches, confused everywhere by a criss-cross of wild burro and sheep trails. The terrific heat, the high altitude took toll of my already depleted strength. The exertion of climbing one precipitous wall, only to tackle another with the agony of thirst always with me, started my lips swelling and my throat tightening. My legs dragged. I could hear the quick thumping of an overtaxed heart and threw my shirt away.

Hopeless, I finally sat down on a boulder to rest, to fight off the constant dread that in a minute I would see a phantom pool of water and start running around in a circle. Below was a diminutive

flat valley between almost perpendicular hills. As I glanced in my desperation, at those forbidding walls, I noticed a trail on the floor. Then another—then another. They seemed to converge at the end. What the Pahute had said flashed over me and in frantic haste I let myself down, ran along the nearest one, eyes strained ahead. Suddenly I came upon black ooze and seepage. I started digging with bare hands—saw water rise in the little hollow I'd scooped out. And then things went black. For how long I could only guess.

I heard a stir in the brush, felt a tug at my sleeve, looked. There stood Shorty Harris.

"How the devil—" I managed to say, "did you get here?"

Shorty looked at me with a sort of tolerant chagrin. "A million dollars . . . yes—twenty, maybe—and me with a punk on my hands . . ."

"How did you get here?" I repeated.

"When I came into this country 50 years ago," Shorty said calmly, "I learned a few things from the Pahutes."

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THE **Desert** MAGAZINE

636 State St.

El Centro, California

Mines and Mining . .

Phoenix, Arizona . . .

More efficient work and closer co-operation between federal government and Arizona mine workers is the result this year of work done by state department of mineral resources, J. S. Coupal, director, has announced. Department has aided in obtaining development loans, access roads application approval, mineral surveys and has been active in industrial salvage program.

Eureka, Nevada . . .

Allocation of \$100,000 will reopen drilling on Richmond Eureka mines on Ruby Hill. Program includes drilling of five additional holes to depths of 2000 feet or more to establish extent of ore bodies there.

Missoula, Montana . . .

First deposit of quartz crystals known in United States to be acceptable for manufacture of radar equipment reportedly has been discovered on Diamond Point mountain, six miles northwest of Hot Springs, Montana, by James Lozeah and J. L. Waylette. Estimated value is said to be "enormous" since crystals are worth \$10 per pound and were formerly imported from Brazil. Work in the deposit will be supervised by U. S. bureau of mines to insure correct handling of excavations in consideration of the extreme strategic value of the crystals.

Tonopah, Nevada . . .

Reduction plant is being planned by Basic Refractories, Inc., to reduce weight of brucite now being shipped at the rate of 6000 tons per month from Luning. Building will be part of their plans for post-war production.

Washington, D. C. . . .

Uncle Sam is sending out prospectors to search from Alaska to Texas and Maine to California for wartime metals. No gold or silver will be sought in the \$3,900,000 program but only such minerals as zinc, copper, tungsten, vanadium, mercury, tin, iron, and manganese. Harold L. Ickes, secretary of interior, reported that government-subsidized prospectors will hunt for new mines to aid the war effort.

Prescott, Arizona . . .

Nearly 100 small mine operators met with Arizona senator Ernest W. McFarland to draft resolutions opposing present premium price quota system for mineral production. Resolution recommended establishing higher prices to encourage greater production among small mines.

Reno, Nevada . . .

Nearly 3000 more miners are working in Nevada's 251 operating mines this year than last. Report issued by Matt Murphy, state inspector of mines, shows that number of employees in all large mines has increased during this fiscal year.

Las Vegas, Nevada . . .

Herbert C. Hoover is reported to be promoter of large capacity chemical process plant which soon may be constructed near Pioche, Nev., for treatment of ore in mines of Combined Metals Reduction company. Mr. Hoover recently visited and inspected the mines, accompanied by L. K. Requa, mining engineer who is named as one of the directors of the new company.

Las Vegas, Nevada . . .

There is growing doubt whether the critical shortage of manpower in non-ferrous metal mines of the West can be met by release of soldiers to work in them. First experiment of that kind failed according to Mining Press, because most of the men were totally inexperienced or physically unfit for the labor. Manpower shortage still is causing considerable lag in war metal production.

Paradise Valley, Nevada . . .

Large scale development program is underway at Cahill quicksilver properties, 25 miles southeast of here, and new ore has been discovered at Cordero land near McDermitt. Large crews are busy operating the high-grade cinnabar mines which have not been active for the past year.

Winnemucca, Nevada . . .

Efforts are being made in Washington to close all small mining operations for the duration according to J. S. Coupal who has been requested to make immediate survey of Arizona's small mines. Reasons supporting this plan are that more labor, machinery and supplies would be released for larger concerns.

Independence, California . . .

Persons having information about iron ore deposits were urged to get in touch with representative-elect Clair Engle, at his office, Washington, D. C. Engle, in message to Second District residents, said that funds had been provided by congress to explore deposits and supply technical information needed by prospective steel and mining operators on the west coast. Information, Engle said, will be turned over to special committee empowered to recommend such explorations.

Tonopah, Nevada . . .

Free assays, five in any 30-day period, are being provided prospectors in this state by University of Nevada under new ruling. Designed to increase search for vital war minerals and ores, assays without charge are not given operating mines, engineers sampling mines, or assays to check other assays. Only prospectors are entitled to this service.

Window Rock, Arizona . . .

New helium plant on Indian reservation has been named Navajo Helium plant in recognition of the patriotic spirit and co-operation shown by the natives. Great interest has been evidenced in this project since it is only the second such gas plant in United States, the other being in Amarillo, Texas.

Lovelock, Nevada . . .

John T. Reid, 72, one of Nevada's best known mining men, died September 14. Besides engaging in mining activities which embraced many phases and properties, he was developing a mathematical system based on ancient Mayan Indian system, he was a collector of rare artifacts and books, and was an active friend of Nevada Indians.

Pasadena, California . . .

California Institute of Technology has postponed tuition-free evening mining course enrollment date to October 15. Course conducted by G. A. Schroter, Los Angeles consulting mining engineer, will include development of mines and prospects, ore extraction, milling methods, strategic minerals, mining law and financing. Apply to War Training Office, California Institute of Technology, Pasadena 4.

Tiger, Arizona . . .

Employees of Mammoth-St. Anthony, Ltd., lead and zinc mine here have been granted 40 cents per shift wage increase retroactive to June 11, 1943, by nonferrous metals commission of NWLB. Directive brings base pay to \$6.40 per day.

Holbrook, Arizona . . .

Test well is being drilled 27 miles southwest of here by Union Oil Company of California and Continental Oil company. Site is part of 54,000 acre block of land held jointly by the oil companies. It is in virgin wildcat territory, some 200 miles from any proven oil field. Supervisor is Union Oil company's geologist R. W. Burns.



Trailing Milkweed, showing characteristic habit of twining, its slender stems forming into ropes. Photo by the author.

Meet the Trailing Milkweed

By MARY BEAL

NEARLY everyone knows the up-standing common Milkweed but I doubt if everyday folk are familiar with the less conspicuous, trailing species. This does not add a noticeable accent to its surroundings but does vary the monotony of vegetation enough to be worthy of attention.

The Indians, never overlooking possible uses for plants, found the young pods a palatable addition to their diet. But don't let that give you the idea of trying out the edibility of any likely-looking Milkweed you happen to run across, because some species with the most promising appearance are poisonous to livestock and may prove to be injurious to humans.

The genus to which the Trailing Milkweed belongs is *Philibertia*, the name honoring the early French botanist Philibert, author of a botanical dictionary published in 1804. Discarding this early classification, some more recent botanists use the name *Funastrum*, evolved from the star-like flowers and ropes of twisted stems. The genus also was classified formerly as *Sarcostemma*. *Townula* sometimes is used as a common name. *Philibertia* has the characteristic milky juice of the Milkweed family.

Philibertia birtella sends its slender fibrous stems rambling widely about, each from 2 to 10 feet long, often twining

through and over low shrubs, or just trailing over the ground. I've seen a vigorous *Townula* in such complete possession of its supporting bush that only the exuberant vine was in evidence. After enveloping one hospitable bush it is prone to trail off across intervening ground toward another promising host. In the course of their rambles several stems often twine together into ropes as you may observe in the picture.

Both stems and leaves are downy with fine soft hairs but the fiber of the stems is tough. Leaf-nodes are quite far apart, the leaves linear and apt to be pointed at both ends, 1 to 3 inches long, on short petioles. The small fragrant flowers grow in umbels on rather long stems springing from the leaf axils. When the pale greenish-yellow corolla spreads out its 5 ovate lobes it forms a perfect 5-pointed star. At flowering time, about April and May, nearly every axil, from beginning to end of the long stem, puts forth a star cluster.

Have you ever observed closely the complex structure of Milkweed blossoms? It's interesting to see how the stamens and style combine to form a column which is attached to a narrow ring at the base of the corolla. Mostly this column bears appendages or hoods above and is further elaborated at the sides, between the anthers, by glands with slits which aid in cross-pollination

by catching the feet of visiting insects and scraping off the pollen, as they come and go from one flower to another. The slender tapering pods are spindle-shaped and downy with short spreading hairs. This is common along dry washes and draws from low to moderate altitudes in the Colorado desert, central and eastern Mojave desert and Inyo county in California, eastward into western Arizona and southern Nevada.

Philibertia heterophylla
(*Funastrum heterophylla*)

This is similar to the preceding but more of a climber, taking larger shrubs and even small trees in its stride. Its herbage is entirely bald or sparsely hairy and quite green, the stems 3 to 8 feet long, the leaves linear to lanceolate, sometimes with eared lobes at base, 1 to 2 inches long on short petioles. The flowers are $\frac{1}{3}$ to $\frac{1}{2}$ inch long, about twice the size of the first species, the corollas purplish, with purple-veined lobes. The pods are slightly hairy, about $2\frac{1}{2}$ to over 3 inches long, widest below the middle. Rather common on dry flats and slopes and along wash-banks from very low elevations up to 2,000 feet in the Colorado desert, south to Lower California and Mexico. Eastward through Arizona and New Mexico to western Texas it sometimes reaches an altitude of 5,000 feet. It may be found in flower from March to September according to its elevation.

Philibertia crispum
(*Funastrum crispum*)

This species is absent from the California deserts but is found in southern Arizona and New Mexico, western Texas and Mexico. It may be identified by its short peduncles and thickish, somewhat broader lanceolate leaves with sagittate or halberd-shaped bases, the margins usually wavy. The herbage is ashy-grey with a generous covering of soft hairs but the pods are smooth, varying in length from $3\frac{1}{2}$ to $6\frac{1}{2}$ inches, tapering to a long slender point at apex. It blooms in summer and favors a canyon habitat from 4,000 to 6,000 feet elevation.

Philibertia cynanchoides
(*Funastrum cynanchoides*)

This has about the same range as the last species but at moderate altitudes slightly overlapping the other's higher range. It climbs over shrubs in washes and along stream banks, the blooming season from May to September. The herbage is bald or sparsely hairy. The thin leaves are decidedly broader than those of the other species, from broadly lanceolate to broadly ovate, noticeably heart-shaped or sagittate at base, the apex sharply pointed. The flowers are white, the umbels on rather long peduncles. The pods are finely ridged, usually less than 4 inches long.

HERE AND THERE .. on the Desert

ARIZONA

Indian's Rights Upheld . . .

PHOENIX — Arizona Indians have won another right as citizens, the right to operate as public carriers, by decision of Justice R. C. Stanford of state supreme court. Refusal of Arizona Corp. Commission to issue Lee A. Bradley, Navajo, contract carrier permits on the sole grounds that he was an Indian was declared unconstitutional by unanimous decision of the court.

Farm Program Successful . . .

MESA — Farm production program at Gila River war relocation center will require \$1,000,000 worth of food to be produced by Japanese during the next fiscal year for local consumption. Last July's output in pounds was the greatest since establishment of the project, with most production in watermelons which were sold to the army.

Dust-Proofing Tests Made . . .

PHOENIX — Experiments in dust-proofing motorized equipment for the army are being staged by General Motors Corp. "somewhere on the Arizona desert." Engineers in Army Ordnance Dept. proving ground say that dust, dirt and mud often are more destructive than enemy fire to equipment, and protection of vehicles, shafts, radiators, electrical instruments and other items is being sought.

Water Rights Denied . . .

PHOENIX — Salt River Valley Water Users association rejected proposal of Phelps Dodge Corp. to pump water from Black river for use in expansion at Morenci copper plant. Chief objection to this plan was that such encroachment on valley water supply ultimately would destroy the means of livelihood, homes and investments of others dependent on it.

Sight-Seeing By Air . . .

GRAND CANYON — Navy pilot Lt. Leland T. Johnston has asked civil aeronautics board for permission to operate sight-seeing air service from Grand Canyon national park, via Rainbow Bridge monument to Canyon de Chelly. He asked also for hourly "elevator" service to bottom of Grand Canyon.

Power Rates Reduced . . .

YUMA — With arrival of Parker Dam power here, electric power users of Yuma mesa and valley received rate reductions totalling \$92,890. This action was the result of conferences held between Commissioner William Petersen and representatives of local companies. Also new power line hookup to station near army hospital has been completed recently.

Buyer Escapes Death . . .

KINGMAN — Wallace Woolley, ore buyer, nearly lost his life when his car became stuck in sand some distance from Yuma and he tried to make his way there on foot. After 23 hours of hiking he arrived completely exhausted and felt no better when told he was the first ever to make the trek and come out alive. His car was towed in by two soldiers from a distant bombing range, and he was said to be recovering quickly.

Arizona's eighth annual elk hunting season will open November 1 and end November 30.

Tucson has been selected as 1944 American Legion convention city, meeting to be held sometime between August 10 and 20.

Javelinas, wild pigs or peccary, native to Arizona, range on cactus covered mountains from elevations of 1,000 to 6,000 feet and are more numerous in southern part of state. Principal diet is cactus, from which they are able to obtain sufficient moisture when far from water. Average weight is about 50 pounds.

CALIFORNIA

Chalfant Honored . . .

BISHOP — W. A. Chalfant, editor and author of California books, recently was notified of his election to honorary membership in the International Mark Twain society. Recognition was for his contribution to American history in his new book, "Tales of the Pioneers" and the notification was signed by Cyril Clemens, president of society and relative of Mark Twain.

Water Holes Covered . . .

BRAWLEY — Desert travelers are warned not to depend on old waterholes for this winter's travels since army maneuvers have obliterated many of the trails and excessive rain has covered many of the waterholes, Henry L. Jackson has announced. Already one prospector nearly died from depending upon Hayden's well for water only to discover it was filled up—he had to travel back to the railroad to receive aid.

Date Growers Progress . . .

INDIO — California Date growers association has made outstanding record in low cost crop handling with securing of better prices and wider distribution this year. Despite high expenses and shortage of labor and supplies, marketing methods were improved. Good effects will be felt by entire industry and general public.



A point about our points

Maybe you've found that some railroads serve more meat dishes than Southern Pacific. Well, this is why:

We are allowed .93 of a point per meal per person, to cover meats, and all the rest. If we served only civilians, this would go 'round better. *We serve more military meals than any other three railroads combined!*

Men who have been going through hard training grinds need meat, and plenty. When they get theirs, our .93 of a point takes quite a beating before we start serving our civilian passengers.

So, when you don't get yours, you know why. The point is, we believe you wouldn't have it any other way.

S·P

THE FRIENDLY SOUTHERN PACIFIC

950A

Aged Indian Passes . . .

INDEPENDENCE — "Panamint George" Hanson, 103-year-old Pahute Indian, died September 19 in Panamint Valley where he was well-known and respected by old-time residents. Born over a century ago, George saw the struggling Jayhawker Party and other early expeditions into Death Valley and surrounding deserts and mountains of Inyo. See Desert Magazine, Feb. 1940.

Flyers Cheat Death . . .

DEATH VALLEY—Two Army flyers narrowly escaped death from thirst and heat when they crash-landed their trainer plane on Salt Flats. One reached help at Furnace Creek 20 hours later, the other was rescued soon after. Both were taken to emergency hospital and recovered rapidly. They had drunk salt water from brackish pools, their hands were lacerated by attempts to dig for water in the rocky soil.

Bonds Voted for Power Purchase . . .

EL CENTRO—Voters of Imperial Irrigation district approved \$6,000,000 bond issue to purchase the Imperial and Coachella power properties of privately-owned California Electric Power company. Bonds already have been sold to syndicate of 39 members headed by Blyth, Kaiser and Nuveen companies. District Secretary Evan T. Hewes expected complete transfer of properties to take place by October 15.

Champion Alfalfa Grower . . .

CALIPATRIA — Imperial county, according to recent census compilation, is first among all U. S. counties in acreage and production of alfalfa. California was first state, with second and third places going to Minnesota and Wisconsin. Imperial county's production was 340,894 tons from 114,164 acres. Yield of two tons per acre was national average; California average was 4.11 tons.

Cork Trees Planted . . .

INDIO—U. S. forest service will plant 100,000 cork oak trees this fall to determine best methods of growing such trees in Southern California. Cork is an excellent pasture tree, its acorns making good stock food. Several locations will be planted in Cleveland national forest in Riverside and San Diego counties.

More Vegetables Grown . . .

BLYTHE—Palo Verde valley soon may become one of desert's biggest salad bowls, with an increase of 700 more vegetable-planted acres than last year. Fall plantings of winter vegetables show a total of 2,320 acres of lettuce, carrots, onions, cauliflower and cabbage.

NEVADA

U. N. Head Chosen . . .

RENO — Charles H. Gorman, vice-chairman and comptroller of University of Nevada, has been named acting vice-president to succeed the late Dr. Leon W. Hartman. Gorman will serve until the new president is chosen.

Boulder Fund Paid . . .

CARSON CITY—State general fund was increased by \$300,000 when Treasurer Dan W. Franks received a check from federal treasury for sixth payment of Boulder dam fund. This sum brought account up to May, 1943.

Ship Honors "Borax" . . .

RENO—Liberty ship soon to be launched from Richmond shipyards will bear the name "Borax" Smith in honor of the man famous for the 20-mule team of Death Valley. Smith was the first to develop non-metallic resources of Death Valley, and later became an important figure in California finance.

State Population Gain . . .

RENO—Influx of war workers in the past three years has boosted civilian population of state by 22 percent, according to census bureau. This is unusual since in that period civilian population for United States dropped from 131,300,000 to 128,200,000, reflecting growth of armed services. Greatest gains were in localities where strategic metals are being mined.

Darker and Richer . . .

WINNEMUCCA—Because of changes in feeding practices of hens, egg yolks darker and vitamin-richer are now on the market according to L. E. Cline of agriculture extension service. Less protein and additional green feed is said to cause darker egg yolks.

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—
Actually about 1 1/2 cents per thousand readers.

MISCELLANEOUS

FOR SALE—12 beautiful perfect prehistoric Indian arrowheads, \$1; 10 tiny perfect translucent chalcedony bird arrowheads, \$1; 10 perfect arrowheads from 10 different states, \$1; perfect stone tomahawk, \$1; 4 perfect spearheads, \$1; 5 stone net sinkers, \$1; 10 perfect stemmed fish scalers, \$1; 7 stone line sinkers, \$1; 4 perfect agate bird arrows, \$1; 5 perfect flint drills, \$1; 7 perfect flint awls, \$1; 10 beautiful round head stunning arrowheads, \$1; 4 fine perfect saw edged arrowheads, \$1; 4 fine perfect flying bird arrowheads, \$1; 4 fine perfect drill-pointed arrowheads, \$1; 4 fine perfect queer shaped arrowheads, \$1; 4 rare perfect double notched above a barbed stem base arrowheads, \$1; 5 perfect double notched above a stemmed base arrowheads, \$1; 12 small perfect knife blades of flint, \$1; rare shaped ceremonial flint, \$1; 3 flint chisels, \$1; 7 quartz crystals from graves, \$1; 10 arrowheads of ten different materials including petrified wood, \$1. All of the above 23 offers for \$20. Locations given on all. 100 good grade assorted arrowheads, \$3.00 prepaid. 100 all perfect translucent chalcedony arrowheads in pinkish, red, creamy white, etc., at \$10.00. 100 very fine mixed arrowheads all perfect showy colors and including many rare shapes and types such as drill pointed, double notched, saw edged, queer shapes, etc., location and name of types given, \$25.00 prepaid. List of thousands of other items free. Caddo Trading Post, Glenwood, Arkansas.

FORTUNE: Complete File, unbound \$55.00 postpaid. ESQUIRE: Complete file, unbound \$40.00 postpaid. N. A. Kovach, 712 So. Hoover St., Los Angeles, Calif.

WANTED—One copy federal writers project New Mexico State Guide. Write Box NA, Desert Magazine, El Centro, California.

25 Genuine Indian arrowheads, \$1.00; Tomahawk head, .50. Cat. of Indian relics, crystals and ore specimens. Geo. Holder, Glenwood, Ark.

FOR SALE—Year Round Resort Hotel and Cottages in excellent condition. 2 acres with family fruits. Hot water heat, Oil Burner. City water, finest in America. Completely furnished, kitchen modern. Paved road, right at city limits. Wonderful view of Columbia river and mountains. Old established business and needs younger owner. Plenty business right now. Price \$13,500. Address R. E. & Tom Scott, Hood River, Oregon.

MANUSCRIPTS MARKETING — Books, stories, plays, photoplays, articles. Circular D-11 Free. OTIS ADELBERT KLINE, Literary Agent, Established 1923, 507 Fifth Avenue, New York, 17, New York.

DESERT LAND INVESTMENT—40 acre irrigated farm 7 miles from Yuma, Arizona, in Federal Project. Well located on highway 1 block from church, school and store. Soil well adapted to alfalfa. Ample cheap river water ready for use. Clear title \$2900. A. Ellerman, Box 1537, Yuma, Ariz.

LIVESTOCK

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

Karakul Sheep from our Breeding Ranch are especially bred to thrive on the natural feed of the Desert. For information write James Yoakam, Leading Breeder, 1128 No. Hill Ave., Pasadena, California.

REAL ESTATE

For Imperial Valley Farms —

W. E. HANCOCK

"The Farm Land Man"

Since 1914

EL CENTRO — — — — CALIFORNIA

Property Value Rises . . .

CARSON CITY—Value of privately owned lands in Nevada during past year rose \$317,460 reports George Allard, state tax commission statistician. As before, Clark county showed greatest increase in value per acre, 20 per cent over 1942 records.

NEW MEXICO

Summer Camp Exciting . . .

ALBUQUERQUE—Summer camp for Espanola Boy Scouts proved highly eventful, as encounters with bears, porcupines and snakes kept things exciting for youthful campers. Also an embryo forest fire started by some careless person was quickly extinguished when the whole camp turned out with tools, buckets and sacks to fight it.

American Research Gift . . .

SANTA FE—Dr. Edgar L. Hewett, educator and archeologist, has presented the School of American Research with \$100,000 gift, school officials report. It is comprised of real estate, personal holdings, art collections and library, and will be used to establish the Hewett Foundation.

Ranch Deal Closed . . .

ALBUQUERQUE—Sale of 33,700 acres of Rio Arriba ranch property was made to Alvin McGilvray of Iran, Texas, last month. It included ranch houses, furnishings and equipment and 750 head of cattle.

Huge Bone Found . . .

DEMING—Construction company employees in September unearthed what appeared to be a six-foot leg bone, possibly that of a dinosaur. Bone, found in a gravel pit, will be offered to New Mexico Archaeological society for inspection.

Fan Seeks Indian's Autograph . . .

GALLUP—World-wide CBS short-wave broadcast of Gallup Inter-Tribal Indian ceremonial inspired autograph fan, Lionel Athersych of Leicester, England, to write "His Excellency, the Chief of the Navajo" for his signature. Mr. Athersych stated that he had always been interested in the Navajo and thought the autograph of the chief would provide a valuable souvenir.

Speed Limit Boosted . . .

SANTA FE—State highway commission has increased wartime speed limit to 45 miles an hour, abandoning the 35-mile limit suggested by office of defense transportation. Governor J. J. Dempsey said that the 35-mile limit was uneconomical, difficult to enforce and a hardship on trucks and buses. And it was discovered that motorists were going on an average of 44 miles an hour anyway.

Farm Income Increases . . .

GALLUP—Department of Agriculture reports show New Mexico's farm income for first six months of this year is nearly \$10,000,000 higher than last year for the same period. Vegetables marketed at almost twice as much, poultry and eggs 44 per cent higher, dairy products 24 per cent higher and livestock 14 per cent higher.

UTAH

Bumper Beet Crop . . .

LOGAN—Approximately 78,000 tons of sugar beets will be harvested in Cache county this year, predicted D. E. Smith, superintendent of Lewiston factory. Although only about 5700 acres have been planted, tonnage is expected to be nearly the same as last year's because of a bumper crop.

Aircraft Courses Given . . .

OGDEN—Weber college is now offering training in aircraft and engine mechanics to public, officials recently announced. Federal government has provided \$200,000 worth of tools and equipment and \$500,000 worth of airplanes and engines. Over 300 employees of various war plants are taking the supplementary training.

Famed Architect Dies . . .

SALT LAKE CITY—Funeral services were held in September for Richard K. A. Kletting, noted western architect. The 84-year-old designer was fatally injured in a pedestrian-automobile accident. He had been dean of Utah and western architects and designer of state capitol building and others throughout the West.

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) Two years subscription (12 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. GHOST TOWN NEWS, BUENA PARK, CALIF.



"SUNLIGHT ON THE MOUNTAIN" . . .

Desert artist Lon Megargee's color lithograph of Camelback Mountain in natural red-gold and smoky azure of Arizona. Each 16x12 print signed by the artist and printed on white mat suitable for framing. A colorful bit of the Southwest for your living room, a beautiful gift for your desert-minded friends. \$3.00 postpaid.

Also available a limited number of Megargee's black-and-white lithographs and block prints of "Conservation," "So What," "Wild Horses," "Mule Colt," "Burros," "Shepherd," "Hopi," "Siesta." \$5.00 each.

California buyers add 2 1/2% tax.

Send orders to . . . DESERT CRAFTS SHOP, El Centro, California

DESERT QUIZ

There are reports that former Sand Dune Sages have fallen back into the plain Desert Rat classification during the past few months in Desert Quiz class. So this month we've prepared a simple review lesson designed to help them regain their former dignified status. Nearly all answers to this month's quiz will be found in issues of the past 12 months of Desert. If your score is at least 10, you belong automatically to the Desert Rat fraternity; if 15 or more, sit right down in that seat reserved for Sand Dune Sages. If you score less than 10, better get out the past year's Deserts and brush up on your desert knowledge. Answers on page 35.

- 1—Kaibab bridge, which crosses Colorado river at point between Kaibab Trail and Phantom Ranch, northern Arizona, is which type of bridge—Steel-arched..... Suspension..... Cantilever..... Concrete pontoon.....
- 2—Bullfrog mine, near Beatty, Nevada, was so named because—A frog led the discoverers to the site..... Ore was colored like bullfrog..... Frog was considered good luck mascot by the prospectors..... Rock formation nearby resembled bullfrog.....
- 3—Taos, Santa Fe, Carlsbad and Bernal have at least one point in common. They are all—Noted art centers..... In same state..... Early cattle towns..... On Santa Fe Trail.....
- 4—Yucca plant sometimes is called—Soapweed..... Greasewood..... Sand-food..... Sagebrush.....
- 5—Jet is likely to be found in—Copper mine dumps..... Coal veins..... Quartz veins..... Iron deposits.....
- 6—First white European according to historical record to search for Seven Cities of Cibola was—Coronado..... Marcos de Niza..... Cortez..... Cabeza de Vaca.....
- 7—Arizona's famous Camelback mountain is seen from—Flagstaff..... Nogales..... Phoenix..... Tucson.....
- 8—Dieguenos is the name of—Pioneer settler in Borrego valley..... Indian tribe..... Geological stratum..... Crude type of brush shelter.....
- 9—Correct spelling of the flame-flowered candlewood plant is—Ocatilla..... Ocotillo..... Occatillo..... Ocotilla.....
- 10—Amethyst is a violet-colored—Feldspar..... Agate..... Quartz..... Calcite.....
- 11—Hualpai Indians of northwestern Arizona are most noted for their—Basket-making..... Ceremonial dances..... Pottery-making..... Belt-weaving.....
- 12—Goldfield, famed Nevada mining center, is coming into prominence today for its production of—Gold..... Cinnabar..... Hydro-electric development..... Agriculture.....
- 13—Pronuba is the name of—Arizona giant ant..... Moth..... Pink-flowered annual..... Small desert bird.....
- 14—Devil's Golf Course is in—White Sands national monument..... Death Valley..... One of the passageways in Carlsbad Caverns..... Along Bonanza Highway in Nevada.....
- 15—Petroller is name for—An oil driller..... Rock collecting maniac..... Petrified-shell collector..... Road-grading machine.....
- 16—White Shell Woman is—Title of a book..... Navajo mythical character..... Noted pottery maker..... Rock formation.....
- 17—"Tales of the Pioneers" was written by—Frank C. Lockwood..... Sharlot Hall..... W. A. Chalfant..... Edmund C. Jaeger.....
- 18—Robber's Roost, famous outlaw hideout, is located in—Arizona Strip..... Lincoln county, New Mexico..... Near Colossal Cave, Arizona..... South-eastern Utah.....
- 19—Glory Hole is a name for—Death Valley's lowest point..... Open pit produced by surface mining..... Meteor Crater in Arizona..... Grand Canyon.....
- 20—One of these Hopi pueblos is on First Mesa, northern Arizona—Oraibi..... Walpi..... Shungopovi..... Hotevilla.....

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933
Of The Desert Magazine published monthly at El Centro, California, for October, 1943.

STATE OF CALIFORNIA

ss.

COUNTY OF IMPERIAL

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Lucile Harris, who, having been duly sworn according to law, deposes and says that she is the associate editor of the Desert Magazine and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Desert Publishing Co., El Centro, California.

Editor, Randall Henderson, El Centro, California.

Business Manager, Bess Stacy, El Centro, California.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Bess Stacy, El Centro, California; Edna B. Clements, Long Beach, California; Lucile Harris, El Centro, California; Randall Henderson, El Centro, California.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

Bank of America, El Centro, California.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily publications only.)

(SEAL) LUCILE HARRIS
Sworn to and subscribed before me this 5th day of October, 1943.

BESS STACY
(My commission expires April 4, 1944.)

On Desert Trails

With EVERETT RUESS

The story and letters of Everett Ruess, young artist-vagabond who disappeared on one of his beloved desert exploration trips

IN BOOK FORM

Includes his desert letters, reprints from his diary and illustrations of Everett's own block prints.

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THE *Desert* MAGAZINE

EL CENTRO, CALIFORNIA

GEMS AND MINERALS

ARTHUR L. EATON, Editor

FEDERATION MEMBERS TO AID MINES BUREAU REPORT

C. D. Woodhouse, president of California federation of mineralogical societies sends this message to federation members through September federation bulletin, Mineral notes and news:

"The State of California, through its Bureau of Mines, has asked each member of the California federation to help in the revision of Bulletin 113. Each society will receive this fall a number of cards which members are asked to fill out if they know of new minerals or localities which have not been recorded. This is a service which we all should be proud to do and I suggest to each president of the member societies that this work be made the first order of business at each meeting."

PIMA COUNTY MINE HISTORY AVAILABLE TO PUBLIC

Eldred D. Wilson, geologist for the Arizona bureau of mines, has compiled and published, through the Tucson chamber of commerce, the first condensed history of Pima county mines ever to be made available to interested persons. This history can be obtained from the chamber of commerce by anyone interested enough to write for a copy.

In this pamphlet is a map which shows each of the mining districts in the county and what metals have been discovered in each, with explanations of the chief geographic features of the county. According to the pamphlet, in the years between the time when Pima county first entered the mining game and the year 1940, the county produced more than \$222,000,000 worth of precious and semi-precious metals.

MEXICAN MINING LAWS TRANSLATED TO ENGLISH

Mineral survey of Mexico D. F., Mexico has published an English translation of the mining laws of Mexico, complete to February 28, 1943. Publisher is P. C. Escalante. The book is divided into the following chapters: mining law; regulation of mining law; mining police and safety regulations; mining tax law; sampling and assaying; tariff or fees as payable to mining agents for registrations in public mining register; instructions to applicants for filing of applications for prospect and exploitation concessions.

This is a most useful book for anyone operating or planning to operate in Mexico.

STANNITE

A little known tin ore, sometimes found in the United States, is stannite. This ore has been found in several Southwestern localities, including the El Capitan district in San Diego county, California. The common color is greenish grey, although the addition of pyrite often gives it a brassy color. Luster is metallic and streak blackish. Hardness is four and specific gravity about four and one-half. The brittle massive ore breaks quite unevenly. It is $Cu_2FeS_3SnS_2$.

COLORFUL MINERALS

INDIUM

Indium (In), so named because of the indigo color in its spectrum, has been known for 80 years, but only now is coming to the fore as an important mineral in war work. It is used with non-ferrous metals to strengthen and toughen them.

One of the first uses of indium was to prevent tarnishing of table silver. In the course of experimentation it was found that indium not only increased tarnish resistance but it also hardened the silver. At the time, about 20 years ago, none of the metal was produced in this country. William S. Murray was commissioned by Oneida, Ltd., to examine zinc ores in Western smelters and mines for the mineral. He located a zinc mine in the Chloride mining district of northwest Arizona which was rich in indium. This nation's first indium was produced there in 1927.

Indium is soft, malleable, silver white. It feels oily to the touch. Specific gravity 7.4; atomic weight 114.8.

Indium alloy plating on engine bearings enables bombers to increase their loads and to make quicker take-offs because they do not have to be warmed up so long.

MONTANA IS CHAMPION GEM STONE PRODUCER

Montana led the entire country for the year 1942 in production of gem stones, with the states of Nevada, Oregon, Wyoming and California placing with smaller values. Montana sapphires, mostly destined for industrial uses, made up 31 percent of the entire value, while turquoise made up 21 percent, and the quartz family minerals 20.

B. F. Couch reports that the Smith mine of Beowawe, Nevada, was the largest single producer of turquoise, with 13,033 pounds, a total value of \$32,000, while other Nevada turquoise miners produced only 350 pounds with a total value of about \$4,000.

JEWELRY INDUSTRY HAS GONE TO WAR

The jewelry industry has been converted to war work. Silverware plants are making munitions. Some jewelry firms are making quartz plates for radio work, and some watch factories are turning out jewels for instruments.

By discouraging jewelry manufacture the government attempts to divert to war bonds money normally spent on jewelry; also to discourage exportation of easily converted wealth, and to prevent critical materials and skilled labor from producing unessential merchandise.

Bureau of mines, department of interior, reports that production of gem stones in U. S. was 40 percent less in 1942 than in 1941.

WHAT DOES THAT NAME MEAN . .

Cobalt—from German *kobold*—a goblin or demon.

Platinum—from Spanish *platina*—diminutive of *plata*, silver.

Helium—from Greek *helios* sun, because first discovered on sun.

Chlorine—from Greek *chloros*, green.

Bromine—from Greek *bromos*, stench.

One unexpected development of the war is the employment of many Navajo Indians to work on the railroad right of ways of Southern California. Some of these Indians are expert silver workers, jewelry makers and weavers. The increased pay has drawn them away from their jewelry work on the reservations in northern New Mexico and Arizona, but it has not decreased their love of turquoise and the attractive rings, pins and necklaces made from it. They are not working at their trade now, but they are taking the opportunity to acquire cut and uncut turquoise for use on their return to their reservation.

CHRISTMAS GIFTS

In order to assist you in making your selection, we are offering the following suggestions from our comprehensive stock:

HEARTS AND PENDANTS

These are all double cabochon cut and highly polished on two sides. Yellow Gold or Sterling Silver bails are attached to best blend in with the character of the gem material. In size they vary from $1\frac{1}{4}$ in. to $1\frac{3}{8}$ in.

Australian Opal in Lucite hearts or tear drops	\$4, \$5 and \$6.50
Carnelian and Sardonyx hearts or pendants	\$3.25 and \$3.50
Night-blooming Cereus Obsidian hearts or pendants	\$3.25 and \$3.50

BROOCHES AND CHARMS

Yellow Gold Filled set with Australian Opal in Lucite, round or oval, fancy or plain. Sizes $\frac{3}{4}$ in. to $1\frac{1}{2}$ in.	\$4.50 to \$10.00
Brooches set with black or green Wyoming Jade, round or oval, sizes 1 in. to $1\frac{1}{2}$ in.	\$7.50
Yellow Gold Filled neck chains 10 Kt. Gold \$6.00, Sterling Silver at 35c and 50c. These chains are sold only with the hearts, pendants and charms.	

APPROPRIATE GIFTS FOR THOSE IN THE SERVICE OF OUR COUNTRY

Our suggestion would be either books or a yearly magazine subscription, listed in our 1943 Jubilee Catalogue.

MINERALIGHT QUARTZ TUBE LAMPS

For best results in the home, laboratory, or for prospecting. Fully described in a 12-page circular. Write for your FREE copy today. In offering fluorescent minerals, we can supply first quality material with strong fluorescent or phosphorescent effects.

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Two Large Sized Polished Oregon Agate Nodules (\$2.00 value)\$1.00

Our 1943 JUBILEE CATALOG contains 100 pages of information you will find of value. In order to distribute this catalog to those most interested, we are asking you to send us 15c IN STAMPS.

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HERE'S HOW TO . . .

Obtain the specific gravity of small irregularly shaped specimens of non-soluble ores or rocks. Take a small glass graduate, graded in centimeters and large enough to hold the specimen. Place enough water in the graduate to cover the rock. Note the amount carefully. Then place the rock in the graduate and note the exact increase in the amount of water. Next, weigh the rock carefully in grams. Divide the number of grams weight out of water by the difference in the amount of water in the graduate without the stone and with the stone. This gives a fairly accurate estimate of the specific gravity.

ICELAND SPAR WARTIME VALUE ABOVE GOLD

William Hamilton, a miner of iceland spar and beryl, claims that in war time iceland spar is much more valuable and more easily saleable than most types of gold ore. Hamilton is a brother-in-law of the cowboy picture star Bill Jones. The clear, rhombohedral crystals are doubly refractive. They are used in many optical instruments because of this quality. When placed on a sheet of paper over a single straight line, two lines are seen. These crystals are used in spectroscopes, refractometers, and it is believed that they also are used in bombsights for the purpose of picking out the target to be attacked.

AMONG THE ROCK HUNTERS

Ann Pipkin was general chairman of Searles Lake hobby show, held October 16-17 at Trona unified school. Exhibits were entered in various classes such as art, needlework, motion picture photography, minerals and miscellany.

Chanite is the name given to a new alloy said to be suitable for making cutting tools, according to American iron and steel institute. It will release cobalt, tungsten and other hard metals for more important war needs. The composition of chanite is to remain secret until after the end of the war.

Imperial Valley gem and mineral society resumed its meetings October 2. Member Arthur L. Eaton spoke on his trip into Mexico and studies of the new Mexican volcano El Parícutin.

Jack Ryan, research department of American potash and chemical corporation, talked on the Flin Flon, Manitoba, Canada, area at September 15 meeting of Searles Lake gem and mineral society. Flin Flon district produces gold and copper.

Sequoia mineral society met September 1 at Reedley city park. Reedley members furnished the program.

Northwest federation of mineralogical societies, Tenino, Washington, has purchased \$93.50 worth of war bonds.

E. T. Hodge, Oregon state college, Corvallis, Oregon, has issued a 75-page bulletin on the geology of north central Oregon.

Utah reports large deposits of alunite in Piute county. Much of the vein material is pure white, while surrounding areas are of lower grade. Alunite yields alumina for the manufacture of aluminum, potassium sulphate and sulphuric acid.

Kenneth Garner, for several years secretary of California federation of mineralogical societies, has been promoted to radio technical inspector. He is located at Romulus, Michigan.

Dr. John Montanus was host of West Coast mineral society at September 14 meeting. Dr. Montanus displayed over 70 compartment boxes filled with specimens.

Mineral notes and news has begun a series of articles on the fossil woods of California. The first article, by George F. Beck, Central Washington college of education, Ellensburg, Washington, deals with the Calistoga petrified forest, north of San Francisco.

Reports continue about extensive scheelite tungsten deposits in Lower California. Rich ore has been found in many locations in the northern district of the peninsula. Some of it already is being shipped to points in United States for refining.

Santa Rosalia district, south of Ensenada, Lower California, produces some fine turquoise. An old mine, after being idle for several years, once more is in production, although not yet on a large scale.

Sulphide ores, smelted at Garfield and Tooele, Utah, yield large quantities of arsenic oxide, which is collected by the Cotrell process from flue dust. Arsenic compounds are used in insecticides.

Potassium salts are being recovered commercially from salt deposits southwest of Great Salt Lake. These salts are used with phosphates and ammonium sulphate in manufacture of commercial fertilizers.

Chemical engineer Adrian Nagelvoort estimates that sufficient fossil resins can be recovered from the coals of Utah to meet the needs of United States for a century. These resins are used in varnishes.

Utah claims a natural monopoly on Gilsonite, a solid asphalt used in acid proof paints, insulating materials, plastics and mastics.

D. Tucker of mineralogical society of southern Nevada reports that war conditions have made it necessary to separate the club into three groups, meeting in Las Vegas, Boulder City, and Basic townsite. Las Vegas kept up meetings until July, when they were discontinued because of intense heat. Meetings were resumed September 13. Short field trips, which have proved profitable this past year, will be enjoyed as soon as weather permits.

Julia Ellen Rogers was speaker at September 10 meeting of Long Beach mineral society, held at the Nine Hole clubhouse.

GEM MART

ADVERTISING RATE
5c a Word — Minimum \$1.00

Swisher Rocks and Minerals, also Corals, Shells, Statues, etc. We also buy mineral species and woods. Must be good. Swishers, 5254 So. Broadway, Los Angeles 37, Calif.

20 mixed fossils for a dollar bill. 100 ancient Indian arrowheads \$3.00. 10 tiny bird arrowheads \$1.00. List Free. Lear Howell, Glenwood, Ark.

\$2.50 brings you prepaid six rare and beautiful crystallized Arizona minerals. Vanadinite, Diopside, Wulfenite, Willemite, Chrysocolla, Azurite. Specimens 1 1/2 x 2 or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

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

Minerals, Fossils, Gems, Stamps, Coins, Pistols, Glass, Bills, Indian Relics, Bead Work. Catalogue 5c. Las Cruces Curio Store, Las Cruces, New Mexico.

Montana Moss Agates in the rough for gem cutting \$1.00 per lb. plus postage. ELLIOTT'S GEM SHOP. Petrified Picture Wood and Moss Agate Jewelry Hand Made in Sterling Silver Mountings—Rings, Bracelets, Necklaces, Brooches, Tie Slides, etc. Mail orders filled anywhere in U.S.A. 25 Jergins Arcade, Long Beach, Calif.

PLUME AGATE—Rough pieces for gem cutting \$1.00 up postpaid. Bishop's Agate Shop, North Bonneville, Wash.

CABOCHON CUTTERS with our unnamed mixture of good cutting material sawed ready to shape cut and polish you can finish several fine stones. 25 cents for two ounces and with money back guarantee. Gaskill, 400 North Muscatel, San Gabriel, Calif.

HERE ARE BIG BARGAINS . . .

Rare Crystals of all kinds, \$1.50 and up. Montana Sapphires, cutting quality, 60c a carat. Sawed California Geodes, 25c and 50c each. Send for my Gem List, 10c, cost returned on first order. Specimens can be returned if not satisfactory. The Desert Rats Nest, 2667 E. Colorado, E. Pasadena, Calif.

ANTIQUE JEWELRY — Locketts, brooches, chains, rings, etc. 12 assorted, \$3.00. B. Lowe, Box 311, St. Louis, Mo.

AGATES, Jaspers, Opalized and Agatized woods, Thunder eggs, polka dot and other specimens. Three pound assortment \$1.50 postpaid. Glass floats, price list on request. Jay Ransom, 1753 Mentone Ave., Pasadena, Calif.

ZIRCONS—OPALS—CAMEOS — 3 Genuine diamond cut Zircons (total 2 1/2 carats) \$2.75. Twelve Genuine Opals \$1.50. Twelve Genuine Cameos \$2.50. B. Lowe, Box 311, St. Louis, Mo.

100 JEWELRY STONES removed from rings, etc., assorted \$2.00. B. Lowe, Box 311, St. Louis, Mo.

ROCK COLLECTORS ATTENTION—GET ACQUAINTED OFFER—Send two dollars war stamps or coin, for five showy specimens of Rainbow Rock, Tourmaline, Chalcanthite, Limonite Pseudomorphs, Iron Pyrite, Inclusion QTZ. XL., Fluorite, Beryl, Hematite XLS., Martite, Pecos Diamond, Quartzoid, Neptunite, Topaz, Iceland Spar. All 15 for \$5.00. The Rockologist Chuckawalla Slim, 627 E. Garvey Blvd., Garvey, Calif.

WANTED—16 in. diamond saw and lap wheel with or without motors. Write Box FS. Desert Magazine, El Centro, Calif.

Dr. D. H. Clark spoke on past field trips at September 12 meeting of Orange Belt mineralogical society, held in Pinerum, Sylvan park, Redlands. He also discussed iron, stressing lode-stone.

Orange Belt mineralogical society discussed quartz minerals at October 7 meeting, held in science building, San Bernardino junior college.

Chuck Jordan and Rocky Moore have dissolved partnership and now Chuck is conducting the rock business on his own at 201-202 Broadway Arcade, Los Angeles. He is ably assisted by his niece Violet Crowther. Chuck introduced Utah wonderwood to Desert readers through a name contest. This interesting wood is as yet unidentified. Some specimens show beautiful carnelian replacements.

Texas mineral society, Dallas, has changed meeting date to second Tuesday of each month. President Thos. D. Copeland has appointed Prof. Lynch program chairman and Mr. Jarvis membership chairman. Anyone interested is invited to attend meetings held at Baker hotel.

Searles Lake gem and mineral society held a pot luck dinner at home of Mr. and Mrs. Harry L. Jewel on Bonewits ranch near Inyokern, September 26.

TALC HAS IMPORTANT ROLE IN POTTERY MAKING

Pottery is coming to the fore as a substitute for metal cooking utensils. Baking dishes, skillets and top of the stove kettles are available to take the place of scarce iron or aluminum vessels.

Students in the ceramics department of USC have been experimenting for the past two years with various clays. They have found that 10 or 15 percent talc, combined with a potassium carbonate clay, gives most satisfactory results. Talc does not expand or contract when exposed to heat, is inert to most corrosive agents, and serves as a catalyst during the firing process.

DESERT QUIZ ANSWERS

Questions on page 32

- 1—Suspension type bridge.
- 2—Discoverers Shorty Harris and Ed Cross thought the greenish-blue ore resembled color of bullfrog.
- 3—All are in New Mexico.
- 4—Yucca is called soapweed, or amole, and is used by Indians for soap especially in ceremonial rites.
- 5—Jet is associated with coal deposits.
- 6—Marcos de Niza.
- 7—Phoenix.
- 8—Indian tribe of Yuman origin, inhabitants of western Colorado desert and Warners Ranch area, San Diego county.
- 9—Ocotillo. Not an "a" in the whole word.
- 10—Quartz.
- 11—Basket-making.
- 12—Cinnabar, ore of mercury.
- 13—Moth which brings about pollination of yucca plant.
- 14—Death Valley.
- 15—Rock collecting maniac. See DM, February, 1943.
- 16—Navajo mythical character.
- 17—Most recent book by W. A. Chalfant, winning for him membership in International Mark Twain society.
- 18—Southeastern Utah.
- 19—Open pit produced by surfacing mining.
- 20—Walpi.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

Standin' night watch in a observation post is sort uv like spendin' the night campin' on th' desert on a field trip. Yu can watch th' big dipper's revolution 'n hear night noises—after radios 'n automobiles goes to bed. Yure alone with yur thots 'r problems, surrounded by limitless space, 'n inspired by heaven's star pattern. But if yu spots a star movin' steadily acrost th' sky it's time to stop dreamin' 'n call army Flash—cause that kind uv starz is airplanes.

Sum rockhouns seems to find good rox jus' by Instink. Like horses locates water in a dry country. These lucky peepul seems to know xactly where to dig f'r geodes 'r whitch hill to clime f'r good agate. They can be drivin' along ('r could be before we got this Duration) 'n suddenly spot a place where there's Specimens, when to th' fella without a rockhoun's instink th' flat looks jus' like all th' rest of th' malapai roundabout.

H. A. Trexler from S. M. U., spoke on agates and their localities at September 3 meeting of Texas mineral society. Roy Yeager, Bell telephone company of Dallas, showed his facet cutting and polishing equipment at October 12 meeting.

Professor D. Jerome Fisher and Alfred Chidester have been sent by U. S. geological survey into the Hemet-San Jacinto district to prospect for beryllium (glucinum) and tantalum to be used in the war effort. Small deposits of both minerals were located. These metals are used in alloys.

Most visitors to Queretaro, state of Queretaro, Mexico, come away with the impression that the crude ore for the beautiful Mexican opals which have been polished and sold there for many years is actually a product of the mountains in the vicinity of that city. This is not quite the truth, at least in recent years. The Indians who cut and polish the ore usually go by train to the smaller town of San Juan del Rio, about 30 miles south of the city on the railroad, and from thence to the opal mines. The ore is purchased from the mines, brought back to Queretaro, polished and sold there.

ZINCITE

Zincite is not only a colorful mineral but one rich in zinc, as it generally carries more than 80 percent of that valuable metal. It seldom crystallizes, but is nevertheless very attractive, as its foliations usually appear in rich red colors, or orange yellow, due to the presence of small quantities of manganese oxide. It is a soft brittle ore, with almost adamantine luster. It occurs, mixed with franklinite and willemite, at Franklin Furnace, New Jersey. Its most attractive form is when brilliant red lamellar masses are mixed with massive pink calcite. If a large piece can be secured, try it under the ultra-violet or black lamp. This test will guarantee it a place with the very choicest specimens.

Production of gem stones in the United States during 1942 dropped almost 40 percent from the high point of 1941, according to reports of the bureau of mines. Uncut stones, used in jewelry and related industries, were estimated to have a value of about \$150,000. When cut and polished, they were worth about \$400,000. The same industries, in 1941 purchased \$240,000 worth of uncut stones, which had a value of \$750,000 in the finished state.

CUTTING SPECIALS...

This month we are featuring a selection from our stock of nodules. Certain types of them may be increasingly hard to get in the near future, as some localities, notably that of Lead Pipe Springs, are now in Military zones.

1. Oregon Agate Nodules—We will select you nice ones from the Friday ranch of Central Oregon at **30c per lb.**

2. Geode-Nodules—Chocolate Mtns. of Calif.—Some of these are crystal filled geodes, while some are completely filled with agate. **30c per lb.**

3. Blue Agate Nodules—These are one of the most beautiful of the many nodule forms. These are usually blue with white banding.

4. Assortment of one each of above in good cutting size, \$1.00.

SNOWFLAKE OBSIDIAN

This beautiful material has been so popular that we have decided to feature it again at **\$1.00 per lb.**

Above prices do not include postage.

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AMATEUR GEM CUTTER

This page of Desert Magazine is for those who have, or aspire to have, their own gem cutting and polishing equipment. Leland Quick, who conducts this department, is former president of the 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, California.

By LELANDE QUICK

This section would have no reason for being if it did not stimulate interest in gem cutting or furnish ideas that helped experienced cutters do better lapidary work. The best evidence that it fulfills its purpose is the correspondence I receive. This does not find its way into the "Letters" section because it is largely personal or contains questions the answering of which would be redundant or questions that are answered directly in the column with the name of the writer mentioned. All letters I receive are answered direct unless the reply contains something original of help to gem cutters or something that is not merely fundamental and then the replies get into the column in an informal manner.

But I need to hear more of the readers' experiences because I never receive such letters but that I cull something of value from them, something I want to try myself. Give me a few "helps and hints" as Mr. Kane does this month. Give me ideas I can illustrate such as Herbert Monlux and Albert Hake have given me.

Peter Zodiac, editor of Rocks and Minerals magazine tells me "your column in Desert Magazine always attracts my attention and I hope you will continue it."

Dr. Dake, editor of the Mineralogist magazine advises, "It is possible to cut cabochons from a good many of the strongly fluorescent minerals. When viewed under ultraviolet light they are really something magnificent. A cabochon cut from the red fluorescent calcite and green willemite gives a combination of colors that takes the eye. One reason the fluorescent gems are so vivid is that a smooth surface on a mineral is free of pits and shadows. The fluorescent effect is much improved by a smooth or polished surface." Mr. Zodiac's kind remarks and Dr. Dake's interesting suggestions are appreciated.

C. L. McCullough of Modesto, California, wrote me some time ago that he has an iris opal and that is something I want to see. He says he bought it from Wendell Stewart but when he later showed it to him Stewart said he'd never seen anything like it before. Has any other reader such a stone? If as many as 25 readers advised me by postal of the most unusual gem in their collection I would have a mighty interesting page some month.

Louise Eaton, who writes that delightful whimsy on another page entitled "Cogitations of a Rockhound" always has a delightful bit of philosophy. I agree with her that field trips are a safety valve for the high pressure of living—and how we need them now. It is true, as she says, that almost every rockhound desires to own a jeep after the war. Those things were made for field trips but they tell me they do need a spring or two in the driver's seat. I don't know how many will be available but they say there are 10,000 rockhounds in Los Angeles county alone and that's a starter. The jeep will become the modern burro.

Think how the next 10 years will affect the field trip. You will probably be able to leave Los Angeles on a Saturday night and travel all night on a lighted highway at any speed that doesn't scare you for the speed limits on certain highways will be very high. You will travel on divided multi-laned highways on tires good for perhaps 70,000 miles of driving and with gaso-

line good for 50 miles per gallon. You'll have a trailer with refrigeration and the jeep will be hitched behind the trailer so that you'll have your own caravan. In a small box you'll take enough dehydrated food to eat for a week and by noon on Sunday you'll be parked on a side road in the far reaches of Utah or northern New Mexico. Then you'll take the jeep and explore for gem materials in locations that have never heard the ring of a mineralogist's hammer nor seen a beer can. Fantastic? Not a bit of it. Check up on this in 10 years and see if I'm wrong. And I haven't even mentioned helicopters.

When almost no spot is immune to the rockhound will some of the charm go out of the desert? Lots of the romance of the desert is in its unattainability. Speed and convenience do not always bring content but I look forward to it.

DID YOU KNOW . . .

- Some of the finest chrysoprase ever found came from Tulare county, California. It exists at Yokohl, on the eastern slope of the Venice hills, on Tule river and Deer creek and one mile east of Lindsay.
- Kunz found ruby spinel near San Luis Obispo in 1905.
- Catalinite, found on Catalina Island, is a mottled jasper and onyx.
- Psilomelane takes a beautiful polish. It occurs in 37 California counties and I'll tell you where it occurs in your county if you send me a postal request.
- Brown zircons "heat treated" in air turn golden or colorless. If treated in an atmosphere deficient in oxygen they turn blue.

LAPIDARY HELPS AND HINTS . . .

(Contributed by William J. Kane of San Francisco who has cut one of the best collections of cabochons to be found in that area.)

In mounting transparent, semi-transparent and translucent stones for display polish them on the back and place them over the colored portions of magazine advertisements until you find the color that best complements the stone with its reflection. Cut the paper to fit and cement to the back of the stone with Du Pont Duco cement. Many lifeless agates come alive with this method and patterns show more vividly. Tin foil is an excellent backing agent if you can get it.

A well-worn piece of No. 100 sanding cloth will polish cabochons better and last many times longer than the No. 220 cloth.

Clean sanders occasionally by using a piece of sponge rubber at running speed.

Polish flats with No. 00 or No. 000 flint type sandpaper on a disc wheel running at 400 R.P.M. The disc must be slightly convex or it will quickly undercut and the flats should be held off center. Flint usually being the same hardness as the flat acts as a buffer but only stones of quartz hardness (7) are successfully polished with this type paper. It causes a heavy drag and a firm grip with even pressure must be maintained.



WRITER LEARNS NAVAJO WEAVING FIRST HAND

In **SPIDER WOMAN**, a story of Navajo weavers and chanters, Gladys A. Reichard gives an intimate account of her life among the Navajo. Dr. Reichard, a young professor at an eastern college, spent several summers among them to learn rug-weaving. Her experiences while learning the complicated craft are told with rare humor.

She explains the various stages and operations from the time the wool is spun and dyed until the rug is completed and taken from the loom, promoting a keen appreciation of the skill employed in creation of the Navajo rug. She tells how the designs are worked out in color and motif—some of the designs being created as the rug progresses while others are copied from sandpaintings.

Her sincerity and interest caused the Indians to adopt her into their family thus permitting an intimate study of their character and customs and an opportunity to learn the language. She describes two of the more sacred ceremonies—a "sing" for the silversmith's daughter and a Navajo wedding ceremony.

To the reader who is interested in a human and fascinating picture of the Navajo, this book is truly an ethnological treat.

The Macmillan company, New York, 1934. Illus. 287 pp. \$3.50.

—Evyonne Henderson

THE FANTASTIC CLAN



As enjoyable as a good travelog. Tells you how to "call by name" the odd members of the spiny clan of the desert.

THE FANTASTIC CLAN by Thorner and Bonker, describes with charm and accuracy the strange and marvelous growth on the desert. An informal introduction to the common species in their native habitat, including notes on discovery, naming, uses and directions for growing. Many excellent drawings, paintings and photographs, some in full color. Endmaps, glossary, pronouncing vocabulary, index.

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CACTUS-SHARP WIT IN DESERT RAT'S BOOKLET

Harry Oliver, whose wit is "... sharp as desert cactus..." has compiled articles from his newspaper column **Desert Briefs** into an attractive booklet called **99 DAYS IN THE DESERT... WITH SANDY WALKER**. History, travel, odd bits of information are written with dry humor, and seasoned with the fresh simple philosophy of an imaginary character, Sandy Walker, who probably is a rough characterization of the author himself. Attractively covered in brown art paper with hand block prints, 42 pp., end map. 25c.

—A. M.

TENDERFOOT HAS MORE ARROWHEAD ADVENTURES

Continuing the exciting chronicle of young Peter Stirling's Arizona adventures, W. H. B. Kent recently completed **RANGE RIDER**. This volume follows **THE TENDERFOOT**, written the previous year, which first introduced to Western fans the former Yale man who came West to make good, heroine-ranch owner Gail Gordon, amusing Saturnino, memorable ranch cook Footless and other Arrowhead ranch characters.

Fast moving story opens with a murder, and soon involves Peter in rustling and range war action, in which he again disproves that a tenderfoot from the East need remain a tenderfoot.

The Macmillan company, New York, 1943. 193 pp. \$2.00.

—Flo Sibley

FOR TYPICAL WESTERN RANGE WAR IS BACKGROUND

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The Macmillan company, 1943. 232 pp. \$2.00.

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By RANDALL HENDERSON

WITH THE U. S. ARMED FORCES IN AFRICA—Now I've seen the daddy of all the deserts—the Sahara. The opportunity came when I was transferred from Bush-town to a new permanent station in another part of the African continent.

For many hours I looked down on a vast panorama of desert—some of it so barren of vegetation or topographic features that our travel involved much the same problems of navigation as in crossing an ocean.

At other times we passed over a terrain that resembled so closely the mesa between El Centro, California, and Yuma, Arizona, I instinctively glanced around the horizon in search for the Algodones sand dunes or the Chocolate mountains. I wondered if those tiny bushes and trees on the desert floor below have any resemblance to the creosote and ironwood of my home desert.

We passed over mesas that recalled to my mind the three mesas of the Hopi Indians in Arizona, and rocky escarpments and playas and malpai flats and arroyos—only they do not call them arroyos here. They are wadis.

There were no clouds in the sky as we crossed the great African desert, but there was a yellow haze around the horizon that blended perfectly with the sand below and then softly faded into the blue of the sky above. At no time could we see a sharp clear-cut skyline. It was as if the desert sands simply rose up in a distant wall that completely surrounded us, and we were flying in a great yellow bowl, with only the terrain directly below us clearly visible.

* * *

A range of mountains loomed ahead, and as we headed for the pass through which we were to fly, the air became so bumpy some of the passengers fastened their safety belts. The co-pilot came back through the cabin reeling like a sailor on a storm-tossed sea. There was an extra heavy lurch.

"Must have hit a rock," he remarked. Some of the soldiers grinned.

"Oh yes," he added, "the sand storms up here lift huge boulders right up into the sky and it always makes rough riding for the passengers." I suspect that some of those in the plane were sick enough just then to believe he was telling the truth.

Once we stopped at an oasis for refueling. I cannot tell you the devious route nor the means by which high octane is brought into this remote desert settlement—but a crew member told me it cost Uncle Sam \$6.00 a gallon to refuel his planes at this point.

We left the plane for a few moments while the tanks were being filled. And I can assure you there was one passenger who really enjoyed the blast of 115-degree desert air that hit us. It was the most homelike feeling I have experienced since I came to Africa. After six months in the humid air of the tropics I was glad again to be in a place where my clothes would not forever have the musty smell of stale bread.

We have palm oases on the Southern California desert—but not like these on the Sahara. The native palms of my desert are Washingtonias. Here they are date palms, tall ragged trees that look as if they might have been supplying food for the Arabs for thousands of years. This is Mohammedan country, and the white domes of mosques, nestling among the palms, bear testimony to the religious devotion of these wild desert tribesmen.

During our brief stop, I walked across the field to a wadi that bordered it on one side—and wished John Hilton was there to explain the strange erosions in the limestone rocks. They made me think of the rillensteine described by Jerry Lauder milk in the December, 1940, issue of *Desert Magazine*, except that these erosion grooves were always in concentric circles. They looked so much like the weathered cross-section of an old piece of timber that some of the passengers insisted they were petrified wood. But obviously that was not the answer. I wanted to take a specimen along for my collection, but when one's entire kit for military service overseas is limited to 55 pounds, it is no time to be gathering rocks.

Camel caravans thread their way along the trails that cross this desert. Camel transportation is picturesque. But frankly, I prefer to do my desert exploring in my old jalopy. I've now tried both kinds of locomotion and I think a camel is a fine institution—for the Sahara. At that, I am afraid this grand old four-legged ship of the desert is going to have to give way sooner or later to these big-tired jeeps.

* * *

Eventually we reached our destination, and I was billeted that night in a little stucco cottage surrounded by palms, agave, almond, bougainvillea, pepper, eucalyptus and geraniums. It was a little bit of Southern California—but the people spoke a strange language and on the street we passed donkeys and camels and clumsy two-wheeled carts, and a few automobiles powered from charcoal burners.

I've had my glimpse of the Sahara, but I'll not want to remain here when the war is over. The place is too big. It is too far between waterholes. I want to be where I can drop in occasionally and say "howdy" to George Perkins and Jack Mitchell and Steve Ragsdale and Russell Nicoll and Charles Kelly and Katherine and Bill Wilson and a thousand other good friends who speak the language of the desert—but a language that I know. And besides, I don't think I would ever get used to riding these camels.

* * *

At a future date, when they are passing out laurels to the airplane pilots who shot and bombed the enemy out of the war, I want to put in a word for the transport pilots who every hour of the day and night are carrying great loads of personnel and supplies across the wide expanses of ocean and desert. Combat pilots, in cooperation with ground forces and the navy, will win the war—but the end will come much sooner because of the skill and courage of these unsung pilots and navigators and radio operators of the transport service.

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