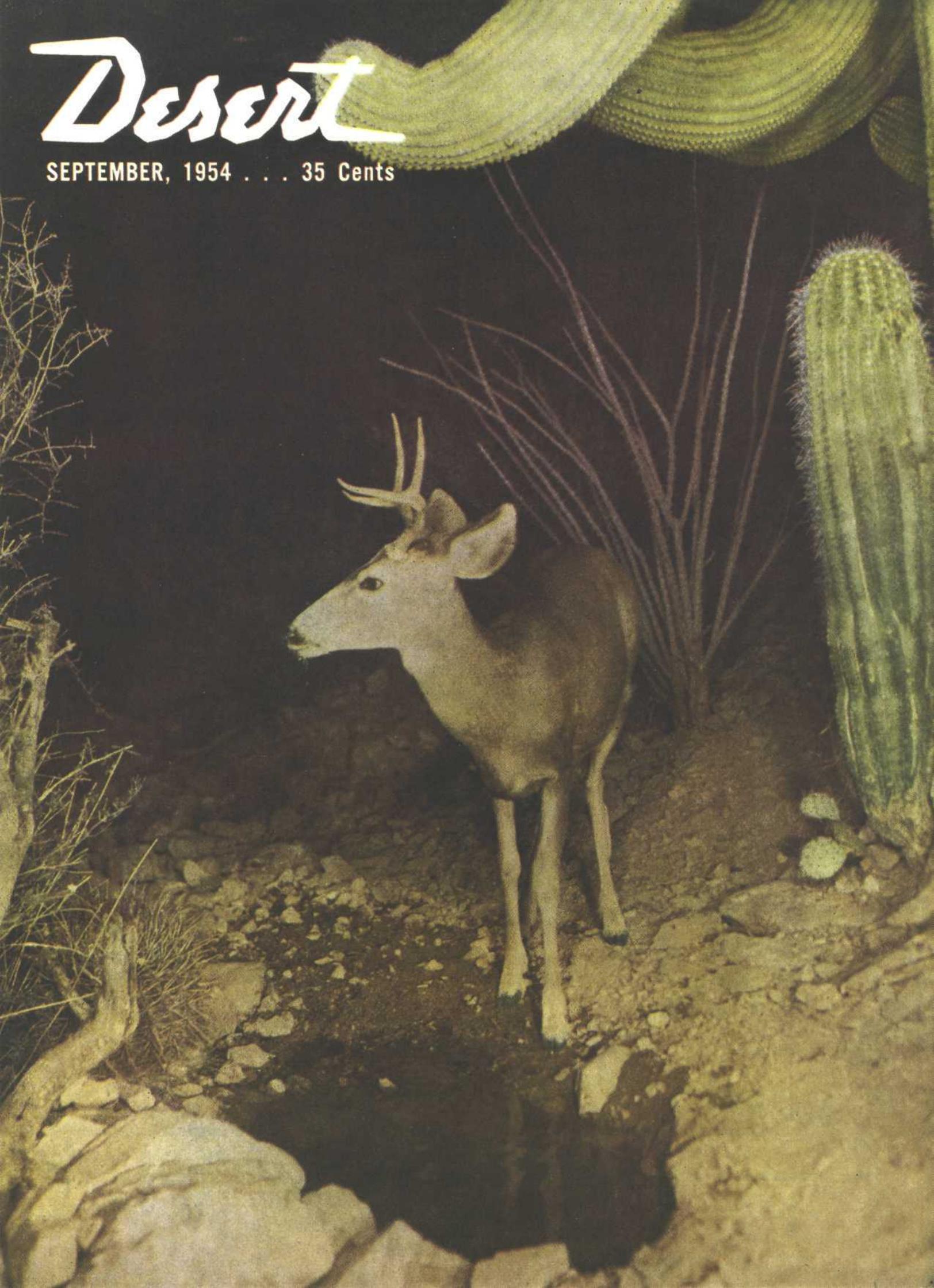


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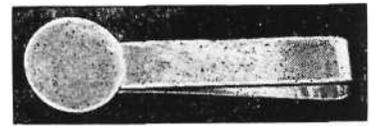
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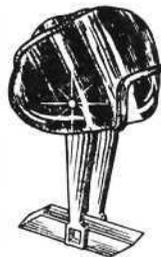


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DESERT CALENDAR

- September 2-4—Summit County Fair, Coalville, Utah.
- September 3-6—Onion days and Rodeo, Payson, Utah.
- September 3-6 — Elko County Fair, Elko, Nevada.
- September 3-6—Annual Fiesta, Santa Fe, New Mexico.
- September 4-5—Socorro County Rodeo, Socorro, New Mexico.
- September 4-6—49er show and stampede, Fallon, Nevada.
- September 4-6—Nevada Rodeo, Winnemucca, Nevada.
- September 4-6—Old Time Mining Celebration, Randsburg, California.
- September 4 - December 1—Reproduction of murals from kiva walls in ancient Awatovi Ruin in Arizona. Museum of Northern Arizona, Flagstaff.
- September 6—Labor Day Celebration, Gila Bend, Arizona.
- September 6 — Junior Rodeo, Springerville, Arizona.
- September 6 — Yuma Rodeo, Yuma, Arizona.
- September 9 - 11 — Livestock Show, Cedar City, Utah.
- September 9-12—Antelope Valley Fair and Alfalfa Festival, Lancaster, California.
- September 10 - 12 — Navajo County Fair, Holbrook, Ariz.
- September 10-12 — Navajo Tribal Fair, Window Rock, Ariz.
- September 11 - 13 — Annual Meeting, Wilderness Society, Glenwood, New Mexico.
- September 15-16—Mexican Independence Day celebrations, Eloy, Glendale, Nogales and Tuscon, Arizona.
- September 16-18--Dixie Round-up, St. George, Utah.
- September 17 - 19 — Yavapai County Fair, Prescott, Ariz.
- September 18-26 — Utah State Fair, Salt Lake City, Utah.
- September 24-October 3—State Fair Rodeo, Albuquerque, New Mexico.
- September 28-29 — Celebration (with parades, *bailes* and Rodeos), Taos, New Mexico.
- September 30—Sundown Dance, Taos Pueblo, New Mexico.



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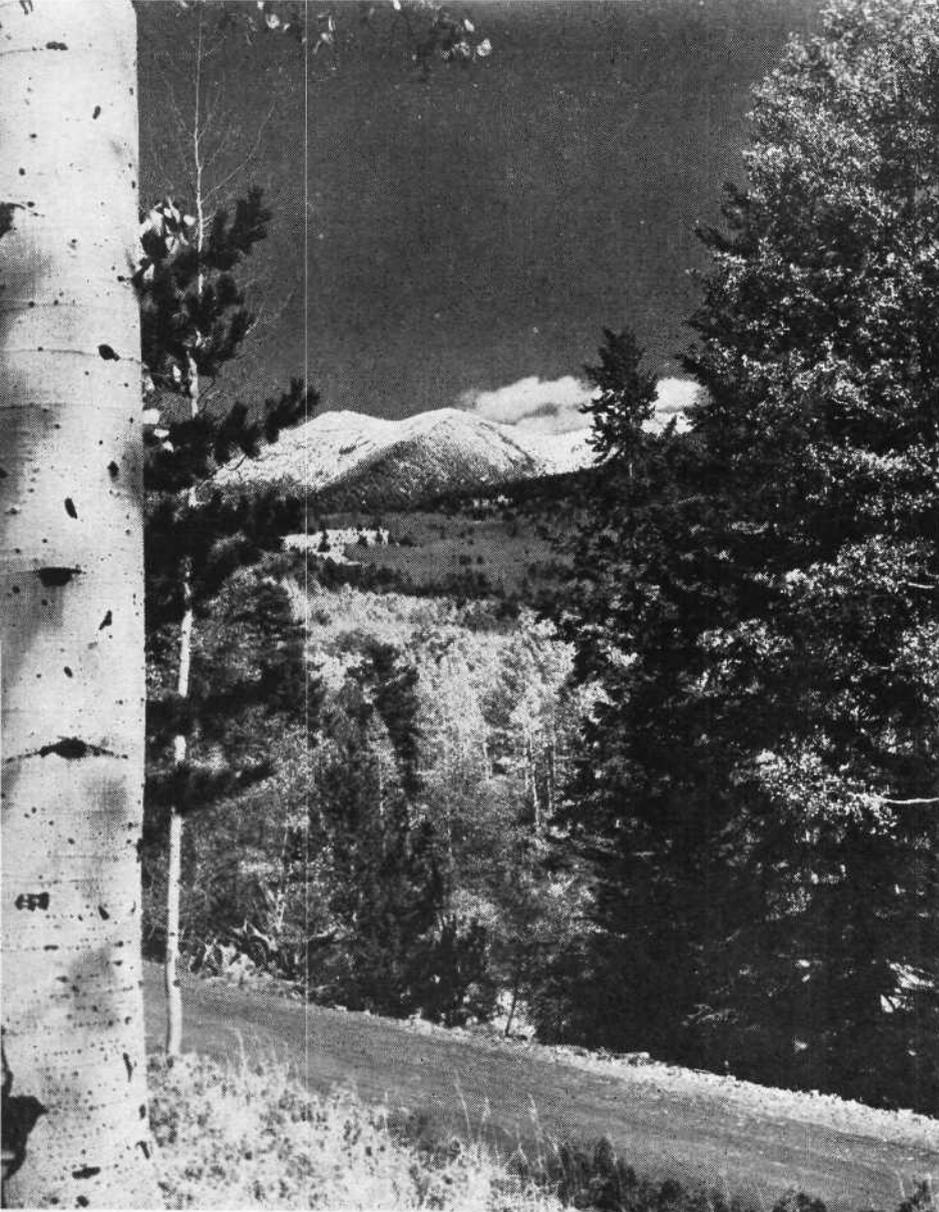
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PICTURES of the MONTH



Landscape . . .

Setting his tripod in an aspen grove near Flagstaff, Arizona, Dr. J. Robert Lindsay of Worcester, Massachusetts, captured this striking landscape, framing the snow-capped San Francisco Peaks with aspen and pine. The picture, taken with a 4x5 Busch Pressman camera, 4.7 Raptar lens, Super XX film, A filter, 1/10 second at f. 32, won first prize in Desert Magazine's July photo contest.

Indian Sisters . . .

Willard Luce of Provo, Utah, was awarded second prize for this study of two Navajo girls outside their hogan door. He used a Ciroflex camera, Super XX film, yellow filter, 1/50 second at f. 11.





Shiprock, core of an ancient volcano stands on the New Mexico desert—a challenge to all the fraternity of mountain climbers. Spencer Air Photo.

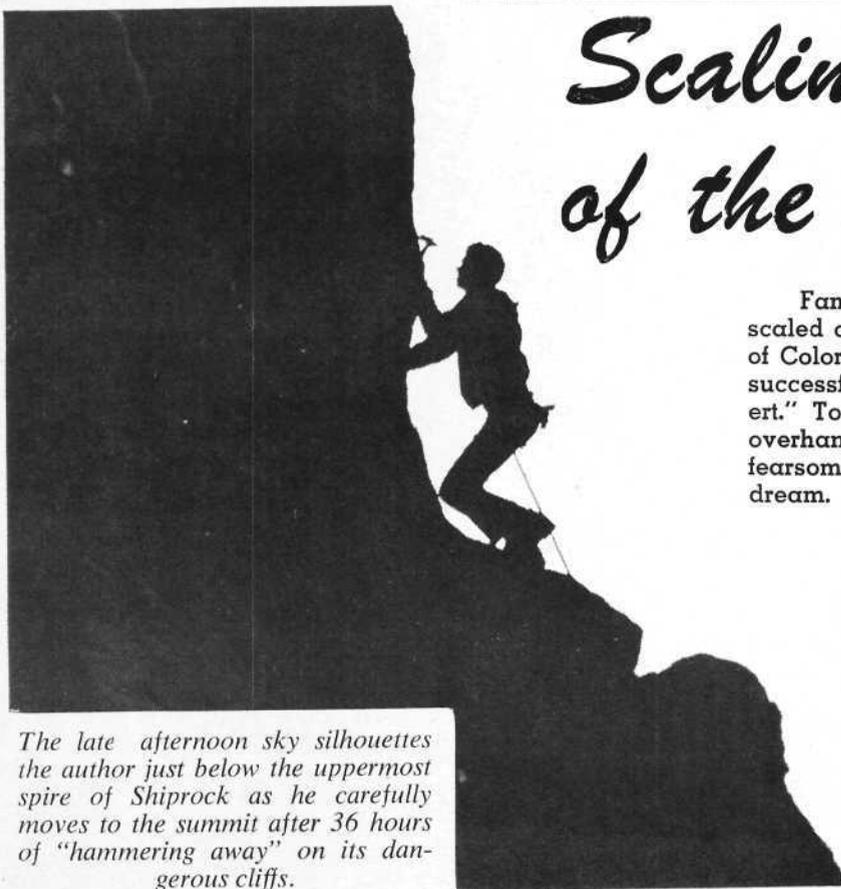
Scaling the Ship of the Desert . . .

Famous Shiprock of New Mexico had been scaled only seven times before these four students of Colorado A&M College made their second and successful attempt to master the "ship of the desert." To stand on its summit they battled its double overhang, the "Horn," friction traverses and its fearsome height for 36 hours, fulfilling a year-long dream.

By DOUGLAS E. KELLY
Photos by Party Members

COOL DESERT AIR freshened our cheeks and filled our lungs as we stood at the base of the imposing ship of the desert, the famous Shiprock of New Mexico.

The first fingers of a rosy dawn stretched from the eastern horizon into the hazel black sky above us as we started our ascent of one of the toughest, most challenging rock climbs in the country.



The late afternoon sky silhouettes the author just below the uppermost spire of Shiprock as he carefully moves to the summit after 36 hours of "hammering away" on its dangerous cliffs.



Equipment used in the climb of Shiprock included 7/16 inch nylon climbing rope, 1/4 inch nylon climbing rope, Bramani soled climbing boots, piton hammer, assorted types of pitons (center), two types of karabiners (upper left center), and an expansion bolt assembly with an expansion bolt drill (upper right center). The group was equipped with seven ropes of over 100 feet each, eight expansion bolts, 50 pitons and 15 karabiners.

Only seven parties of skilled climbers had conquered it. We were embarking on our second attempt. This time we felt conditions were so near perfect we would succeed.

It was May 15 and the weather was cool and cloudy—perfect for climbing. We had an array of equipment, Bramani soled shoes, hundreds of feet of rope, expansion bolts, pitons and more. It was an expensive supply of climbing paraphernalia that had been accumulated as our year-long dream of climbing Shiprock had grown.

The four members of our climbing party, all students of Colorado A&M College, were welded together by a common, driving ambition to scale Shiprock, from previous expeditions and months of climbing practice on mountains near school, from a previous defeat by Shiprock that crystallized our determination.

Most experienced mountain climber in our group was Dick Stenmark, member of the Colorado Mountain club and the exclusive "52 club," restricted to persons who have scaled all peaks over 14,000 feet in Colorado. Upon completion of school he expects to become a ranger with the U. S. National Park Service.

Then there was Erik Barnes, youngest member of our party and a student of veterinary medicine. He

has traveled extensively, around the world last summer, and hopes for a career in South America where there are also plenty of peaks to be climbed.

Jack Morehead was a member of the group, making the climb on a leg weakened by a fracture two years earlier in a skiing accident. Jack, too,

is a forestry student and hopes to serve with the U. S. National Park Service.

And I was the fourth member. I became interested in mountain climbing in Colorado, though I now live in California where I have just now made a start on the peaks of that region. A zoology student, I plan to do graduate work at Stanford University.

The Shiprock was not a mystery to us as we tackled it. We had studied all available literature on it, discussed it thoroughly with men who had conquered it and examined their photographs.

Shiprock, we learned, has an interesting history. Naturally enough, much of the rock's early story comes as legends from Navajo Indians of that region. They call it *tae-bidahi*, meaning the "winged rock."

According to one legend the rock was a great ship that carried Navajo forefathers from the north—hence the name Shiprock. Tales that Indians seeking refuge from war climbed the rock, I can testify, are grossly exaggerated.

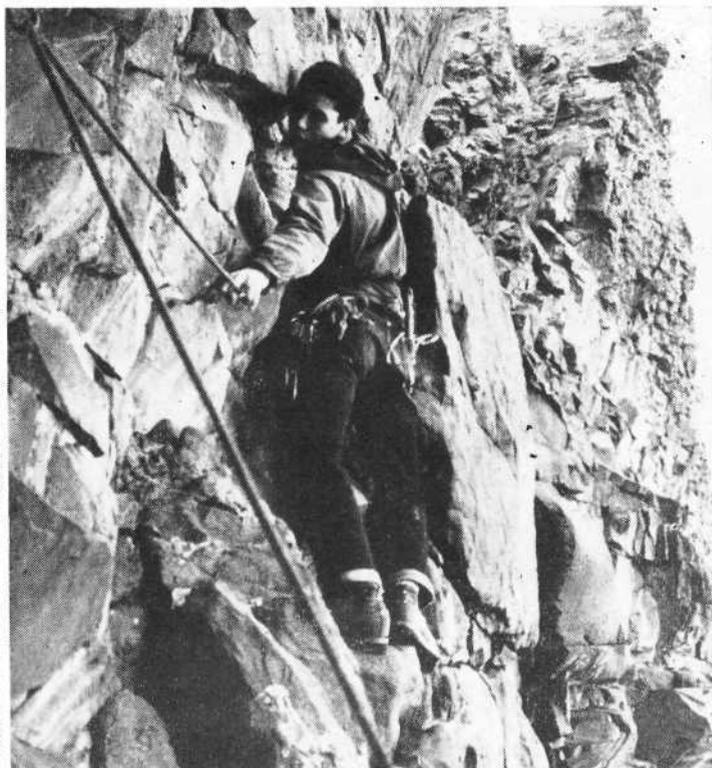
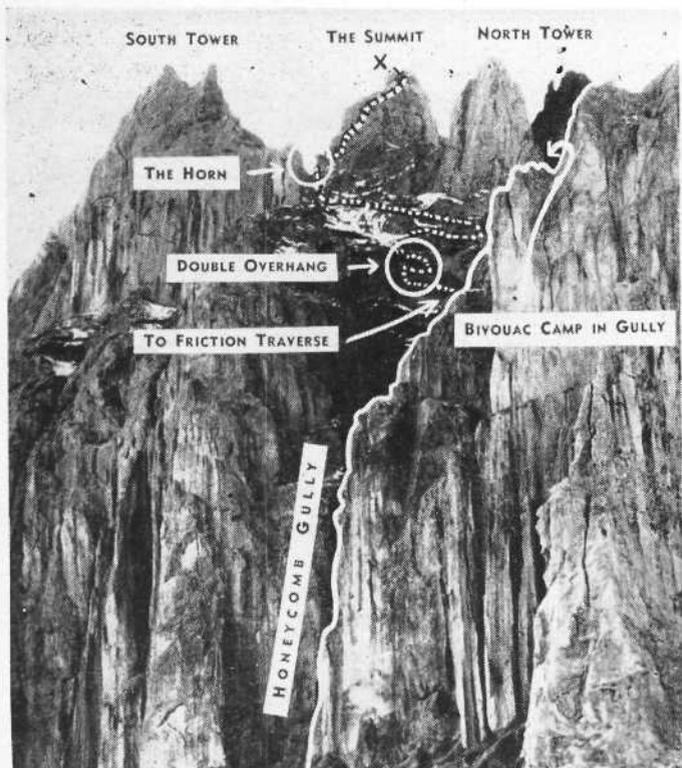
Actually Shiprock is the plug of a volcano. Outer parts of the ancient cone have eroded away, leaving the beautiful 1,700-foot core of igneous rock towers.

Extending out from its base are several long dikes, formed by the intrusion of molten rock into cracks around the formerly active cone.

Hardened and eroded, they remain as long rock-like spokes from the hub of a wheel. Two are especially large, extending almost directly south and west. From certain viewpoints these

Members of the successful climbing expedition were (left to right): Dick Stenmark, Jack Morehead, Erik Barnes and Douglas E. Kelly, the author.





Showing the more difficult upper reaches of the route to the top of Shiprock. Actually, much of the route to the top is invisible from any one direction.

The author, Douglas E. Kelly, leads, working slowly around a traverse on the first day of climbing. He is on belay on the last pitch to the top of Basalt Bowl.

two are similar to a wake behind a boat, giving the rock a resemblance to a stately-masted ship at sea.

Early climbers in the 1920s and '30s attempted ascending Shiprock by a long gully or couloir on the southeast side. It was not until 1939 that five capable rock climbers from California discovered a way around the north tower, which, it had been believed would prevent ascension from that side. After more than a week of exploring and climbing, the party reached the summit.

The rock was not climbed again until 1952 when a group from Colorado University reached the summit. Then five more parties made the climb. Now it was our turn.

Our first attempt, on Thanksgiving, the fall before, was frustrated by cold weather that pushed the mercury down to 29 degrees. The numbing cold held that trip to a scouting expedition.

We were awed by Shiprock's fearsome height, beautiful combination of colors, delicately eroded spires and thrilled by the climbing problem it posed. There was no doubt, we would be back.

The winter passed rapidly and finally we were on our way up Shiprock again.

With Erik in the lead, and the ropes out now, we moved into the bowl reaching the point where we had turned around in our first attempt. A large

gully extended upward on our left. We worked our way up and into it, climbing slowly and easily over the steep rock with our 35-pound loads. Emerging from the gully, we found ourselves at the bottom of a vertical rock amphitheater—the upper bowl. Several hundred feet above was the notch marking our route at the top of the bowl.

Shiprock had surprised us at the outset. As we ascended, we knew we had underestimated the difficulty of the bowl. Jack and Dick attacked the first section, and as they climbed they found it necessary to hammer occasional pitons into cracks as safety belays for their nylon rope.

This was tough climbing—and only the beginning. About half way up, Erik and I took over the lead. The rucksacks took a terrific beating on the rocks as we hauled them up after each pitch of climbing.

Going up nearly vertically, loose rock made movement tedious. Now and then a hunk would tumble down, careening for what seemed hours before disappearing with a final crash below. The top of the bowl wasn't reached until noon. Meanwhile, the sky had clouded up. While three of us hauled up the packs, Erik fixed one end of a 120-foot rope to a piton. Then he tossed the rope down the gully we found leading off on our left to the base of the north tower. Using a rappel, he came to rest on a large chockstone wedged halfway down the long

couloir. There he waited for the packs to be lowered and for us to come down.

Though we didn't know it at the time, this spot was to be our bivouac site for the night.

Though the weather was growing forbidding, we continued to the base of the north tower, hoping to gain more distance on our first day.

Lightning flashed to the desert floor below and a light rain started. Our progress came to a temporary standstill.

A hazardous spot in an electrical storm, we took off all metal equipment and left it some distance away to avoid attracting a bolt of lightning.

The rain dampened the rock and cost us precious time. Finally the wind dried out the slippery breccia and Erik prepared to lead around the base of the north tower on a steep wicked-looking friction traverse.

Without a crack in which to drive a piton, he drilled a small hole in the rock and inserted an expansion bolt. He attached a steel snap ring called a karabiner, through which ran the rope between him and Dick. Dick braced himself, ready to catch Erik in case of a fall. Erik crept out. Below his exposed position the honeycomb gully dropped away for hundreds of feet. Slowly he worked across and then up to a point where another piton was pounded in.

Each step took intricate balance.

We watched tensely as he negotiated the pitch without incident, settled himself on a shelf, and waited to belay the rope as Dick went across. A beautiful job of leading!

After Dick came my turn, and as I started, I felt a buzzing in my ears, indicating the presence of a static electrical charge and the possibility of a lightning strike. I hurried to get across, but before I made it, a couple of small electrical charges danced down the rock next to Jack. It was fair warning of another shower.

"Let's call it quits for today," Jack called over to us as we huddled together on what we had affectionately dubbed "Misery Ledge."

"Where can we bivouac? There's certainly no place here."

"Guess we'll have to go back to the chockstone," was the final answer.

Reluctantly, we began our retreat back across the pitch and up the gully. As Erik returned, he left a fixed rope

across the difficult pitch to aid us the next day.

Then came a fascinating night. Camped on a small platform miles away from anything civilized, we opened our pack and unloaded a hearty dinner in cans and plastic sacks. Thrilled with our first day's climb, we laughed and joked as we scraped out a level place for all four of us to sleep. Jack absorbed a round of good-natured ribbing for the fine beef stew he was preparing. Ever-cautious Erik drove a piton in above his sleeping spot to which to tie himself during the night. We thoroughly enjoyed our little home and stuffed ourselves like gluttons before rolling into our sleeping bags.

"Goodnight you guys. Don't roll off," was Erik's last somber remark.

This was adventure for me. This weird surrounding was a place of inspiration and pure enjoyment. Half of our climb was below us, a lot of

hard work was still above us and within each of us was the drive to go on.

Soon the sky was bright again, the primus stove was humming and breakfast was served.

To save time on our second day we decided to take only one pack and one quart of water. Soon we were back down the gully with Erik in the lead followed by Jack, Dick, carrying the light pack, and then myself. Our fixed rope hastened our movement as we turned the corner out to the open face marking the friction traverse.

With amazing speed, we were safely across the pitch that had given us so much trouble the day before, and were resting on Misery Ledge.

We moved with maximum speed, but with utmost safety, for the time was short and the hardest, most hazardous part of the climb was still ahead.

Dick led the way quickly over two short ledges and up a small overhang. Then, suddenly, our movement was stopped completely. The four of us stood on a wide platform staring up at what is probably the most difficult 40 feet on Shiprock. Over our heads was a vertical wall guarded by two sharp overhangs—one about half-way up, the other just below the top. The rock seemed nearly faultless and smooth.

"So this is the double overhang," I said, "but it doesn't look quite as bad as I expected."

A thin crack pierced its flank, running diagonally to the left, reaching the top of the lower overhang. Twenty feet to the right, a similar seam rose vertically to mount the upper overhang.

Out came our ropes and pitons, hammers and expansion bolts. From this point, our climbing technique was to be much different from that we would ordinarily use. We would have to depend upon our ropes and pitons for support, not just for the safety they offered. We were about to begin tension climbing.

Taking a rather hasty evaluation of the first overhang, I decided to give it a try. Dick and Erik prepared to belay me while Jack stood below the lower crack to give me a boost. Around my waist was an array of rope and metal. I tied into two ropes—one to Dick, the other to Erik. Reaching up, I pounded in the first piton, tested it and attached a rope and karabiner.

"Ready, Jack. Shove!"

Up I went. Dick pulled hard on the rope to hold me in position at the first piton while I strained to drive in another a little higher and loop Erik's rope through it. In this manner, I worked up to the brink of the over-

GLOSSARY OF TERMS

- BELAY:** *verb*, to safeguard a fellow climber from a fall on a rope.
noun, a solid position from which to effect a safeguard.
- BRAMANI:** *adjective*, a European type of hard rubber cleated sole for climbing boots, used exclusively on our climb.
- BRECCIA:** *noun*, a loose, coarse, granular type of igneous rock, composing the outer layer of the rock on Shiprock.
- CHIMNEY:** *noun*, a crack in the rock large enough to permit the climber to insert part or all of his body and effect an ascent using pressure on the walls of the crack.
- COULOIR:** *noun*, a definite gully or furrow, usually slanting upward on the side of a rock or a mountain.
- EXPANSION BOLT:** *noun*, a steel pin used much like a piton except that it is inserted into the rock itself by means of a hole driven into the rock by a special drill.
- FRICTION:** *adjective*, pertaining to a rock surface slanted at an angle and smooth so that the only support it offers is gained by the weight of the body on surface of the feet of person negotiating it.
- KARABINER:** *noun*, a large oblong snap-ring, operating much like a safety pin, and used as a link between pitons and ropes as well as many other uses.
- PITCH:** *noun*, a section, usually short, over which the route runs, usually with distinct difficulty.
- PITON:** *noun*, a spike, usually flattened, which is driven with a special hammer into a thick crack in rock and used as a support point for the rope attached to it with a karabiner snapped into the outer ringed head of the piton. Once driven, a piton may be tested either by pull or by the sound it gives when tapped with a hammer.
- PRUSSICK:** *verb*, to utilize a fixed rope as an elevator by means of special knots which permit slippage in an upward direction only.
- RAPPEL:** *verb*, to utilize a fixed rope as a means of descent, usually accomplished by sliding down the rope and applying body friction to slow the descent.
- REGISTER:** *noun*, a piece of paper left on the summits of mountains and other climbs for the purpose of recording names of climbers successfully reaching the top. Registers are usually encased by a metal container and donated by climbing clubs.
- TENSION:** *adjective*, pertaining to climbing in which the climber uses his rope as a definite aid or support rather than only for safety. This is usually done with the belay of another climber.
- TRAVERSE:** *verb*, to move in a horizontal direction across a face of rock or across a whole mountainside.
noun, an exposed portion of a climb requiring a horizontal movement by the climbers.



Erik Barnes and Jack Morehead leading up a steep couloir at the base of the black bowl near the start of the climb.



Erik Barnes descending by means of a rappel.



The author snapping a karabiner into a piton at the base of the Double Overhang. He has a supporting rope from below.

hang. My legs were tiring under the strain and I felt like I was being cut in two. I boosted myself up and reached one hand over. It touched a piton driven by a previous party. Squirming into a better position, I tested it with my hammer. I thought it might hold.

Quickly one rope was fixed and I pulled hard on it. A shower of small stones danced down into the honeycomb gully far below as the piton pulled loose and flew into the air. Dick's rope held me tightly as I looked for a spot for another piton. I strained, groped and caught my breath for a

minute — then groped some more. There was no place to be found. An expansion bolt was the only alternative. My star drill bit into the rock as I started a hole at the critical point, but my legs were rubbery and shaking badly. I decided to go down.

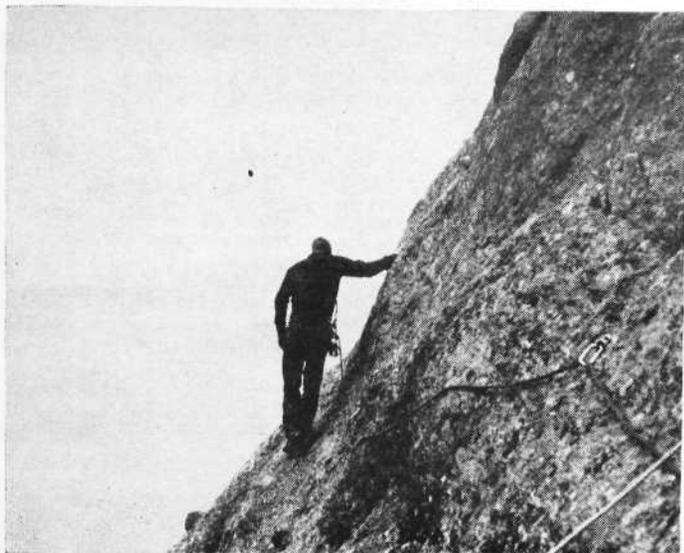
At the bottom I transferred my equipment to Erik and rested while Jack and Dick belayed him up. Erik finished boring the hole, and secured the expansion bolt. Then he descended to give Jack a try. This was success. Fighting for balance, Jack used the expansion bolt and pulled himself over the overhang to stand on its faint,

slanting upper surface. He quickly tied himself in and I worked my way up to him using the same technique, this time with Jack belaying me from his position. We met and untangled our ropes. Now for the upper overhang.

After a brief rest, I fixed my ropes and donned the mass of jangling pitons and karabiners. Well belayed from below, I moved slowly along the scanty foot-hold to the right and then stretched out every inch I could to reach the vertical crack where a piton had been driven. I tested it at arm's length with my hammer. Sounded

Belayed from behind through an expansion bolt and karabiner, Erik Barnes leads the tricky friction traverse. Note the balance of his body in a vertical position to afford maximum friction for his feet.

Looking straight up at the author working on double ropes to surmount the lower lip of the Double Overhang. Pitons have been driven in the cracks and the climber has two supporting ropes from belayers below.





Dick Stenmark corrects an out-dated sign along the highway near Shiprock.

okay. Just a couple more inches—I stretched hard. My rope and karabiner clanked into the piton and I was ready to assault the crack. Working from piton to piton, grunting and puffing, I scratched my way up to the brink of the overhang. There was an awful moment of unequilibrium, and then, struggling to maintain balance and pulling up slack in the ropes, I moved on over.

"Congratulations, Doug," Dick shouted a bit prematurely. I still had to go up a short friction pitch to reach a safe place to rest. At the top was a small, level cave. My legs felt like a couple of limp rags as I flopped down and started disentangling my ropes.

For a moment I caught the feeling of great joy in having overcome something held in store for me the past year. Then it was gone. There was work to do.

I firmly fixed a rope at the top and threw it down. On this rope the rest of the fellows ascended using a prus-sick while I belayed them from above on another rope around my waist. I had carefully tied myself into my position so I could not be pulled off.

Soon we were all standing together by the cave coiling our ropes and reading notes left in the cave by previous parties.

The next few hundred feet were merely a steep hike up the relatively shallow south honeycomb gully. We had now moved completely around the north tower and were standing a few scant, inaccessible feet from the point where we emerged from the basalt bowl the day before.

Two chimneys now confronted us. Erik had already started up one and was making rapid progress. The rest of us squirmed up behind. As I reached the top I could see the walls on either side of me drop to the desert 1500 feet below.

The shadows on the great floor produced a feeling of solitude. We were getting close now.

Directly over our heads was the next great obstacle, the last hard pitch before the summit. Jutting out horizontally from the rock wall above was a huge knob which other climbers had called the "Horn." It resembled a giant thorn on a rosebush, presenting an overhanging climb of about 40 feet to its upper surface.

Dick was light-hearted as he discussed a plan to get over it. "It's your baby," Erik told him.

After one sip of our precious water we took our positions. Erik and I were to belay, as Dick climbed as far up towards the horn as possible then threw two ropes over it, one he could climb and the other for belaying purposes.

Dick set himself at the notch, Erik and I were ready to belay him.

"On belay?"

"Climb!"

Up he went, his Bramani-soled boots clawing for footing. Erik pulled tight. Inch by inch, piton after piton, Dick worked up. Fine rocks sprayed down on us. Then about 20 feet over our heads, he stopped.

He posed himself and hurled the rope. It fell short. The second time his aim was better. Soon both ropes were tied and Dick was up and over.

We went through a familiar process as Dick dropped a rope down to us and we prusicked up to meet him. Half way up I glanced down between my legs and caught my breath as I saw the desert far below.

We quickly traversed a small friction pitch and mastered two small overhangs and there above were two small chimneys, all that was left between us and the summit.

We could feel the thrill as we neared victory over Shiprock. Everything was below us except the chimneys we were working through. Only one of them necessitated a rope and upon emerging from it, I heard a shout from above. Erik was up! Shiprock had been climbed for the eighth time.

A narrow path led out on a short exposed pitch. Above it Jack and Erik were balanced on a sharp point of rock—Shiprock's crow's nest.

Dick and I deposited a Colorado Mountain Club register, encased in an old tennis ball, on a ledge just below the summit.

We shook hands as we had many times before on summits. But this time it was very special. Soon it was our turn to straddle the summit and the wind blew wildly as we clamped ourselves firmly to our precarious position. After 36 hours of hammering away at the old rock we were finally on top. We could go no farther.

It was there I knew Shiprock had won my heart. It was no longer a cold, ruthless piece of stone to be conquered but a personality to be admired and respected.

The sun was dropping into the west and we were hungry and thirsty so we wasted little time in starting down.

Tricky pitches, which required hours to surmount, disappeared into memories as we slid over them. The Horn, the south honeycomb gully, the double overhang, the north tower and finally, in the darkness, the friction traverse, all vanished one by one from our view as we left our mountain.

We found our little platform and enjoyed plenty of water. Then we settled back to relax and enjoy a good dinner of beef stew, carrots, cheese and oranges.

As we sat around our primus stove laughing and joking we noticed we had visitors. Tiny brown and white deer mice were scampering here and there and, not the least bashful, came right up to our laps to take bits of food. They ran off and made fools of us as they raced straight up the rock walls. Now and then they stopped for an inquisitive look back.

Drowsiness soon overtook us and we rolled into our sleeping bags to drop quickly to sleep. The only disturbance all night long came when Jack chased a surprised deer mouse out of his boot.

Next morning my eyes opened to a glorious sight. Above me, and all around, the rock was bathed in mellow red-orange light of sunrise. Shiprock seemed molten. Perhaps our efforts of the previous day were being rewarded by this fiery glow. As it faded so did my drowsiness and, with the others, I began assembling our gear. I'll not forget that sight soon.

Breakfast was hasty, but complete. Then, one by one the little camping place lost its tenants and equipment as we began the last half of the descent.

Up we went, out of the gully, then down again in a last long drop to the desert over the difficult pitches of the bowl. Time after time we had to rap-pel and then haul our rucksacks down. Slowly the desert moved up to meet us. Finally, just after noon, we dropped off the last overhang, the last piece of rock and set foot once again on solid earth.

Desert Plants You Can Tell by Their Odors

Many desert plants are distinctive for their strong odors, often pleasant and sometimes offensive. They are usually sturdy, beautiful plants with an unusual device for self preservation. Some of them have been used medicinally by Indians. Naturalist Edmund Jaeger describes these plants and tells his experiences with them in an article that will prove a fascinating lesson in botany for every desert hiker.

By EDMUND JAEGER

Curator of Plants
Riverside Municipal Museum
Illustrations by the Author

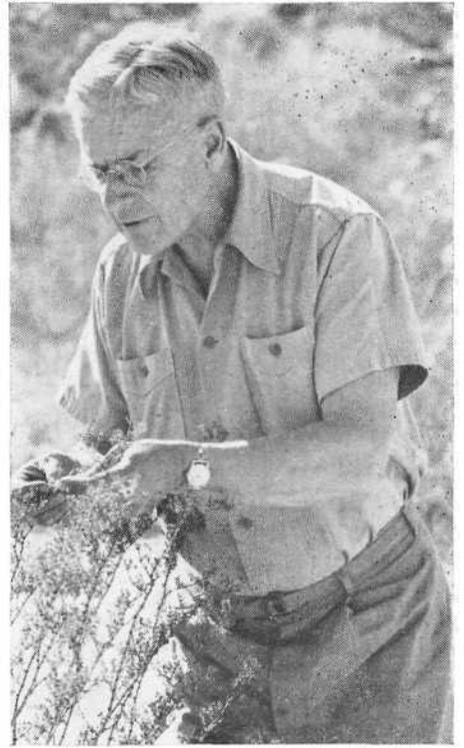
FOUND WIDELY spread among hillside rocks, sand-wash borders and on brush covered desert plains from Utah and Arizona to California and northern Baja California, is a small shrub with greenish-yellow, switch-like branches, known as Turpentine Bush or *Cordoncillo* (Spanish, "twisted cord").

To the botanists it is *Thamnosma montana*, *montana* meaning "of the mountains." It is a member of the Rhue Family and is closely related to the orange and lemon. Like them, its fruits are covered with myriads of small pustulate oil glands. These are present everywhere on the surface of the stem and leaves too. The oil they

contain even has an odor much like that of the orange. It is this pungent odor that gives the plant its generic name *Thamnosma*, literally, "the bush that smells" (Greek *thamnos*, a bush and *osme*, smell).

When the herbage is first crushed the odor that rises is often so pronounced it is highly unpleasant. I long ago found that in lesser amounts the smell is very agreeable, much like good old-fashioned cocoanut pie. Sometimes I purposely crush the green stems in my hands, and, about five minutes later, place my cupped palms to my nose to detect the pleasant odor of cocoanut. Some of the students whose attention I have called to this, now almost affectionately call this shrub the "Cocoanut-pie bush."

I later learned that *Thamnosma* had things other than the odor that were pronounced. In April, 1939 I was

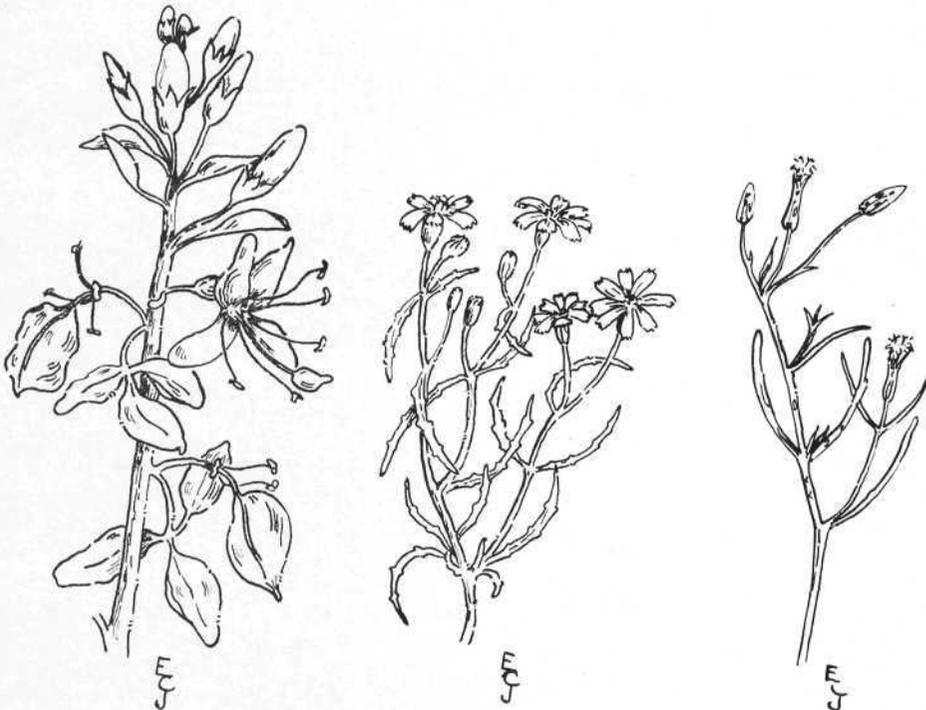


Edmund Jaeger, curator of plants,
Riverside Municipal Museum.

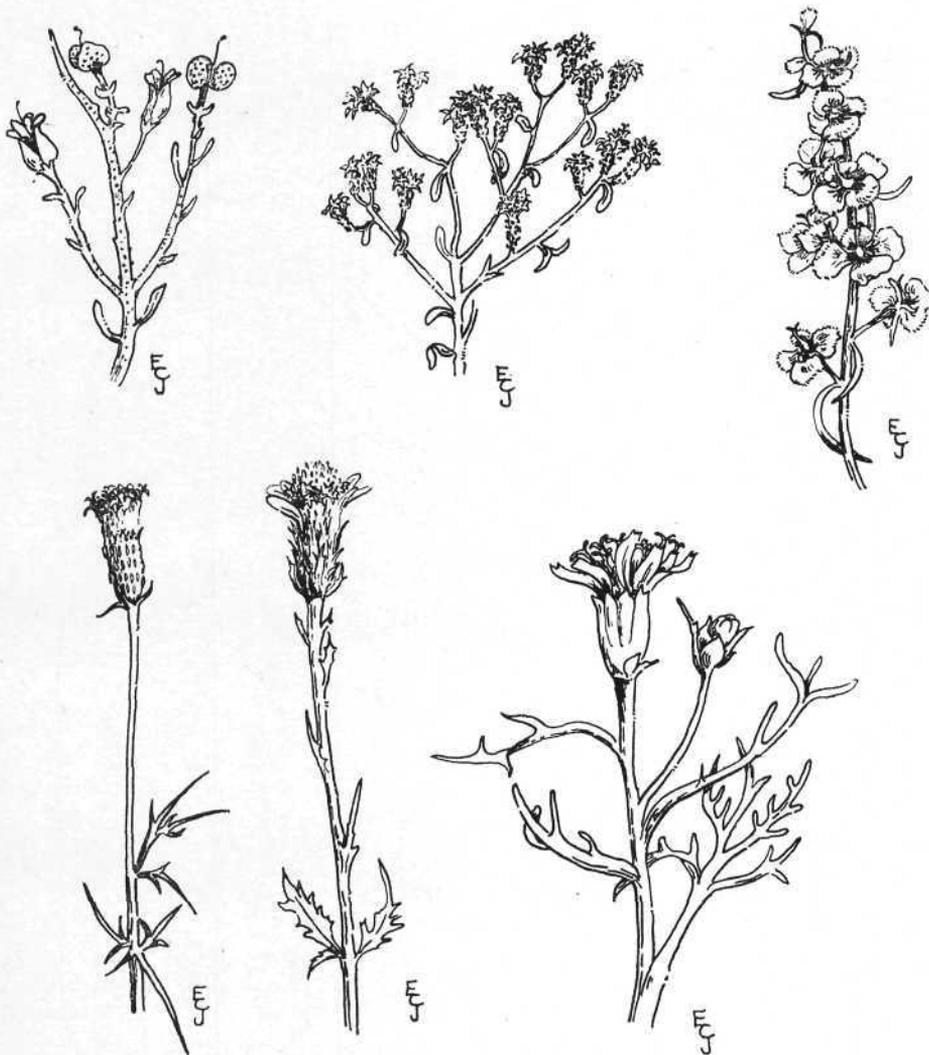
camping in the McCullough Mountains of southern Nevada making sketches for my book, *Desert Wild Flowers*. I had rubbed a few green *Thamnosma* stems in my hands to get the cocoanut odor; the day was warm and, feeling an itching under my knee, I scratched the skin. A few minutes later I began to feel heat there and not long afterwards I had all the sensations produced by a first degree burn. The severe burning continued through the night and next morning when I inspected the area between the ligaments under the knee I realized there was good reason for the pain. The skin had been eaten away and an angry looking patch of raw flesh was exposed. It became so painful I could scarcely walk. Later, when the tissue did not heal promptly, I consulted a doctor and a healing ointment was prescribed.

Some months afterward I was motor-ing south through Goldfield, Nevada, where I met a mining engineer. We had not been chatting long in his office until he produced a dusty bundle of dried plant stems. "Tell me what this is," he asked. "The Indians in Death Valley gave it to me and said they make a strong tea from it to blister the skin when they have painful rheumatism.

"Furthermore they said that if you drink the tea, not quite so strong, it will make your stomach so hot you will have queer dreams and visions that will tell you where long lost keepsakes can surely be found."



Desert plants with distinct odors, left to right—*Isomeris* (Bladder Pod),
Pectis papposa (Chinch-weed) and *Porophyllum gracile* (Porophyllum).



Odors of these plants can help identify them. Left to right, above—*Thamnosma montana*, *Lessingia germanorum* (Vinegar Weed), *Hymenoclea* (Cheese Weed). Below—*San Felipe Dyssodia*, *Cooper Dyssodia* and *Nicotletia occidentalis* (Hole-in-the-sand plant).

At that moment I recalled the red hot spot I'd had behind the knee. The cause of the mysterious burning was solved—*Thamnosma* was the culprit. I still crush *Thamnosma* stems and flowers in my hands but I'm careful afterwards not to rub my eyes or scratch the tender skin of the body.

For most of the year the *Thamnosma* brush is a shin-high cluster of greenish-brown stems. When rains come it brightens up and sprouts numerous new branches which soon are covered with deep-purple, four-petaled, urn-shaped flowers. Then come double leathery capsuled fruits set side by side like two little fists.

Another desert plant that advertises itself by its pronounced odor is the diminutive Chinch-weed, *Pectis papposa*, a small annual that often appears abundantly on desert flats after summer rains. I have seen it so plentiful and close-set that it made a bright yel-

low carpet over many acres and visible for long distances. If the rains have been generous each little plant may be a hemisphere of bright green five or six inches across, later to be adorned with handsome tufts of cheery yellow, almost daisy-like flowers.

Crushed under foot, one cannot but know Chinch-weed is there, the perfume rising from it is so strong. Some years ago while in Hopi-land I learned that the Indians used this spicy odored plant to give flavor to their meat stews. This summer I found the kangaroo rats on sand dunes near the Colorado River harvesting the small seeds in quantity. Around almost every plant could be seen their numerous footprints and the graceful, curved grooves made as they dragged their long tails. I dug into several of their underground passages and the sweet odor of Chinch-weed was present everywhere. Doubtless their soft furry coats and especially the linings of the cheek pouches in

which they carried the seeds smelled of it too.

The word, *chinch* applied to this plant comes from the Spanish, *chinche*, the odorous bedbug.

In late summer and early autumn a short-statured herb, Vinegar-weed, is widespread in gravelly soils of the Mojave Desert. Its numerous but small yellow flowers are not particularly attractive but the plant is certain to attract attention because of the strange aroma which rises when it is crushed underfoot. It is a potent odor like that from a mixture of turpentine and strong vinegar. The plant's scientific name, *Lessingia germanorum*, was given in honor of the German family of Lessing, among whom were distinguished authors, painters and botanists.

The several desert varieties of Vinegar-weed are among those remarkable late maturing desert annuals which, like some of the species of wild Buckwheats, Birds-beaks and *Madias*, are able to extract moisture from soils so dry most hardy plants cannot begin to survive in them. As far as I can learn, no animals eat the green stems or Vinegar-weed blossoms but wild mice and some birds probably make fare of the oil-rich seeds.

Another plant that protects itself from being eaten by its bitter taste and strange odor is the Cheese-weed (*Hymenoclea*). The smell of its resinous sap is like some of the highly flavored cheeses. It is a common, intricately-branched, semi-woody shrub found growing most abundantly and to largest size in sand washes of the low hot southern deserts. The bushes are often noticeably large and handsome hemispherical masses of bright green, especially in the late winter rainy season when they make their most active growth. Some of the plants are male, others female. In late spring the female bushes are most attractive because of the numerous scarious, silvery-winged fruits. Since hungry burros will sometimes forage on the leaves and tender stems, Cheese-weed is sometimes called Burrobush.

Charles Francis Saunders, able writer on California plants, refers to the yellow-flowered Bladder-pod (*Isomeris*) as the "skunk among desert plants." I'll admit it is a shrub of decidedly strong musty odor but I can hardly speak of it in those disparaging terms. Perhaps we can partially forget its ill scent if we observe how faithfully it blooms almost the year around. Often it is the first of all the desert shrubs to adorn itself with bright flowers after winter rains. Very conspicuous and attractive are the light green two-celled markedly inflated fruits which hide curious almost snail-

like brownish seeds. I have found the hardy Bladderpod worthy of a place in my desert garden. It does well in all dry warm climates from sea shore to inland desert.

When on your walks abroad in spring on the Mojave Desert you cannot step, even once, on a Hole-in-the-sand plant without immediately being aware of its presence, its wild scent is so strong. It is a member of the Sunflower Family and characteristically rich in odorous resins and flavorful oils. It is called Hole-in-the-sand plant because of its unusual habit of springing up, almost without fail, from the bottom of hoof-sized depressions in the deep sandy soils of washes. Nobody has ever offered a plausible explanation for this characteristic. This is one of those stout stemmed perennial herbs which sprout up from brittle deep-seated roots. It was one of the oddest of all of the plants collected by John C. Fremont on his 1844 Mojave journey.

Equally and quite similarly odored, is the purplish-green slender-stemmed shrub called *Porophyllum* (*Porophyllum gracile*). On its dainty, brown-green leaves, and especially on the elongate leaf-like scales of the involucre surrounding the dense head of florets, are found numerous elongate deep-red oil pustules. If one brushes against the plant while walking the strong aroma remains on one's clothes for a long time. *Porophyllum* is usually found among rocks. Watch for it on the eastern Mojave and Colorado Desert and southward into Baja California. The inhabitants of Lower California call it *hierba del venado* (herb of the deer) and make a bitter tea of it to use in cases of intestinal illness.

The plant was first collected near Magdalena Bay on the west coast of Baja California. Twenty-three other species of this shrub are recorded from Mexico, which evidently is its center of distribution. The genus name, *Porophyllum* (Greek for pore-leaf), was created by Michael Adanson, eminent French botanist.

Some desert plants have pleasing scents. Verbena in blossom is one of these, and some of the night-blooming cereus species perfume the night air during those few hours when they are in full bloom.

Most people like the odor of sage—and of the greasewood that scents the air after rainfall. One of the interesting pastimes of the trail is to crush and smell a leaf occasionally, of the shrubs that grow along the way. Nearly all of them have a distinctive odor of their own—that will be disclosed only when the oil or sap of the leaf is spread on the fingertips.



In Memory of the Wetherills . . .

In memory of their devotion to the Navajo Indians, and their contribution to the white man's understanding of Indian culture, a bronze plaque was scheduled to be dedicated to John and Louisa Wetherill at Kayenta, Arizona, July 31 at 11 a.m.

After a life-time of labor among the Navajos, and archeological and geographical exploration in Arizona, Utah, New Mexico and Colorado, John Wetherill died November 30, 1944. His wife, author of *Traders to the Navajo*, died the following September. They are buried side by side, on a hilltop high above the Kayenta trading post, overlooking the valley and mountain ranges of Navajo country. During most of the 38 years they lived on the reservation the Wetherills operated the Kayenta Trading post in partnership with Clyde A. Colville.

The Wetherills grew up in Navajoland. Louisa Wade was two years old when her family's wagons reached Mancos Valley in 1880, there with the Wetherills to take up farming land. Sixteen years later, she became young John Wetherill's bride.

Life in the frontier was hard. The couple's first year of farming was a failure, the entire wheat crop ruined by frost. The second year brought drouth, the third, rust. But John and Louisa were hardy people, and soon the farm began to prosper. John found time to guide scientific parties to the ancient Indian ruins he had discovered while riding the range. His wife made friends with her Navajo neighbors.

To the Navajos Wetherill was known as "Hosteen John." After many years

of mediating family arguments among the Indians, burying their dead, finding new markets for their products, dispensing medicine and supplying first aid when necessary and extending credit he was very highly regarded by them.

He led the first party of white Americans to see the Rainbow natural bridge in 1909. He was one of the first to discover and explore the Mesa Verde Indian ruins in Colorado and led an archeological expedition to the Cliff Palace in the region which has since been made a national park.

Louisa Wetherill was "Asthon Sosi," the Slim Woman of Ojo Alamo. She was loved and accepted by The People and it was to her as friend and counselor that the Navajos turned when they became frightened or confused by the white man's ways. Her book, *Traders to the Navajos* tells the story of those years on the reservation.

Dr. Harold S. Colton, director of the Museum of Northern Arizona in Flagstaff, served as chairman of a committee to provide a proper memorial for the Wetherills. A fund of \$790 was contributed by friends. This sum together with contributions of time and labor by Milton Wetherill, Buck Rogers and six Navajo friends of the Wetherills, made possible the installation of the memorial plaque, which was designed by Harry Dixon, sculptor.

Many of Louisa Wetherill's notes have been published by Southwestern museums and the University of New Mexico, and a record of John Wetherill's field expeditions is being prepared for publication by Jesse L. Nusbaum.



Photo by Willard Luce

FINAL CHOICE

By MABELLE B. MCGUIRE
Ventura, California

I stop by the ocean
For I love the sea,
But when the fog drips
I wish I could be
On the desert.

I go to the mountains
To enjoy the air,
But when a storm breaks,
I wish I were there
On the desert.

I move to the city,
Deciding to stay,
But there's noise and
confusion so,
I flee far away
To the desert.

So there I'll remain
To work and to rest.
I've made up my mind
That I can live best
On the desert.

My Own

By TANYA SOUTH

Each time I look upon a face,
I see myself. In every trace
And phase of life I can descry
My conscious or unconscious try
For Light and Love. Yes, I am one
With all the world. All are my kin.
All souls that dwell beneath the sun
Reflect me deep within.

Night Comes to the Desert

By NAOMI TREGO JAMES
Pittsfield, Massachusetts

Gold rimmed and purple shadowed
The canyons waiting, lie,
For the sun to cease his painting
On the canvas of the sky.

Above the red gold mesas' rim,
An eagle wheels and wings.
Sage hens are promenading.
Almost—the silence sings.

Night dons her mantle swiftly,
And scatters shadows deep.
Against the velvet of her breast,
She lulls day life to sleep.

NAKED HILLS

By MIRANDA SNOW WALTON
Evanston, Wyoming

Night, and naked hills are calling;
I must answer, I must go
To the place where they are bathing,
In the twilight's ashen glow
For their lure of desolation
Binds me with its mystic thrall;
When I hear their siren voices
I must follow where they call,
Far beyond their desert regions.
In stark loneliness they stand
Reaching for the shifting shadows
Of a bare, forbidding land.
Gold, nor love itself, can hold me,
I must go though hearts be rent,
For he who looks on naked grandeur
Never more can be content.

PATIENCE

By GRACE BARKER WILSON
Kirtland, New Mexico

Along the desert's rim the sands complain,
In lonely, whispering murmurs, that the sun
Still shines too hot, there are no clouds for
rain,
And west wind wanderings are never done.

And yet, the sage brush dons its purple
dress,
And cactus blooms in brilliant rainbow hue.
Be still, O sands, voice not your restlessness;
Wait for the peace the moonlight brings to
you.

• • •

FROM AN EASTERNER

By JEAN CONDER SOULE
Springfield, Pennsylvania

Oh, why did I give my heart in exchange
For a sun-browned lad from the western
range?

Why did the fates with a grin decree
That this hard-ridin' man is the man for me?
It must be some joke; a new kind of game—
Yet wild as he is, his heart is quite tame!
Though he's toughened and roughened by
bronco and steer,
His arms are as tender, his kisses as dear
As a city lad's with his eastern ways.
Yet for no urban man has my heart sung
praise.

This western male with lasso and gun
With dogie and mustang—he is the one!
I'm just a dude, but I love him more
Than a prairie gal who's *not* saddlesore,
Than a mountain lass or a brown, plain
Jane.

So I'll ride that horse and I'll not complain
Of the dust and sun and the desert vale,
If my cowboy's there at the end of the trail!

Cabin on Lizard Acres

Betty Lee and her husband wanted a weekend home on the desert—but their budget was limited. So they leased five acres of desert land from Uncle Sam and went to work. Here is the story of what this energetic young couple—amateurs at home construction—accomplished with \$612 cash, the help and advice of friends, heaps of ingenuity and eight months of hard weekend work.

By BETTY LEE

Floor Plan Sketch by M. Gerke

A PLEASANT BREEZE, clear skies and a warm Apple Valley sun increased our optimism as we sat watching the Ford Skip-loader plod up the long stretch of section road to our Mojave Jackrabbit homestead. We had read and heard of what others had done with five acres of desert, a limited budget and quantities of energy. Could we do it too, my husband and I wondered, with such a limited amount of cash, and that only available in small doses?

Betty Lee estimates she and her husband spent a total of 230 hours of work on Lizard Acres and had 150 hours more volunteered by friends.



\$612.51 and eight months of weekend labor went into Lizard Acres, the author's jackrabbit homestead in Apple Valley, California.

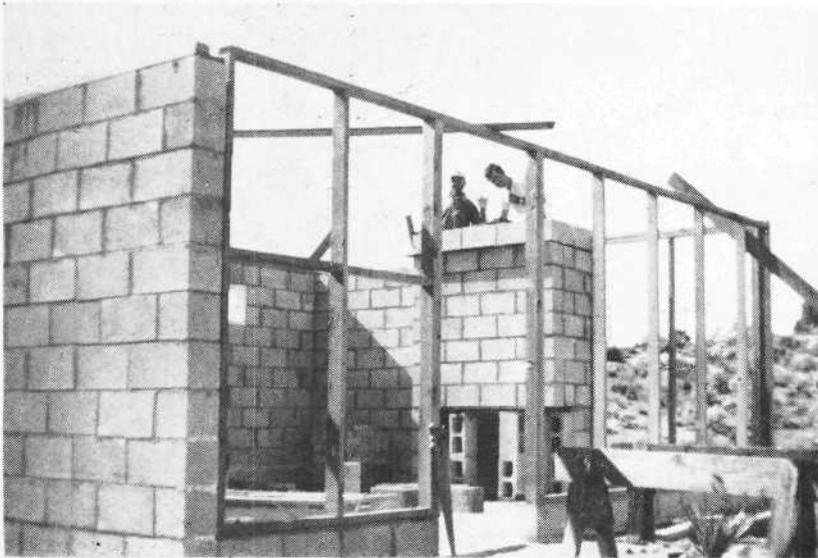
Our property — five acres of raw desert land—lay on the gentle slopes of California's San Bernardino Mountains, 1100 feet off the section road just beyond the enterprising little desert community of Apple Valley. We had leased it from Uncle Sam in October, under the government's small tracts section of the Homesteading Act. We had paid a \$10 filing fee and \$5 per year lease fee for three years—a total initial outlay of \$25. At the end of the three years, we would have first option to re-lease or purchase the land at \$10 an acre, if satisfactory improvements—a dwelling was prescribed—had been made. We were determined to make those improvements.

We spent the first day of our homesteading adventure following the skip-loader back and forth and tossing away loosened brush. Between cacti and juniper slowly emerged a road.

We chose a building site which overlooked the valley. It was a solid plot with few rocks or other barriers. High above the valley floor, we could see 30 or 40 miles in the smog-free air. The building, we decided, must face northeast as protection from the heat of the summer sun, for July through September is hot in Apple Valley. The ground was leveled and corner stakes measured before the first day ended in purple shadows and bright setting sun. We sat down and viewed our day's work and watched the lights of the valley below sparkle on one by one.

Our building plan allowed for one large room 18 feet by 22 feet, a carport 11 feet by 18 feet and a bath 7 feet by 8 feet. Realizing our biggest problem would be water, we inquired about possibilities and learned a community well was available to valley

The result is a comfortable weekend retreat easily accessible to their Los Angeles home.



WHERE THE MONEY WENT

Road Grading	\$ 26.00
Leveling Ground	23.00
Concrete	89.51
Pumice Block	124.48
Steel	19.50
Fire Clay	1.85
Plastic Cement	13.20
5 yds. Sand	15.00
Fire Brick	16.00
Flue Liners	10.50
Roof Lumber	134.57
Tar Paper	
Gray	32.50
Felt	9.40
Hemlock	42.00
Window Glass	30.00
Nails, miscellaneous	25.00
TOTAL COST	\$612.51

LABOR—The Lees work for eight months on Saturdays, for an estimated total of 230 hours. Twelve friends volunteered services of approximately 150 hours.

residents. We lashed a 40-gallon tank to a rack in the car and, with hose attachment, we had running water when needed by parking the car on an incline.

After considering several types of building material, we decided on pum-

ice block for the larger portion of the house. The blocks, concrete and aggregates were readily available for easy delivery. And, we reasoned, this type of construction could withstand both weather extremes—from summer heat to occasional snows in winter.

We selected the large pumice blocks, 8x8x16 inches which can be nailed and, if necessary, sawed. The hollow spaces in block not reinforced with steel and concrete promised good insulation.

In November, when our forms were set and footings dug, we had a ready-mix truck deliver the concrete for the foundation and slab. With a group of friends, we packed lunches and cement tools and spent one Saturday leveling the floor as the concrete slushed down. Steel uprights were placed according to San Bernardino building code, and extra steel for the fireplace foundation was put in. Then the blizzard came, and the snow began to fall. That was an anxious week, not knowing whether the concrete had frozen and would be worthless, or if the anti-freeze would set the concrete fast enough. But it survived.

Admitted amateurs in the construc-

tion field, we sought the help of local merchants in the valley who were kind enough to figure from our sketches and plans and advise us on materials needed. The next weekend the chalk line was laid, blocks and sand delivered, and with level handy the work began. The blocks ascended gradually, door and window spaces being allowed as we went along. A three inch pipe post was secured in concrete to support the corner of the carport roof.

The work on the fireplace then began. The fireplace was something separate, something no layman should attempt, we had been told again and again. Better hire it done, or get a ready made fireplace form, friends advised. All this would have cost too much; our meager budget just would not allow it. So we invested in a 25 cent book on how to build fireplaces. We followed directions to the letter, allowing for proper flue area and smoke chamber. Here's where the brick layer's knowledge would have come in handy. Not knowing that only a fraction of fire clay was needed with sand and plastic cement, we ordered a 100 lb. sack. Ten pounds would have been ample.

We chose a modern design with two sides open. We had an old two-inch pipe and angle iron which was welded to support the open corner. The fireplace has an excellent draw and throws heat throughout the room. The hearth was built out of varicolored flat rocks found in the vicinity.

For weeks the project cost only a sack or two of plastic cement, depending on how many helpers we had. Across the front of the house we planned a 12-foot glass window and a small section of wood paneling. This entire front wall was built eight inches higher than the back block wall, giving the roof a gentle eight inch slope. We placed the two by four uprights 30 inches apart and then glued and nailed the cross two by four boards 24 inches apart, thus allowing for standard size glass. This cut down the cost of cutting glass, and obviated allowance for breakage. Six feet of window similarly constructed completed the fireplace side. Two long and narrow windows one foot by four feet were installed high on the back wall, admitting some light but preventing the afternoon sun from heating the room. A large timber was placed across the main room and two by fours were bolted and nailed perpendicularly from it every two feet. One inch by six inch sheathing was used for the roof with a layer of felt paper and then a layer of 90-pound paper in silver gray which reflects the sun. Flashing was used around the chimney to prevent leak-

Nature's Desert Patterns...

Nature is an artist with an infinite variety of designs: the black and white shadows on a desert canyon wall, the symmetry of the spiny cactus pads, the geometry of the Navajo weaver's blanket, the patterns of sun and shadow on the dunes—these and a thousand other subjects are a constant invitation to the photographer. And it is for the purpose of offering an extra inducement for the camera fraternity to come to the desert for their subjects that Desert Magazine each month offers cash prizes for the best pictures of the month.

Entries for the September contest must be in the Desert Magazine office, Palm Desert, California, by September 20, and the winning prints will appear in the November issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5.00. For non-winning pictures accepted for publication \$3.00 each will be paid.

HERE ARE THE RULES

- 1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—All entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

The Desert Magazine

PALM DESERT, CALIFORNIA

age. The roof was built with a three-foot overhang to keep the direct sun and weather away from the house.

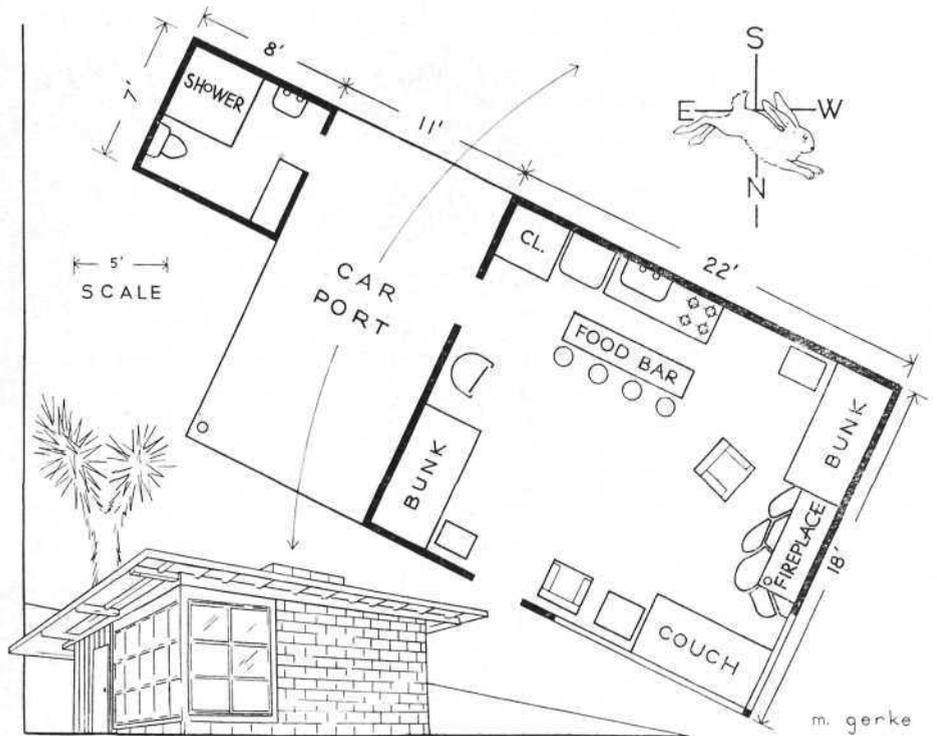
Hemlock siding was used to complete the front wall and the bathroom. The hemlock was stained redwood color, and the pumice blocks were treated with a sealer coat to prevent moisture from seeping through. Window glass was purchased by the crate. Used doors and lumber were bought whenever possible. The bathroom fixtures were used, and the kitchen sink was donated by a friend. A chemical toilet was purchased through a mail order catalogue and has proved very satisfactory.

We bought odds and ends in asphalt tile at a reduction and arranged them in a crazy quilt pattern on the concrete floor.

Several beds and chairs were given us by friends, and we bought bunks at a war surplus store. A small used ice box was found in a second hand store and purchased for \$10. Bamboo shades were hung at the front windows with draw curtains over them.

To eliminate the need of a large table for eating, a dining bar with four stools was built with several shelves for storage underneath.

We use a small white gas camping stove for cooking, a gas lantern for



The Lizard Acres building plan called for one large kitchen-living-sleeping room, a car port and a bath. The car port is open at both ends, a circular drive passing through.

lighting. A pot-bellied kerosene stove was donated for use during extra cold weather and for heating the bathroom.

A storage shed on the hill behind the house, built to store tools and equipment during construction, holds a water tank with a pipe running down hill to the bathroom, allowing for a cold water shower and basin facilities.

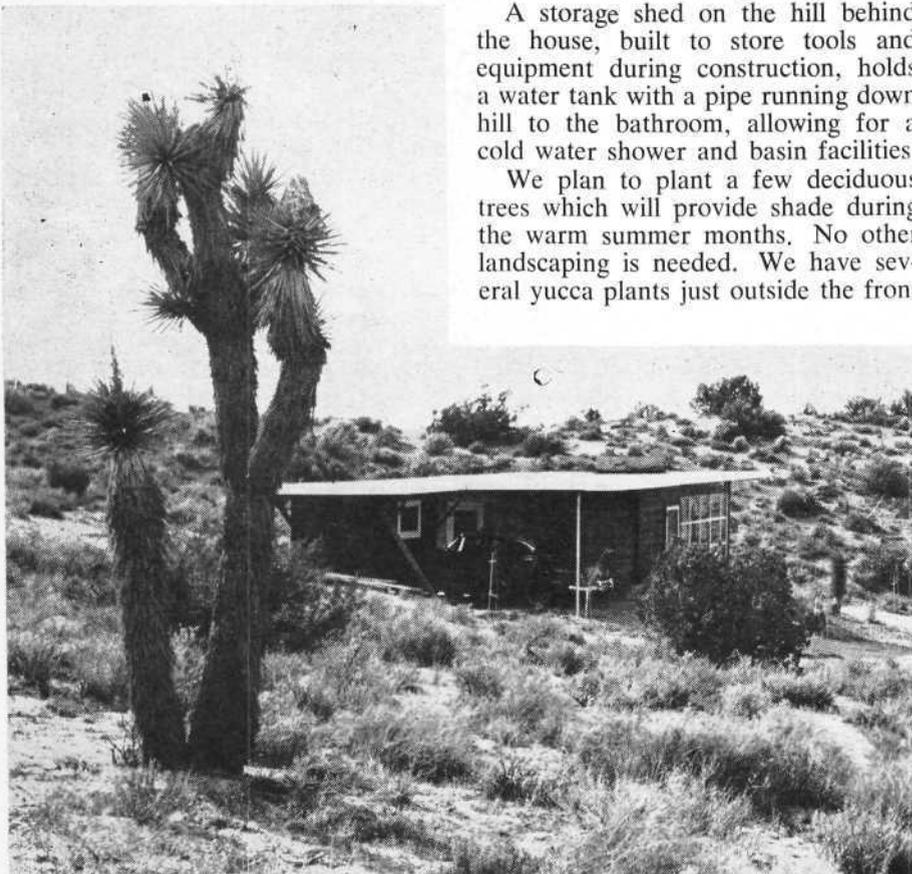
We plan to plant a few deciduous trees which will provide shade during the warm summer months. No other landscaping is needed. We have several yucca plants just outside the front

window which bloom beautifully in the spring. There is an assortment of cacti, and during the wildflower season hundreds of tiny plants break through the soft earth and bloom for six to eight weeks. The large junipers are bushy and green and the giant Joshuas sprawl grotesquely against the clear sky.

We've named our desert retreat Lizard Acres, in honor of the many scurrying creatures who kept us company during the months of weekend building. They have become our friends, as have the jackrabbits and the cottontails and other wildlife which share our homestead tract. When winter comes, a few deer wander down from the mountains to nibble on fresh greens.

There's planting to do and decorating ideas we've planned. But Lizard Acres is essentially finished and already has provided, at astonishingly small cost and hard work that was fun, a pleasant weekend for ourselves and our friends.

After our building was completed, we filled out papers, took pictures and submitted them to the Department of Interior. A representative of the Land Office visited our cabin and others built on similar leases in the neighborhood. In exchange for the purchase money due — \$50 — we received our deed from the government, and Lizard Acres was ours.



Lizard Acres, on the gently sloping foothills of California's San Bernardino Mountains, overlooks the broad expanse of Apple Valley.

Lost Mule Shoe Gold

The desert surrounding California's Picacho Peak is confusing, dangerous, waterless country—no place for the inexperienced desert traveler. It was across this maze of washes and mesas, canyons and mountain ridges that the lone prospector, violently ill with dysentery, struggled on his way to Dos Palmas Oasis. Somewhere along his ill-marked route he stumbled upon a rich gold ledge. Unable to return to his bonanza, he gave instructions to William Smith, who for more than 20 years carried on an intensive search for the gold. Just recently did Smith's friends, doubtful whether the old man still lived, offer Harold Weight the complete story of the Lost Mule Shoe Mine, for publication in this issue of Desert Magazine.

By HAROLD O. WEIGHT

Photos by the Author

Map by Norton Allen

IT IS 40 years or more since the man who found the Lost Mule Shoe Gold rode from Picacho, on the Colorado River 25 miles north of Yuma, into that maze of cragged mountains, volcanic flows, rock-paved mesas and great washes to the northwest. He was seeking the most direct possible way to the oasis of Dos Palmas, almost 90 airline miles distant.

It would have been foolhardy for a healthy man to strike out thus, alone, across an empty and jumbled and almost waterless land. This traveler was almost too ill to ride. But in time he reached his destination—and on the way he stumbled upon a ledge so richly laced with yellow metal that the rock would scarcely fall apart, even when broken.

Unfortunately, the man who found the Lost Mule Shoe Gold never returned to his golden bonanza to reap its reward. Nor was he able to describe his route so others could trace it out—though at least one man spent the greater part of a lifetime in the attempt. Possibly he failed because it was no real trail he had followed, but part road and part ancient Indian pathway and part, perhaps, the ways of wild game to watering places, and part a trailless trek up sandy washes and over a multitude of look-alike ridges.

The man had been ill with dysentery when he was ferried across from Arizona to Picacho. Nonetheless, he was desperately determined to press on to Dos Palmas. He did press on, but four and a half hours after he had left Picacho, he was so sick and so weak that he could continue no farther. At that time he was crossing a saddle between two low hills. He dismounted and sprawled on the ground.

After a few moments he felt better,

and as he lay there, his eyes wandered over a ledge which cropped out near by. Even in his semi-conscious condition he saw the golden streakings in the rock and was excited by them. He made his way to the ledge. The ore was rich beyond anything he had ever seen. Should it continue to any depth, here was a fortune! And spilling down from the ledge was the dull gleam of placer gold that had been eroded from it.

Here was the realization of every prospector's dream—if he could stake out claims and file upon them. But he was too weak even to build a stone discovery monument. Finally he removed his vest, folded it and laid it on the ledge. Then he took a spare mule shoe from the load on his pack mule and placed it on the vest to hold it in place. With samples from the ledge, and one last look at the terrain to fix it in his mind, he rode on. The vest and mule shoe, he hoped, would be there to identify the spot when he returned.

But when he reached the coast, his illness continued and in time became infinitely worse. He was in the veterans' hospital at Sawtelle when William M. Smith learned from him the story of the golden ledge he had seen so briefly. Smith's relationship to the man is uncertain. One says a brother-in-law, another a son-in-law, a third no relation. But Smith visited the man in the hospital over a period of two years. And at last the old prospector gave Smith a map of the route he had followed, as he remembered it.

"I'll never get back now," he said. "If you find it, send me just enough to make me comfortable."

So the man who found the Lost Mule Shoe Gold passes from the story.

Today not even his name is remembered by those who have heard of his strike. Even the date of his discovery is indefinite. According to Carl Walker, of Gold Rock Ranch near Ogilby, California, who heard the story often from Smith, the ledge was found while the American Girl and Hedges mines in the nearby Cargo Muchacho Mountains were still operating. Hedges, later Tumco, was worked quite steadily from 1892 to 1909 and intermittently, 1910-16. The American Girl was active from 1892 to 1900, and 1913-16.

There was no doubt in William M. Smith's mind that the strike was a real one. Probably he saw some of the ore. At any rate, in 1927 he bought the property at the old Hoge ferry landing, at the mouth of Gavilan Wash, about seven miles above Picacho. Later he frankly stated that he had bought the ranch to be in a position to hunt for the lost ledge, which he was certain would be found within a few miles of that point. He put up new buildings beside the river, named it the 4S ranch, moved his family in, and began the quest which was to continue the rest of his active life. And even after he had given up the ranch, more than 10 years later, and moved back "inside," Smith returned again and again to hunt for the Lost Mule Shoe Gold.

If it does exist how could Smith, aided by the map and the directions given him by the original finder, have searched for more than 20 years in vain? Anyone who knows the Picacho country can answer that. Above the old gold camp is mile upon mile of desert-mountain wilderness which has never been tamed by man. Prospectors have been through most of it, at

Where is it? ▶

one time or another, but back from the river there are no habitations. West from the river no road has touched the most of it, and probably no road ever will. It was lonelier when Smith hunted the ledge from the 4S than it was when the sick man first found it. It was lonelier when that man crossed it than it had been a decade or two before, when prospectors were numerous. And it is even more lonely today than it was when Smith started his search, and just as dangerous as it has always been for the careless or inexperienced.

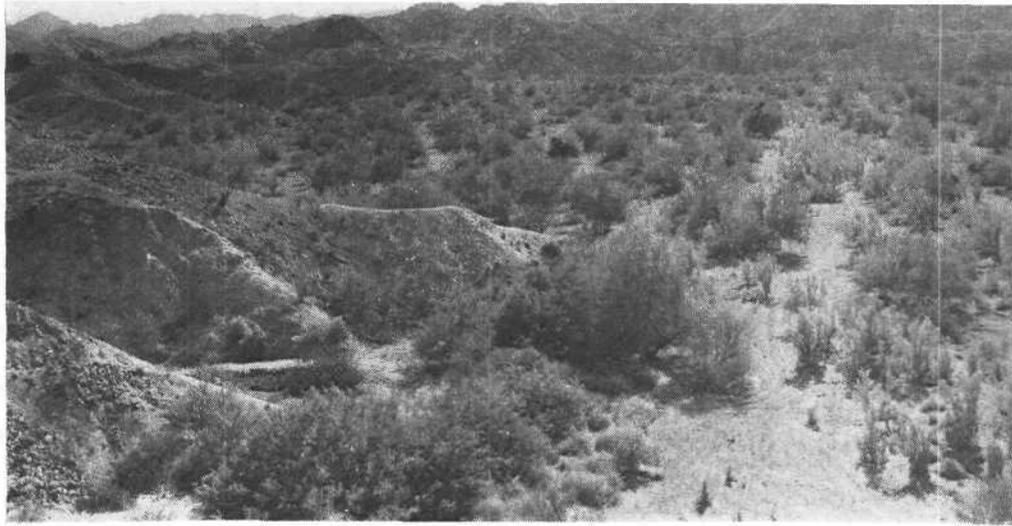
All of the land where the Lost Mule Shoe Gold may be hidden is considered a part of the Chocolate Mountains. On the river side, above Picacho, at least a score of giant washes drain these mountains, and have cut their foothills and mesas into thousands of ridges and buttes—and probably into thousands of low hills connected by saddles. Among them are White Wash and Bear Gulch and Carrizo, Gavilan and Julian Parra washes, in that order, and far to the north, Vinagre. In most of these washes, placer gold has been found.

When the discoverer of the lost golden ledge rode through this country, the river road from Picacho crossed the mouths of all these washes. There also was the road Hoge built up Gavilan Wash to Indian Mesa, along which he once trail-herded hogs from his Arizona ranch. There was the road Julian Parra roughed out from an upper tributary of the wash that bears his name to Mesquite Diggings, which he discovered. And many were the deep-rutted Indian trails, leading to watering places and through the easy passes, still used by Indians and Mexican and American miners.

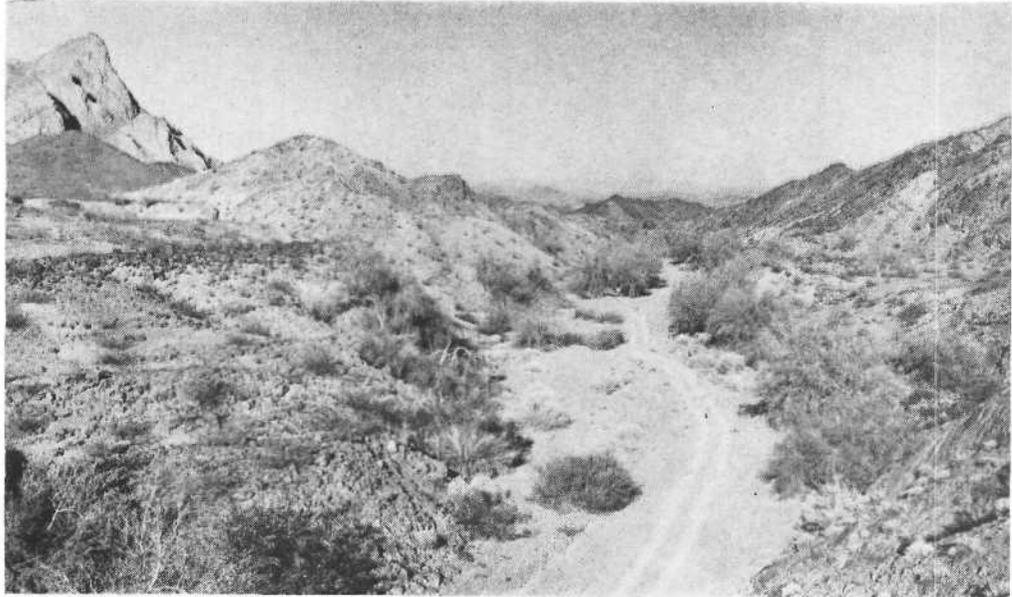
Today the river road lies submerged by backed-up waters of Imperial Dam, and Parra's mining road has almost vanished. The Indian trails are broken and weathered and unused. Between Picacho and Vinagre Wash — more than 20 miles by the river—the only road which enters this lonely land is the jeep trail successor to the one Hoge made up Gavilan Wash.

But which of the great washes did the man who found the Lost Mule Shoe Gold enter? Which of the old roads or trails did he follow even in part?

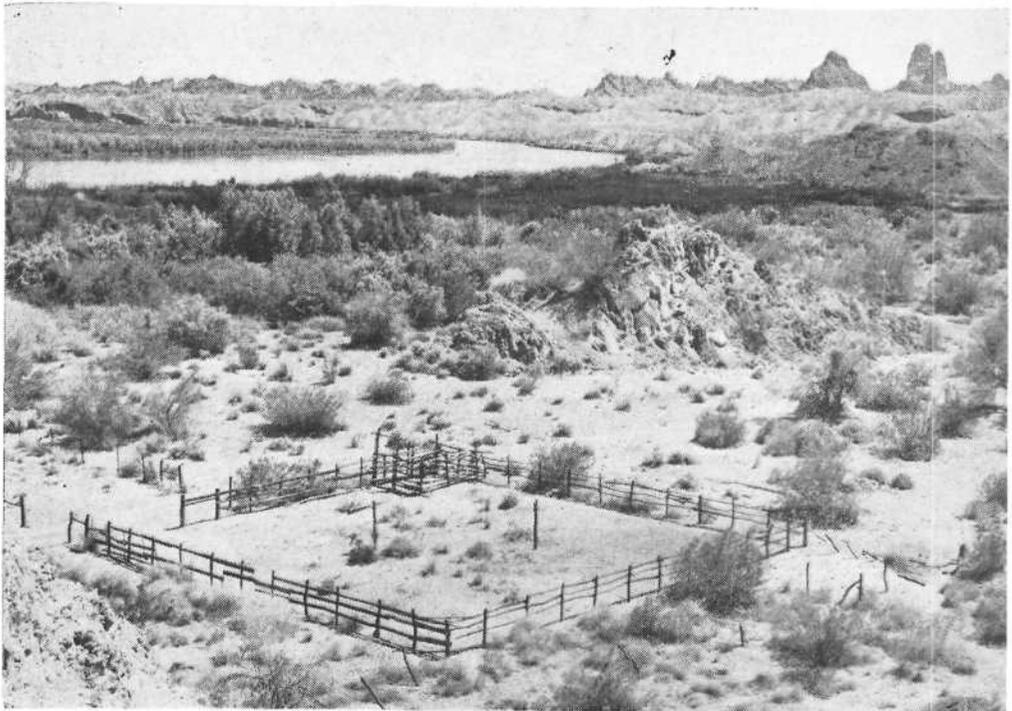
"I feel," says Carl Walker, "that the maximum a sick man could make in four and one-half hours, riding a horse and leading a pack mule, would not be over 16 miles. If I were trying



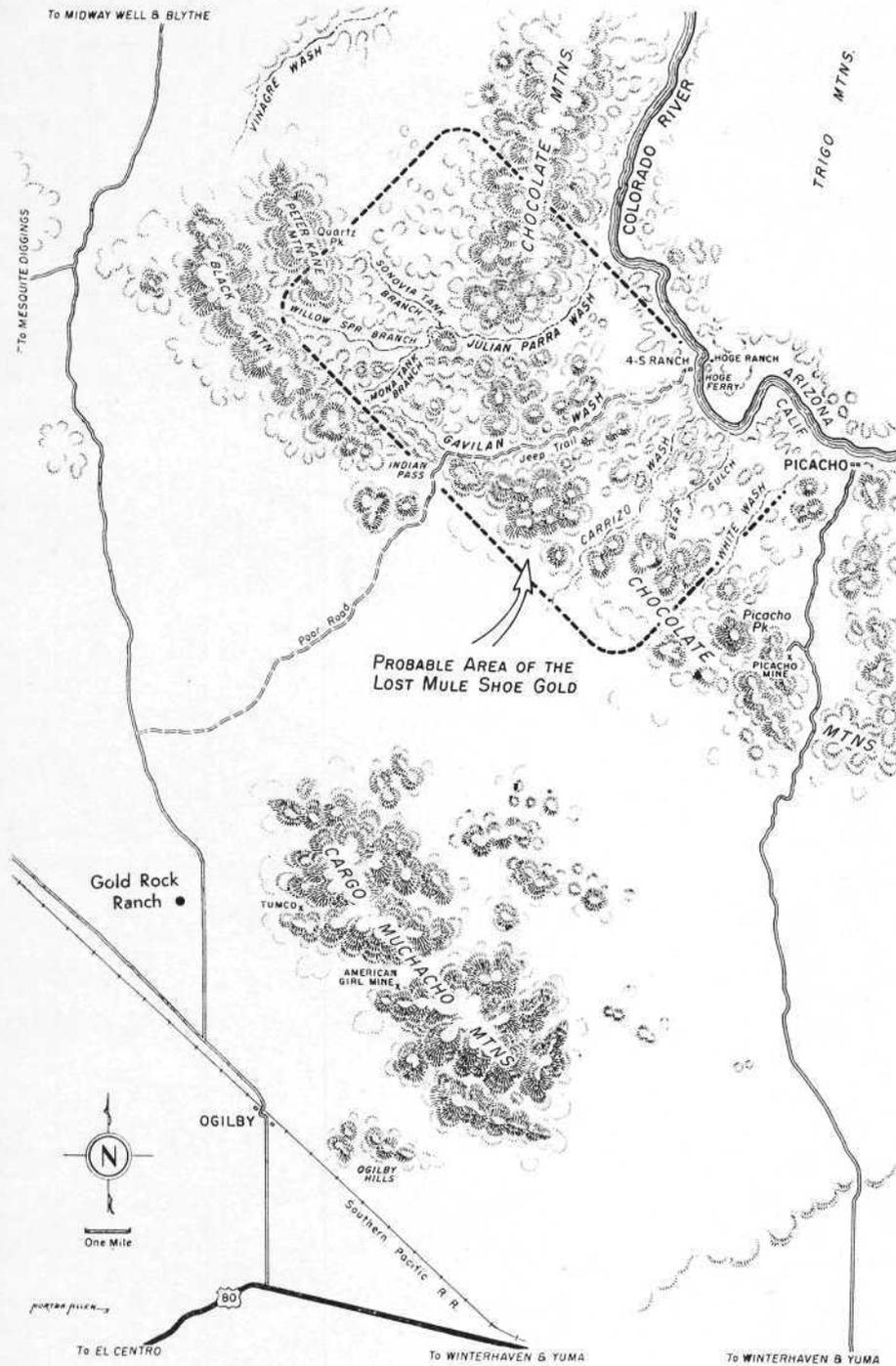
In the maze of buttes and ridges of Parra Wash? . . .



Off the lonely jeep trail which threads down Gavilan Wash? . . .



Or, ironically, near old 4S Ranch at Gavilan's mouth, headquarters of William M. Smith, the mine's most persistent searcher? Wetback trail, extreme right, Picacho Peak right background.



to retrace that man's steps, I would do just as he did. I would start from Picacho, riding a horse and leading a mule and remembering that he was sick, and take the shortest route to Dos Palmas. That would establish his speed and the approximate area in which he could have made his discovery."

But what was the shortest route to Dos Palmas, as the man who found the Lost Mule Shoe Gold knew it? That would depend upon his knowledge of the land—or lack of it. The course he followed could shift, by several miles, the place where the search for the lost ledge should begin. A mile, or even a square mile, does not look large on the map. But when one attempts

to explore it on foot or horseback, the area becomes immense. Particularly is this true in broken country like Picacho, where a square mile spread out flat would probably equal ten square miles.

Walker thinks the sensible route would have been along the river road to Gavilan Wash, up it to Indian Mesa, across to Mesquite Diggings, then down to the Southern Pacific Railroad where water would be available. Smith's map must have led him to the same conclusion, for this is the line along which he began his search. But through the years, his quest widened. When Ed Rochester, who has prospected all of the Picacho country, first heard of the Lost Mule Shoe Gold from Smith,

about 1932, the latter was concentrating his hunt for the ledge between the 4S Ranch and Midway Well, especially in the area where Parra Wash heads, east of Imperial Gables. Ed thinks that Carizzo, Gavilan and Parra washes are all possible locations for the lost ledge, with Parra most likely.

When Clyde Stewart of Picacho, who also has prospected this country thoroughly, talked to Smith in 1937 about the ledge, Smith was searching for it in the main northern tributary of Parra Wash, where the great Sonovia natural water tank is located. Julian Parra Wash — Julian wash on some maps, and invariably called "Hoolihan" by the oldtimers—has three chief tributaries, the left with Mona Tank, the center with Willow Spring, and the right with Sonovia Tanks. Julian Parra, who had a ranch at the mouth of the wash, was placing gold near Sonovia Tanks 65 years ago. Stewart believes that the lost ledge is in or near this branch.

"Every wash that comes in to Parra from the north side will pan gold," he declares, "but Sonovia has the most. And this is the way the old main Indian trail went, right past Sonovia Tanks. They never go dry."

Myself, I wonder—since Dos Palmas and not Glamis, Amos, Niland or any other railroad station was given by Smith as the sick man's destination—if it is not possible that he kept south of the Chocolate Mountains all the way. He may have traveled on a northwest line, past Midway Well and on until he struck the old Bradshaw or Chuckawalla Trail, then followed it past Canyon Springs to Dos Palmas. This could have placed him north even of Parra Wash in four and one half hours.

When Smith last visited Ed Rochester at Picacho—Ed believes it was in 1948 or 1949—he had been up Parra Wash in the vicinity of Mona Tank on another hunt for the lost gold, and he kept Ed up all night talking about it. His search had failed again, but he blamed the wetback Mexicans for it. They had been in the area in such numbers that he was afraid to go farther or stay longer.

Unfortunately that is true today. You cannot go anywhere along the river—or often many miles back from it—without seeing some of these border-jumping laborers—the *braceros*—or evidence of their recent presence. When we jeeped down Gavilan Wash and over the ridges to Parra Wash this spring, we passed several of them. Their trail along the river, pounded to deep, white dust by thousands of poorly shod feet, can be seen miles

away and is so well marked it can be followed by starlight. Frequent graves—often low mounds of gravel in desert washes, with half-gallon water bottles as the only markers—are poignant evidence of their desperate determination to achieve their golden dream—common laborers' jobs in the United States. Most of them are honest and friendly, but it would be foolhardy for lone or unprotected persons to chance the bad hombres among them, or the vicious ones who sometimes travel with them.

After his visit with Rochester, William Smith made one more attempt to locate the Lost Mule Shoe Gold—probably his final one—late in the winter of 1949. He was alone this time and he stopped, as he often had in the past, with the Walkers at Gold Rock Ranch. And that night the old man was certain of success.

"I know exactly where it is," he insisted. "I'm going right up there and find it tomorrow." Then he urged Carl Walker to come with him. "I'll fill that box with gold for you," he said, pointing to the old trunk the Walkers used as a wood box.

But that same night he made the only change in his lost mine story that they remember. Walker mentioned the low hills with the saddle between. "Oh, no!" Smith corrected him. "It was a saddle between two high hills!" Later—they talked most of the night—he broke off in his enthusiasm to smile sheepishly at Margaret Walker. "I guess I've got the gold bug," he admitted.

In the early morning they saw him off up the road toward Indian Pass. "Be careful!" Mrs. Walker warned. "Don't get your car off the trail. You're too old to be able to work it out of the sand."

That evening he had not returned by the time he promised, and the Walkers set out to look for him. Not many miles from the ranch they found him. Shortly after he had left them in the morning, he had attempted to drive up a big sandy wash. The sand trapped him, and there he had been sitting all day. He returned to the coast the next day, but as he left he assured them, grimly, "I'll be back."

The next year, the Walkers told me as much of the story of the Lost Mule Shoe Gold as they knew. "But you mustn't print it yet!" they said. "It's really William Smith's lost mine—and he said he was coming back."

But in the four years since, Smith has not come back and they have heard no word from him. Late this spring, sitting on the big porch of Gold Rock Ranch and staring moodily at the somber lava flow through which In-



Old Indian trail into Indian Pass. The man who found the Lost Mule Shoe Gold may have taken this very trail out of the country beyond the pass where he found his rich ledge.

dian Pass enters the country of the Lost Mule Shoe Gold, Carl Walker said: "I guess it's anybody's story now—and anybody's gold."

That is only partly true. It is still the desert's gold—and the desert knows how to guard it. The country above Picacho is as merciless toward the careless or the inexperienced as it was half a century ago. The heat in

summer is just as deadly. It has killed before, and it will kill again—given the opportunity.

Some day, perhaps, that fabulous ledge in the saddle between two hills—low or high—may be found again. But my guess is that its discoverer will be a man who knows what he is looking for and how to protect himself while he is looking.

The main streets of old Picacho, just beyond the tules, are now under the water backed up by Imperial Dam. The man who found the Lost Mule Shoe Gold was ferried across the Colorado from Arizona at this point and 4½ hours by horseback to the northwest of the old camp he made his strike.





A surprised deer is caught smacking his lips after a nighttime drink at a man-made waterhole. The photo was taken by Lewis W. Walker from the wildlife blind maintained by the Arizona Sonora Desert Museum in Tucson.

When Wildings Come to a Desert Water Hole . . .

Soon after Tucson's Arizona Sonora Desert Museum was opened in September, 1952, Lewis Walker constructed a small, unobtrusive wildlife blind several yards from a waterhole in back of the museum grounds. He spent many long nights behind it, stalking with camera and flash the deer and other wild animals which came to drink. When the public learned of the blind last July, they wanted to use it too—and here is the story of the recently-completed four-windowed structure which was built to answer their demands.

ONE NIGHT last July, radio sets in Tucson, Arizona, picked up a strange broadcast of sounds. There was the crunch of steps on loose gravel, the snap of a twig, the curious sips and slurps of some creature drinking. These were the sounds of wild animals coming to drink at a desert waterhole.

Two human voices occasionally broke the spell to whisper explanations as announcer Jay Miller and I described to our listeners the scene we watched through a tiny window. When an impatient spike buck belabored a drinking doe with slashing kicks of his

forefeet, the hidden microphone picked up the thud of each impact as clearly as timpani rolls.

From our position within a booth, only 12 feet from the wild actors whose performance we were recording, Jay and I silently wished for television to aid in describing the wondrous sights before our eyes.

We wondered what the reception of our radio audience would be. Were the sounds garbled and confusing to the listener? Were our word descriptions adequate, or was this something that one must see himself to enjoy? Were people really interested in this

By Lewis Walker

PHOTOS BY THE AUTHOR

sort of Nature program, the description of wild animals behaving naturally so close to humans they could almost be touched? These were the questions in our minds as we signed off with "this broadcast has originated from a waterhole maintained by the Arizona Sonora Desert Museum."

That night a few encouraging calls came to the station, but it was the mail of the ensuing week which showed conclusively that the program was a success. Most of the letters were written by listeners who wanted to get into the act themselves, either to photograph or to watch. They would be disappointed, I was afraid. My blind was of flimsy celotex construction, only 4x4x6 feet in size—far too small to accommodate the hordes of people wishing to observe from its interior.

Interest continued to grow. Finally by demand of museum members we undertook to construct an observation building of a size large enough to accommodate small groups yet small enough to avoid terrorizing the wild animals we hoped to attract.

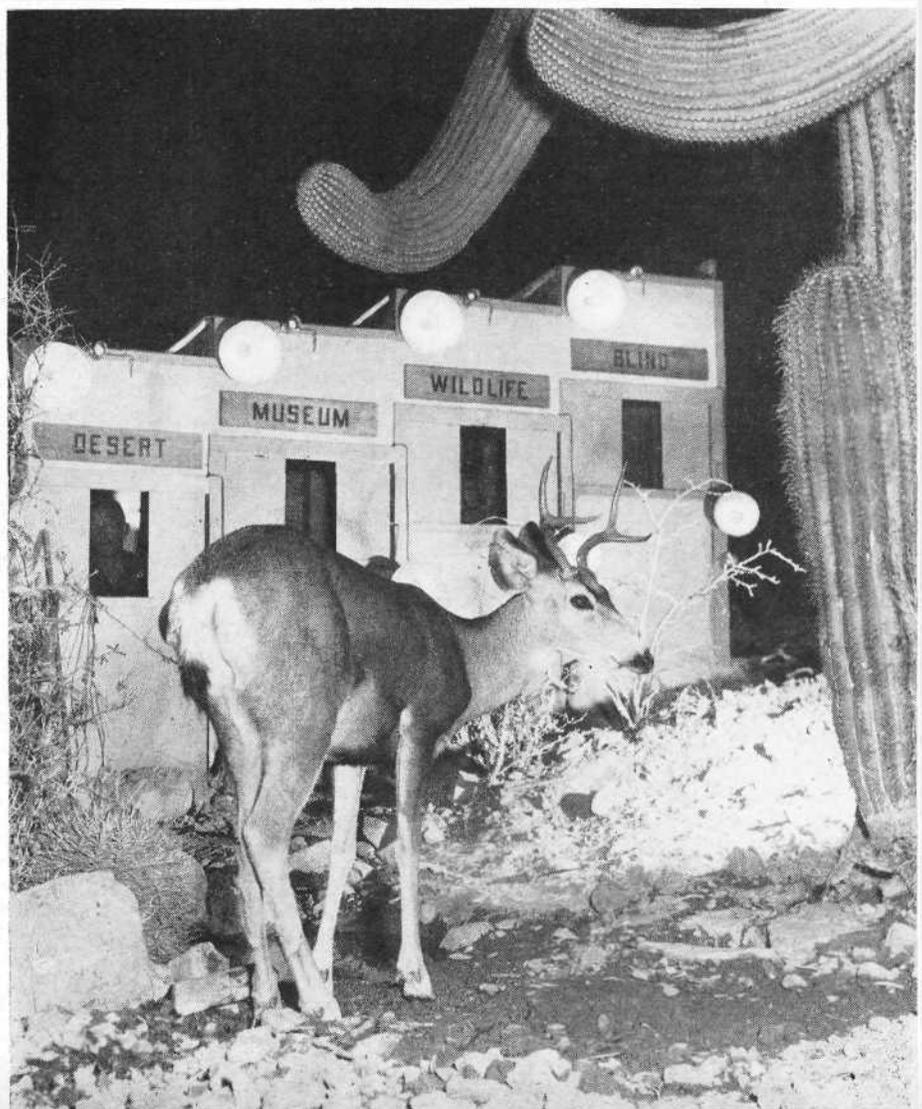
The waterhole wash, like most desert streambeds, had sloping sides. We reinforced a section with a ton of rocks in concrete as protection against flash floods and built upon it an elongated building with four observation windows. The structure was completely wired with both 6 and 110 volt electrical systems. Into the neutral colored stucco walls were built eight flash reflectors which by various wiring arrangements could fire any combination of lights. Adjoining each reflector a plug-in for 110 volt bulbs makes it possible to illuminate the area and permit the cameramen to see their subjects clearly.

Since the new blind's completion, Marvin Frost, museum photographer, and I have made countless experiments in photographic lighting, feeding and animal reaction. As a result, exposure guesswork is now a headache of the past, and accurate lens stops have been checked for every conceivable film and lighting combination.

Water is the chief drawing card for most desert animals, and deer and peccaries soon discovered our pool. We noticed the shadowy shapes of a few

Above—Two does and their fawns drink from the museum waterhole, and have their picture taken.

Below—A battery of flash reflectors fires from the wall of the blind when the photograph is taken.





Even the wily javelina of southern Arizona comes to the waterhole in the late hours of the night.

skunks, foxes and badgers and drew some of them within camera range by scattering scraps of food on the ground. These momentary visits were unsatisfactory, however, and we searched for a plan to lure them into the photographic area for longer stays.

Frozen horsemeat was the answer. Three feet from the waterhole we formed a cement depression to hold

a tin can of standard size. At dusk each evening, a can of ground horsemeat is removed from the deep freeze and set in position. The meat thaws so gradually that it lasts all night, and the shy animals come to scrape off a morsel from the softened top layer.

This controlled rationing of food now draws so many animals that as many as five species have been seen

at one time. As the days pass, new ones join the party and soon become regular visitors.

This photographic blind, open to members of the Arizona Sonora Desert Museum, has definitely passed the experimental stage and successfully offers to all classes of camera fans the opportunity to obtain wild animal pictures the easy way.

Don't Blame the Ranchers

Carl R. Erickson of Phoenix is a student of weather, and when one of *Desert's* authors made a rather general statement about humidity he undertook to clarify the point himself. His letter will be of interest to all desert dwellers, particularly those who live near irrigation projects and have complained that the ranchers' water creates humid days to make them more uncomfortable.

Phoenix, Arizona

Desert:

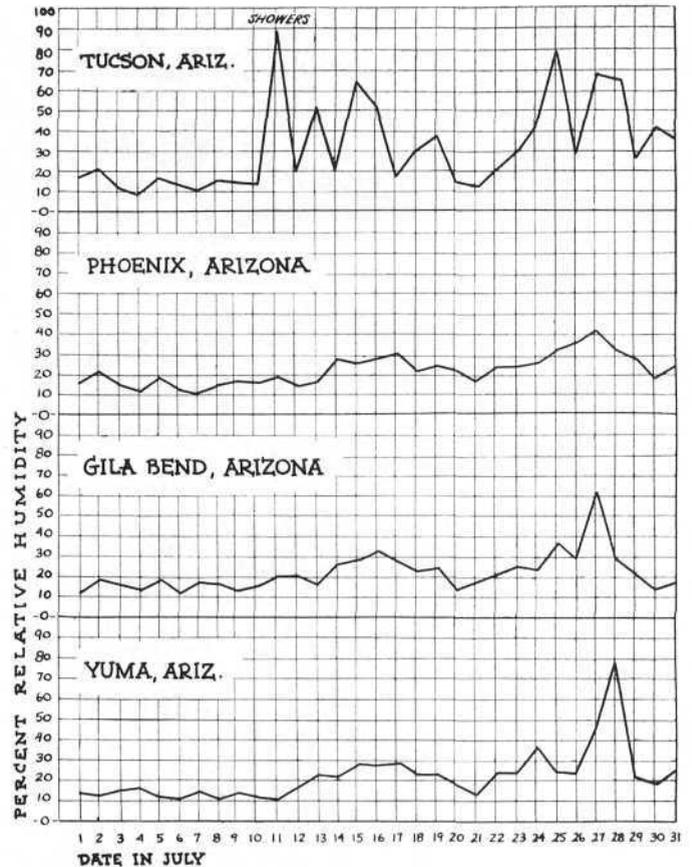
I enjoyed reading Editor Randall Henderson's fine article in *Desert's* July issue, "We Built for Summer Comfort." After visiting in eastern United States last July with their "sticky" climate, lack of air conditioning and their chilly restaurants, my wife and I were certainly glad to get back to Arizona and our own desert evaporatively cooled house for August.

There is one statement in the article upon which I would like to offer some comments. In the fifth paragraph on page 7, is the statement that "those dwellers whose homes are in or near large irrigation projects have some days of humid weather, especially in the late summer." This seems to imply that our excessively humid days, of which we get several almost every summer, are due largely to local influences, such as irrigation.

I would like to take another viewpoint, that they are due to wide-scale air movements and affect great portions of the desert Southwest, irrigated and non-irrigated at the same time. An examination of the day to day moisture content of the air for a number of widely separated points, shows a remarkable correlation of the up and down values of moisture content as the airmass changes. To satisfy myself on this point, I made the accompanying graph, using data found in our Weather Bureau Library here in Phoenix for relative humidity at 5:30 p.m. M.S.T. for a typical summer month, July, 1951.

Using Tucson, Phoenix, Gila Bend, and Yuma, this shows that when one point has humid or "sticky" weather, they all do. Most of our summer humidity in the desert Southwest comes from air streams originating in the Gulf of Mexico. As would be expected, these air streams often do not cover the entire area at one time. They may reach just so far, and then stop or bend in another direction. I have seen situations where the reports showed Yuma, El Centro, and Blythe in the moist stream and Needles and Las Vegas dry. And again Tucson and Phoenix were in the moist stream and Gila Bend dry. Occasionally Yuma and El Centro come under the influence of moist air from the Gulf of California while the other points remain relatively dry. People who travel a lot and notice these differences might readily conclude that the "sticky" heat was a local influence, perhaps due to irrigation.

Some might object that the data is taken at airports, where the influence of irrigation is at a minimum. But when the weather gets humid, the personnel who work at these airports will tell you they are just as hot and sticky as any place. I served an assignment at the Weather Bureau in Las Vegas a few years ago. I still remember a miserable humid week in August at McCarran Field there, when the cooler broke down. There was no irrigation within miles!



Relative humidity in four Arizona cities, 5:30 p.m. (M.S.T.) daily for month of July, 1951. Graph compiled by author from U. S. Weather Bureau data.

The influence of the Gulf of California on its immediate environs, of course, cannot be ignored. When the relationship between water and air temperatures is right and there is an on-shore wind in the lower levels of the atmosphere, moist air from the Gulf could increase the humidity in the lower Colorado River Valley and the Imperial Valley. It would be unwise to hazard a guess as to just how far north this influence would go without the study of suitable data. This "sea breeze" would be a very shallow one and would dry quickly by mixing as it proceeded inland.

Occasionally a deep layer of very moist air will come up the Gulf of California and cause extended periods of showers, or even continuous rain, over large portions of the desert Southwest. These deep drafts of moist air usually originate in dissipated west coast tropical storms or in air which has traveled clear across Mexico from dissipated east coast hurricanes. Under these conditions, which occur rather infrequently, the moisture content of the air is usually higher than at any other time for our desert areas.

Local influences can aggravate the situation. A few summers ago a particularly humid airmass was over a portion of the desert and then seemed to stagnate there for a few days with practically no upper air movement to take it on. Under these conditions, and a cloudless sky in Imperial Valley, the temperature soared to unreasonable heights for humid air in that area. Several people were reported to have died from the effects of the heat, mostly on the Mexican side of the Valley. There, local influences, including the shape of the valley, and the amount of irrigation probably helped to intensify the situation. Any time you get temperatures approaching 105° with a dew-point over 70°, there is going to be trouble.

There is also another way in which local influences can modify the comfort factor. Our three major irrigation projects, Phoenix, Yuma Valley, and Imperial Valley are large relatively flat saucer-shaped valleys with very narrow openings for air drainage compared to their size. (Imperial Valley, of course, has none.) In such valleys air cooled by radiation at night has a tendency to "pool" in a shallow layer near the ground. This air, being cooler, is relatively heavy and prevents "convection," or mixing with the warmer, lighter air above. To the frost man, in winter, the boundary between the two layers of air is known as the "ceiling." The same phenomenon occurs in summer, although, of course, the temperatures are higher. Pollens, dust, moisture evaporating from plants or irri-

gated fields, etc., are all trapped in this cool layer at night and remain there until the sun warms the air in the morning. Hence early morning "air moisture" readings, such as relative humidity, probably show greater values in those areas than on foothill slopes and other places which have good natural air drainage at night and are not subject to this "pooling" of air into an "inversion" at night, as they are called.

Which brings up another whole subject, "Where, if you can choose, is the most healthful place to put your desert home?" But we better leave that problem for another day.

Very truly yours,
CARL R. ERICKSON

LETTERS

Tom Wilson's Shopping List . . .

Los Angeles, California

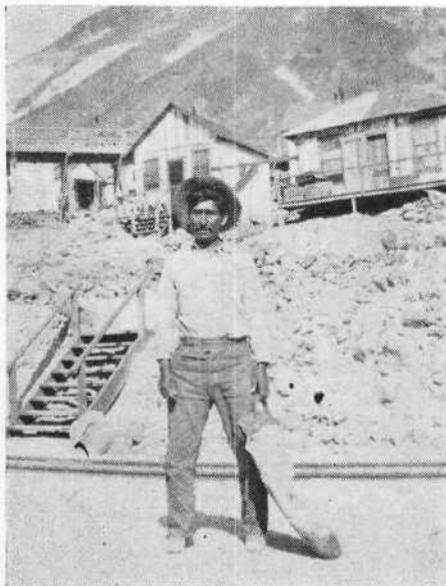
Desert:

The article by Edna Price in the July Desert about "The Other People Who Come to the Waterholes" really carried me back a long way.

I knew of, but never met Johnny Shoshone. However, when I was in the employ of the Pacific Coast Borax Company at Ryan, California, during the winter of 1918, I met and became quite friendly with Tom Wilson, who is mentioned in Mrs. Price's article. Tom wasn't an "old Indian" then, as the enclosed picture will show.

About once a month Tom would come up to Ryan from the floor of the Valley, to buy supplies for his people from the Borax Company's commissary. At the time I was stenographer, bookkeeper, time keeper, paymaster and during my spare time relieved the postmaster who also ran the commissary.

*Tom Wilson, Death Valley Indian.
Photo taken at Ryan in 1918.*



Tom Wilson would come into the store and make many purchases of sundry items, such as sox, underwear, shirts, shoes, smoking and chewing tobacco, candy, gum, possibly a horse collar—in fact a little of nearly everything stocked in the commissary. But the thing I marveled at was his ability to make countless purchases without a shopping list—for Tom could neither read nor write.

He always paid cash and after making a small series of purchases, would go out and sit on the porch in the sun. Then he would come back in and start buying again. Another pair of shoes (different size from the other two pair he bought), more tobacco, three more pair of sox, and so on until all his money was gone. I recall the time Tom came up with 15 cents left over and finally, after considerable thought, bought three packages of chewing gum. I learned from him that it was his practice to make his purchases in the order in which his people gave him the money and made their requests. Perhaps on occasion an Indian got chewing gum instead of chewing tobacco. Tom wasn't infallible, but when I go to the market to buy more than three items, I have to write it down.

R. J. SMITH

The "Petrified" Coyote . . .

San Bernardino, California

Desert:

While looking through some old photographs recently, I came across the accompanying snapshot, taken on the desert in 1923. It may be of interest to *Desert* readers.

As the road signs indicate, the photo was taken near Yaqui Well in San Diego County, California, on the road to Warners from Kane Springs.

In the fall of 1923, I conducted a survey locating the present high voltage transmission line connecting El Centro with the Henshaw Dam electric facilities. While searching for a section corner, a member of the survey party found the sun-baked remains of what we took to be a coyote. The remarkable part of the find was the

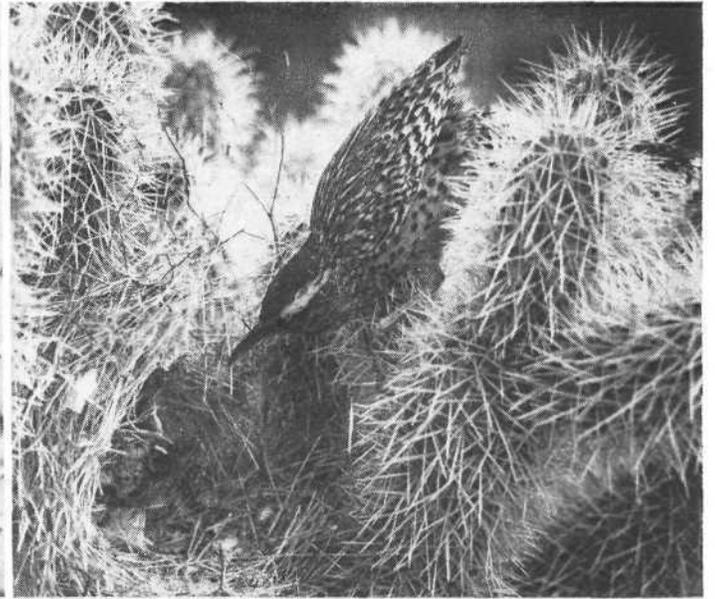
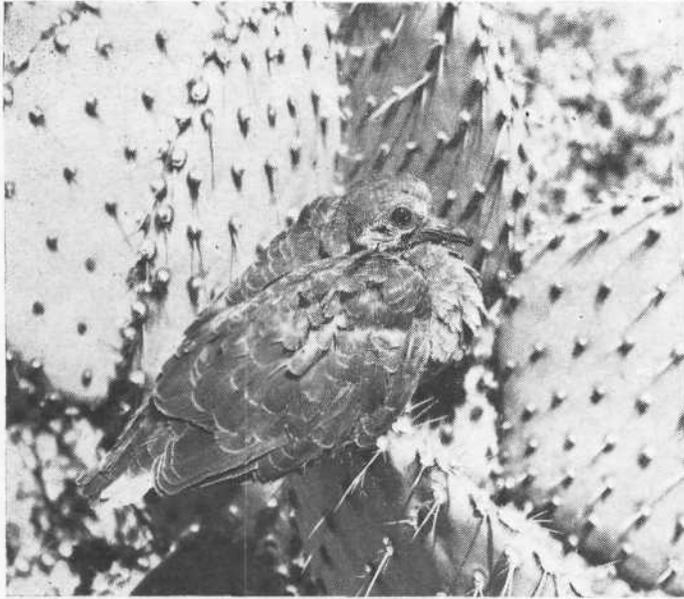


L. T. Norlen and the perfectly preserved coyote carcass found near Yaqui Well, California, in 1923.

almost perfect state of preservation. Evidently it had been the only animal in the area when it died, as the carcass had no mark or scar upon it to indicate it had been disturbed by any of the desert scavengers.

We were puzzled by the well-preserved body. This may be a common occurrence on the desert, but it was new to us. It was apparent that the dead animal had been sun-baked so quickly by the sun's intense heat that decomposition had not set in to any extent. The skin was cured like leather. The body was shrunken, as is evident from the photograph. The sinews and muscles were tightly drawn and stretched and the joints so firmly set that it was rigid and could stand alone.

L. T. NORLEN



Mourning dove (left) and cactus wren, two of the regular visitors to Elsie and Myriam Toles' ranch in the Chiricahuas. John L. Blackford photo.

We Learned About Birds By Feeding Them...

By MYRIAM and ELSIE TOLES

WHEN WE TWO women first acquired our ranch home of 160 acres of mesquite and prickly pear near the foot of the Chiricahua Mountains in Southeastern Arizona, we were not particularly interested in birds. We knew a hawk from a hummingbird, and not much more. But gradually we came to know and appreciate our winged neighbors, and now the ranch is known as a bird sanctuary where small visitors are assured of rest, protection, food and water.

The Arizona cardinal initiated us. After we had eaten watermelon in the yard, we saw him affectionately feeding the seeds to his mate. Then he flew to the top of the windmill and, a brilliant spot of red against the blue, informed the world in liquid notes that he laid claim to this bountiful territory.

Such a combination of beauty, musical talent and conjugal virtue deserved encouragement. If he liked seeds, seeds he should have. We tried him out on the round little yellow gourds that grow along our roadsides. He loved them. Now on our drives, we gather them from far and near, and there always is a gourd or two impaled on the fence to provide our favorite bird with his favorite food.

Watching for the cardinal's visits

There is scarcely an hour of the day that birds are not bathing, eating or drinking at Myriam and Elsie Toles' ranch in the Chiricahua Mountains in Arizona. Their formula for such bird-attracting success?—food, water and protection. In this second-prize-winning story from *Desert's* recent contest, "How to Attract Birds," the authors tell how you, too, may entice birds to your homes and enjoy the countless hours of entertainment their antics provide.

to the gourds, we began to observe other birds, the perky little Gambel sparrows, Cassin's and the house finches with their rosy breasts and the canyon towhees, who liked to dine on the remnants left in the dogs' feeding pan. By this time, we were definitely becoming birders, inspired with the desire to lure the birds within range of observation. A real feeding station was necessary and one day, discovering a discarded metal tire cover, we lugged it home from the creek bottom and dropped it, hollow side up, over a post to serve this purpose.

It had the ridiculous effect of a Mexican hat, which we increased by covering the protruding end of the post with a short section of stove pipe and painting the whole thing a gaudy blue. We keep a layer of gravel in the bot-

tom, and provision it daily with bread crusts, seeds and bits of fruit. At times we cap the crown with bread crusts covered with wire netting to prevent the occasional blue jays from snatching a whole slice at a time. In the winter the crown is rakishly trimmed with an open mesh bag filled with scraps of fat, or cakes of tallow mixed with grain.

Gradually the hat has become a port of call for resident and migrant birds alike. The belligerent curve bill thrasher dines alone, the sparrows and finches are regular boarders as are the towhees, both canyon and green tailed. The pyrrhuloxia is a shy occasional visitor, as is the long tailed chat. Our rarest visitors came but once. Three beautiful red pine grosbeaks dropped down into the hat, scratched and chattered noisily for a few minutes and went on their way, to return no more.

Belatedly it occurred to us that water in this dry land would attract birds that food failed to bring. We set a shallow pan on a post shaded by a mesquite tree and placed perching sticks across it. We were rewarded immediately by a flock of green backed gold finches, as well as tanagers, kingbirds and doves. Also in the shade of the mesquite, but on the ground, we set out a large dishpan, level with the surface. In it we placed several rough stones, large enough to extend out of



The Toles' Mexican hat feeding station—a discarded metal tire cover, dropped hollow side up over a post with a short section of stove pipe topping it off and painted a brilliant blue. Arizona cardinal feasts from rim.

the water. That did it. There is scarcely an hour of the day that birds are not bathing or drinking. One day we saw thirty Gambel quail jostling each other for a place at the pan.

For some reason, the favorite bathing season seems to be immediately after a rain. As though reminded how delightful water can be, the birds come flocking. Half a dozen at a time, the smaller ones hop into the pan and send the water up in showers, while others crowd around awaiting their turn.

Oddly enough, in those early years, although we did not so regard it at that time, it was our good fortune as budding birders to be perpetually stunted on water. In consequence we were forced to depend largely upon native growth for our planting, later to make the pleasant discovery that we had thereby provided additional attractions for the birds.

We left undisturbed the prickly pear that flourished on our acres, and cactus wrens and even Paisano, the road-runner, nested there. We set out several ocotillo plants to frame the distant view of the valley. When they bloom, each morning and evening there is always one of our three orioles — hooded, Scott's or Bullock — poking his bill into each flower of the flame-tipped spears.

In search of trees that would survive on a meager ration of water, we remembered the desert elderberry that

still grows on the site of many an early day mining town. Now we have three that never have been pruned into trees, but permitted to grow in many-branched clumps. They are green most of the year, and thick with berries in the summer. Then the word must go forth along the bird highways, for the trees are alive with visitors from dawn to dark, many of them birds we never see at any other time.

A hackberry volunteered near the elderberries. We pruned it ruthlessly into shape, and now it is a green canopy, a favorite nesting place for hummingbirds. Phainopeplas also thriftily build their nests in it, within easy reach of the elderberries they feed their young.

When additional water made possible the planting of shade trees, we were undeservedly fortunate in our selection of the lugustrum, relative of the privet. We chose it because it stays green all winter. But when its berries ripened, we found robins coming to sample them, and two successive springs a half dozen Bohemian wax wings stopped off to eat their fill.

For shelter and nesting, our Chinese elms are a great attraction. Like the elderberry, they grow rapidly and withstand drouth. Since a deep well solved our water problem, all of the vegetation has grown rapidly, and now our houses are set in a green bower from which echo bird calls at all hours of the day. The orioles nest in the elms, Cassin's king birds swoop into them to spend the night, and the quail, too, roost there, with little comfortable murmurs as they settle down.

For flowers we have depended largely on the native plants, many of which are of the sunflower type, producing seeds much prized by the birds. One of the choicest flowers is the wild four-o'clock, its blossoms delicate, exquisitely scented white trumpets, from which trail long purple stamens. It is a lure for hummingbirds. We have added only those cultivated plants that attract birds — honeysuckle, four-o'clocks and tall sunflowers.

Food, water, planting—all these we have provided for our feathered friends, but our best assurance of attracting and keeping them with us is the protection we give them. The land that surrounds the ranch houses and yard is too dry for farming, too small for cattle. We have kept it wild. We permit no shooting, we have no cat, and except for their natural enemies, the birds are undisturbed from one year's end to the next. Our reward has been the beauty and pleasure they have brought us and our friends. In recent years, there has come another—the increasing number of birders, those most delightful of people, who visit us to ob-

serve and photograph the more than 100 different birds we have listed here at one time or another.

THE *Desert* MAGAZINE CLOSE-UPS

It wasn't until he moved to Colorado, as a student at Colorado A&M College, that Douglas E. Kelly found opportunity actively to participate in a sport which had fascinated him all his life. He was introduced to mountain climbing by his friend Dick Stenmark, and with Dick and as a member of the Colorado Mountain Club, he has made climbs of all types. One of the high points of his climbing career was the conquest of Shiprock, New Mexico, which he describes in this month's *Desert*.

Doug was graduated in zoology from A&M this June, and looks forward to graduate work at Stanford. Besides mountaineering, his hobbies include photography, skiing and writing.

* * *

"We are two teachers who decided to retire to our ranch home in Arizona's Chiricahua Mountains while we were still able to cope with water problems and the other crises of ranch life," writes Elsie Toles of herself and her sister, Myriam. The sisters Toles are co-authors of "We Learned About Birds by Feeding Them," second prize story in *Desert's* recent writing contest which appears in this issue.

For eight years, Myriam toured Arizona and California with her own company, presenting marionette plays for schoolchildren. This summer, she is giving courses in creative dramatics at the Idyllwild Arts Foundation, Idyllwild, California.

Elsie was formerly state superintendent of public instruction in Arizona and for a number of years a member of the faculty at San Jose State College, California.

The sisters have published one book for juveniles and have just finished a second. They also write stories and articles for various publications.

* * *

Fred and Betty Lee Williams, whose jackrabbit homesteading adventure is related in this issue of *Desert Magazine*, commute weekends to Lizard Acres, their Apple Valley cabin, from their home in Los Angeles, California. Mrs. Williams, a graduate of Occidental College, Los Angeles, has taught first grade in the city schools for six years. Her husband, a Navy veteran of World War II, recently passed his California bar examination.

Here and There on the Desert...

ARIZONA

Approve Gila Dam Planning . . .

SENTINEL—To complete planning of Painted Rock Dam on the Gila River, congress has approved a \$100,000 appropriation. The dam, located near Sentinel, Arizona, calls for expenditure of \$25,000,000. Primary purpose of the project is to protect the Wellton-Mohawk reclamation project down stream from floods, though there will be some incidental storage. With the new appropriation, construction on the 174-foot earth dam could start during fiscal 1955. The army already has begun withdrawal action to reserve 118,310 acres for the project, which was authorized by congress in 1950. —*Phoenix Gazette*

Investigate Javelina Killing . . .

MESA—Investigation is underway by the Arizona Fish and Game Commission into the slaughter of at least three and possibly five javelina near Mesa, Arizona. The carcasses of three animals were found near a road where they apparently were blinded by car lights and shot with a .22 caliber weapon. It was believed two were carried away. Penalty for illegal taking of javelina ranges from a fine of \$100 to \$300 and three to six months in jail or both. Javelina can be hunted legally the last two weeks in February. —*Phoenix Gazette*

Favor Parks Road . . .

FLAGSTAFF—County supervisors indicated they were heartily in favor of an all-paved loop road that would connect Sunset Crater and Wupatki National monuments in Arizona. Beginning and ending on Highway 89, it would provide a new beautiful scenic drive. John Davis, superintendent of the Southwestern National Monuments for the national park service, said his agency already has funds available for construction of the roads within the parks. Because they must wait until next summer to list the project for federal aid, the supervisors could not order immediate action.—*Coconino Sun*

Consider Rodeo Hall of Fame . . .

PRESCOTT — Prescott, Arizona, reputedly the site of the nation's first rodeo 67 years ago, is being considered as possible location for a rodeo hall of fame. C. A. Reynolds, sponsor of the project, is now seeking support of senators and governors of 17 states to establish a shrine to rodeo performers. Other towns being considered are Cheyenne, Wyoming, and Pendleton, Oregon.—*Yuma Sun*

Hopis Win Long-Sought Change . . .

PHOENIX—"The peaceful ones," the Hopi Indians of northern Arizona have won a long-term "battle." After a lengthy campaign by tribal members for the change, administration of their reservation has been disassociated from the joint Navajo-Hopi agency at Gallup, New Mexico, and placed under the Phoenix area office. About 4000 Hopis reside on the 631,194 acre area which is surrounded by Navajo land. Ralph M. Gelvin, Phoenix area director, will be supervisor under the new arrangement. Principal agency site is

at Keams Canyon where Clyde Pensoneau is superintendent. Phoenix area office now administers Indian affairs in Arizona, Utah, Nevada and handles some accounting and gives technical advice to some California groups.—*Phoenix Gazette*

Plan Mojave Lake Development . . .

PHOENIX—Some projects are already started on a \$1,984,000 development of the Lake Mojave area on the Colorado River planned by the National Park Service. Substantial improvements at a number of spots along the lake where limited public facilities now exist are planned, including planting of shade trees for shelter and campsites and improvement of access roads. —*Phoenix Gazette*

TRUE OR FALSE

Desert Quiz fans will find some easy ones in the list this month.

But there are others which will require a familiarity with the geography, botany, history, geology, Indians and lore of the desert country. Twelve to 14 correct answers is fair, 15 to 17 is good, 18 or over is exceptional. The answers are on page 39.

- 1—Desert tortoises hibernate during the winter months. True..... False.....
- 2—The Joshua tree is a native of the Southwestern deserts. True..... False.....
- 3—The Snake Dancers in the Hopi ceremonial are always men and boys—never women. True..... False.....
- 4—Phantom ranch in the Grand Canyon is located along Bright Angel Creek. True..... False.....
- 5—The rock often called volcanic glass is actually mica. True..... False.....
- 6—Wild dates from the date palm trees were an important item of food for desert Indians when white men first came to this region. True..... False.....
- 7—The landmark known as the Great White Throne is in Zion National Park. True..... False.....
- 8—Between the mouth of the Colorado River and Lake Mead there are now seven dams. True..... False.....
- 9—Salt River Valley in Arizona receives its irrigation water from the reservoir behind Hoover Dam. True..... False.....
- 10—The plumes of the Salt Cedar bush are yellow. True..... False.....
- 11—An atlatl was a weapon used by prehistoric desert Indians for killing game. True..... False.....
- 12—The aspen is an evergreen tree. True..... False.....
- 13—Tuba City is the name of an old trading post in Arizona. True..... False.....
- 14—The Gulf of California was once known as the Sea of Cortez. True..... False.....
- 15—The capital of Nevada is Reno. True..... False.....
- 16—Woodpeckers often drill holes and make their nests in Saguaro cactus. True..... False.....
- 17—Escalante, Utah, was named for a Spanish *conquistadore*. True..... False.....
- 18—Fairy Duster is the common name of a desert bird. True..... False.....
- 19—Cochise was a famous chief of the Navajo Indians. True..... False.....
- 20—Borrego Desert State Park is in Arizona. True..... False.....

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CALIFORNIA

Scientists Support Indians . . .

BERKELEY — Scientists have thrown their weight behind 31,000 Indians in their \$93,000,000 claim against the U.S. for virtually the entire state of California and a long list of abuses. It is the largest claim of its type ever made. Previous record was a claim paid the Ute Indians several years ago for \$31,500,000. Dr. Albert Kroeber and Dr. Samuel A. Barrett, University of California anthropologists argued that Indians had established their ownership of California through years of living on the land, hunting and fishing on it and setting up elaborate tribal customs for it to be handed down from generation to generation. These rights were respected by the Spanish colonists and after the Mexican War they were embodied in the treaty of Guadalupe-Hidalgo. This treaty shifted the responsibility for the Indian rights to the United States. But after the gold rush in 1848, white men surged through California hardly giving a nod to the rights of the Indians. Payment of the claim by the government would average out about \$3000 for each California Indian. — *Yuma Morning Sun*

GHOST TOWN ITEMS: Sun-colored glass, amethyst to royal purple; ghost railroad materials, tickets; limited odd items from camps of the '60s. Write your interest—Box 64-D, Smith, Nevada.

PARTNER WANTED: Uranium prospecting, Colorado plateau and other areas. Three months or longer. Must share expenses. E. Rice, 12322 Montana Ave., Los Angeles 49, California.

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SILVERY DESERT HOLLY PLANTS: One dollar each postpaid. Greasewood Greenhouses, Lenwood, Barstow, Calif.

Trona Takes New Role . . .

TRONA—Ending its role as a company village, Trona will soon become a San Bernardino County service area with county supplied sanitation, fire protection, street lighting and more. In the proposal for establishing it as a county service area, supervisors were told that almost half the homes, owned by American Potash and Chemical Company, have already been sold to individuals in the transition from a company village to a regular town.—*Los Angeles Times*

Map Open Mine Shafts . . .

MOJAVE — Kern County supervisors have ordered the mapping of all open-shaft mines in the eastern part of the county in an effort to prevent accidental falls. One man was hired for the job which is expected to take only a few weeks. After all shafts have been located, the supervisors will take steps to have mine owners make them safe. Urgency of the action was emphasized when a 12-year-old boy recently fell into an open mine shaft near Kern River Canyon and was seriously injured.—*Mojave Desert News*

Urge Action on River Sewage . . .

CALEXICO—Action to halt use of New River for sewage disposal by residents of Mexicali, Mexico was urged by Imperial Valley officials at a recent hearing of the Colorado River Basin Regional Pollution Control Board. Dr. Austin W. Matthis, county health officer, told the board that the condition of New River is retarding the development of the valley and complicating sewage disposal problems of several communities. Another official, Dick Emerson, Calexico city clerk, estimated that half Mexicali's sewage is emptied into the river, polluting that area and the Salton Sea. A note of encouragement was given by Terrance H. Donovan, Indio, board executive officer, who said plans are now being studied by Mexican authorities for a sewage disposal system to serve all Mexicali and relieve New River from use as a wasteway.—*Date Palm*

May Open 20,000 Acres Land . . .

EL CENTRO — Taking the first step in the possible development of 281,000 acres of land on the East Mesa of Imperial Valley, consideration is now being given to opening the first 20,000 acres. Making the announcement was the U.S. Department of Interior. The land is within the Imperial Irrigation District and has water available for farming through the All-American Canal. Under the program now being considered, land would be available for sublease to private individuals at no cost to the U.S.

or the water district for period of 20 years. At the end of the lease the land would be turned back to the district and the Bureau of Reclamation and would be opened for entry, with preference going to war veterans.—*Los Angeles Times*

NEVADA

"Joss House" Is Doomed . . .

WINNEMUCCA — The historic crumbling Chinese Joss House in Winnemucca, once the center of Winnemucca's Chinese culture, has been earmarked for destruction. Under orders of the city council, the sagging structure which dates back to the first of the century will be demolished as a hazard and public nuisance. The Joss House was erected in 1902 by the 40 to 50 Chinese residents of the city and was used as a temple of worship and clearing house for the Chinese societies of northern Nevada until 1930. Its ebony carved altar, brass prayer bell and octagon lights were long ago looted and the building is now empty.—*Humboldt Star*

Ichthyosaur Skeleton Found . . .

FALLON — A 50-foot-long skeleton of an Ichthyosaur, sea-going reptile that existed 160 to 200 million years ago, has been uncovered in the Shoshone Mountains east of Fallon. Remains of other Ichthyosaurs, the largest ever discovered from the Triassic Period, are also evident at the 7000 feet-high location. An 11-man expedition from the Department of Paleontology of the University of California, Berkeley, headed by Dr. C. L. Camp and Dr. S. P. Wells, uncovered the remains of the fish-shaped animal. The fossil, said Dr. Camp, is probably the largest and best preserved of its kind in the world. The animal lived in the Upper Triassic period of the Mesozoic era of the earth when Nevada was under an ocean. Dr. Camp urged the state to create a special "monument" of the area so that the fossils could be reconstructed and preserved.—*Humboldt Star*



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Six-Week River Trip Ends . . .

BOULDER CITY — A six-week Colorado River trip by raft, which began with two members and ended with four, ended at Lake Mead July 11. Earl Eaton and Charles Volte, both of Aspen, Colorado, piloted the rubber raft, powered by two outboard motors, nearly 1000 miles from Roaring Fork River in Colorado. While in the Grand Canyon in Arizona they met two more adventuresome young men, Carl Gage, Los Angeles City College student and Leroy Byers, instructor at John Burroughs Junior High School, Los Angeles, who were uranium prospecting. The boat trip held more fascination for the prospectors than uranium so they piled on and completed the river trip down the Colorado.—*Las Vegas Review-Journal*

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LOS ANGELES

Band Pyramid Lake Pelicans . . .

PYRAMID LAKE — Over 500 white pelicans were banded on Anaho Island, Pyramid Lake, in July in an effort to discover if the birds winter at the Salton Sea in Imperial Valley. The work was directed by Edwin O'Neil, manager of the Salton Sea Wild Life Refuge.—*Reese River Reville*

Earthquake Causes Damage . . .

FALLON—Aftermath of the July 6 earthquake which centered in Fallon was feverish work to repair damaged irrigation facilities and get water to parched crops. Over a week after the quake 6000 acres of farm land were still without water. Extensive damage required emergency work on the Kemp-Winder flume, a coffer dam to put Coleman dam into temporary operation, repair of pipe lines, and irrigation canals and ditches.

NEW MEXICO

Indians Called to Fight Fire . . .

TAOS—An emergency request from U.S. forest officers for fire-fighters to battle a Wyoming blaze, was answered by three groups of expert fire-fighters from Taos and Penasco. The Snowballs, a 23-man crew of Taos Indians, and two 21-man crews from Penasco, called the Tortugas, were transported to Wheatland and Cheyenne, Wyoming. They moved by road to the fire on public domain range, 75 miles north of Cheyenne. The Snowballs and Tortugas have earned nation-wide fame for their prowess in combating forest fires.—*New Mexican*

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Open New Indian Bureau . . .

ALBUQUERQUE — New national headquarters for the Buildings and Utilities branch of the Bureau of Indian Affairs has been established in Albuquerque. The new office, which will supervise all construction activities of the bureau, is being staffed with construction personnel drawn from Washington, D.C., and area offices. The staff will consist of 37 technical and 15 clerical or administrative employes. The branch will continue to be headed by Edward A. Poynton.

Discover Pre-Folsom Man . . .

SANTA FE — Arizona and Texas archeologists recently completed a report in Santa Fe on discovery of bones that could be the oldest human remains found on the western hemisphere. Dr. Fred Wendorf, Santa Fe, archeologist at the Museum of Anthropology there and Dr. Alex Krieger of the University of Texas said that fluorine tests on a skull discovered near Midland, Texas, indicate it is much, much older than the Folsom Man. The Folsom period was around 8000 B.C. The discovery was made by Keith Glasscock of Pampa, Texas, a welder by profession and amateur archeologist. Besides the skull discovery, a careful survey of the site brought to light a heretofore unsuspected geological age in America. The fossil deposits and earth layers showed that there was a time—perhaps many thousands of years—when the Southwest was a terrible desert, worse than anything we know today. Then the ice shifted southward again and what is now the Southwest returned once more to a land of streams and lakes and lush foliage and populous animal life. It was towards the end of this period, the Pleistocene era, that Folsom Man appeared. When pieced together the bone splinters made an almost perfect skull.—*New Mexican*

Ft. Union Becomes Monument . . .

LAS VEGAS — Old Fort Union, once the anchor and depot for practically all military operations in the Southwest, has been designated a national monument. President Eisenhower signed a bill in July making the historic relic of the frontier a national shrine, accessible to all who wish to visit it. Ft. Union was one of the largest and longest inhabited frontier forts. It was established and named by Col. E. V. Sumner in 1851 and continued to function until May, 1891. Kit Carson was one of its famed commanders. Reliable sources report nearly a quarter of a million dollars has been budgeted for restoration of the ruins and construction of new facilities.—*Alamogordo News*

Monument Erected to Captain . . .

MAYHILL—A monument has been erected and dedicated at Mayhill to Captain Henry W. Stanton of the First Dragoons, who died there 99 years ago in a skirmish with a band of Mes-calero Apaches. Captain Stanton and two of his men were killed when ambushed in a narrow gully in a running battle with the Apaches. Fort Stanton was named for the Dragoon captain when it was established in June, 1855, as a post from which the army hoped to solve the Indian problem. The Mayhill marker is the first of a series to be installed in Otero County, prompted by increasing interest in historical sites.—*Alamogordo News*

Chukars Like New Mexico . . .

SANTA FE — Apparently chukar partridges, natives of Turkey, are right at home in New Mexico. According to the game department, there are now at least three known sites where chukars are now established and breeding in the wild. The hatch this year is expected to be 300. The chukar does not compete with native birds for food and is excellent table fare. — *New Mexican*

Iguana Sojourns In Las Cruces . . .

LAS CRUCES — A four foot ten inch tropical lizard, an Iguana, either took an extended hike or got on the wrong bus, for it was found in Las Cruces, New Mexico, hundreds of miles from its native habitat. Iguanas are found chiefly in Southern Mexico, Central and South America, but very rarely in the United States. Complete with scales, they look the part of an ancient prehistoric animal. They can bite, but are not poisonous and are not considered dangerous. Officials of the New Mexico Game and Fish Department theorize the lizard either came in on a load of bananas or was hauled from southern Mexico by someone who dumped him before coming through customs. He could not cross the mountain range necessary to reach Las Cruces by himself. The Game and Fish Department plans on keeping him in Albuquerque where the climate is more suited to him.—*New Mexican*

UTAH

Separate Mixed-Blood Utes . . .

WASHINGTON—A bill which will divide tribal property between full-blood and mixed-blood Ute Indians has passed the senate and been sent to the house. Under the bill the mixed-blood members of the Uintah-Ouray reservation tribe will be completely separated from the Bureau of Indian

Affairs in at least seven years. Principal tribal asset is the remainder of the \$31,500,000 awarded the Ouray-Uintah Utes by the courts in 1951. Senator Arthur V. Watkins, sponsor of the bill, said that during the last three years the 439 mixed-blood members of the tribe have obtained the lion's share of assistance and are now approaching full integration with the non-Indian communities surrounding the reservation and "are in fact being retarded by their being linked to the 1326 full-blood members."—*Vernal Express*

Barbers Desert for Movies . . .

ST. GEORGE—It was tough getting a haircut in St. George. Both barbers hung "closed" signs on their shops recently for the more lucrative and entertaining work of making movies. But then haircuts weren't in style anyway, for RKO was paying handsome wages for extras with long hair to take the parts of Mongols or Tartars in the movie "The Conqueror," an epic about the 12th Century Mongol emperor Genghis Khan. St. George, a Mormon town of 4765 in the southwestern corner of Utah, was invaded by probably the greatest Hollywood expeditionary force ever to sweep down on an American town.—*Phoenix Gazette*

Climbing Attempt Fails . . .

VIRGIN — Again an attempt to reach the top of the great arch in Zion National Monument has failed. A pack train, which had left Virgin for the arch, was forced to turn back when two men were injured in accidents. The group was moving up a canyon towards the arch when ground gave away beneath a horse ridden by Dallen Spendlove and they rolled 30 feet down a steep bank. At the same time the horse ridden by Victor R. Fritz, who was in charge of exploration and climbing, became excited and stumbled throwing Fritz to the ground. Fritz suffered broken ribs and lacerations. Spendlove had a cracked arm and bruises.—*Washington County News*

Reserve Uranium Right . . .

OURAY—Uranium prospecting on the Uintah-Ouray Indian Reservation will be restricted to tribe members for six months, the tribe general council recently voted. At the end of that time it will be open to non-members as well. Both Indians and non-Indians must obtain permits before they can prospect on the reservation. Several hundred claims have been recorded for uranium in that area outside the reservation.—*Vernal Express*

Hard Rock Shorty of Death Valley



Ol' Buzz, the pet rattlesnake which Pisgah Bill kept in his cabin up on Eight Ball Creek had become quite a famous reptile. Visitors in Death Valley sooner or later heard about "that queer old prospector who could charm snakes," and one day a newspaper reporter came out from the city to get some pictures and write a story about the rattlesnake.

Pisgah Bill had gone down to Barstow to get a pack load of supplies, and Hard Rock Shorty, who had been Bill's partner for many years, finally agreed to tell the newspaper fellow what he knew about the snake.

"Happened this way," Shorty explained. "Bill wuz out on a prospectin' trip one day when he heard a lot o' commotion over in the brush. When he went over there he found one o' them road-runners had the rattler backed up against a rock and was jest about to finish 'im off. Bill picked up a rock an' went after the road-runner. Saved the rattler's life—an' the scared reptile wuz so grateful it follered Bill back to his cabin.

"Bill took a likin' to the darned thing an' started feedin' 'im. After that they became good friends an' the snake'd foller Bill all over

the camp. Kept the mice outta the grub box and did everything it could to show its 'preciation for Bill's savin' its life. When Pisgah's ol' alarm clock went on the bum he even taught the snake to start buzzin' at five every morning which wuz Bill's gettin'-up time.

"Then Bill got an idea. He started teachin' that snake to know the difference between gold nuggets an' ordinary pebbles. They'd go out together on a prospectin' trip an' Bill'd sit in the shade while Ol' Buzz'd crawl up and down the wash lookin' fer free gold. The snake even worked the gopher holes—an' Bill soon had his poke stuffed with nuggets.

"But after while they'd worked all the ground within walkin' distance of the cabin—an' then's when the trouble came. Bill loaded up his ol' mule, Dynamite, one morning for a prospectin' trip over into Nevada. Had a nice bag fer Ol' Buzz. But when he tried to tie the bag on the pack, Dynamite smelled the snake an' bolted over the hill. Bill trailed that animal four days before he got 'im back. After that, Ol' Buzz and Dynamite were mortal enemies—an' Bill never was able to make a prospectin' team o' them two critters."

Expect Tourist Increase . . .

VERNAL — Superintendent Jess Lombard believes national publicity and a new paved road will increase tourist traffic to the Dinosaur National Monument by 13,000 this year. Speaking to the Vernal Chamber of Commerce, Lombard reported 6000 persons visited the monument by car or boat during the first 13 days of July, a tremendous increase over previous years. In 1953 22,234 people visited the monument and 35,300 to 40,000 are expected in 1954. Lombard said the new paved section of state road from U. S. 40 towards the monument has helped, but the greatest factor is the national publicity on the contro-

versial Echo Park Dam. From July, 1953 to July 1954, Lombard added, 136 boats went through the monument carrying 671 passengers. — *Vernal Express*

Constitution Signer Dies . . .

MOAB—The last of the men who signed Utah's state constitution in 1896 died in a Salt Lake City hospital in mid-July. He was Mons Peterson, 93, born in Sweden in 1861 and a resident of Utah since 1868 when he settled in Huntsville, Weber County, with his parents. He later settled in Monticello and Grand County in answer to a call from the Mormon church.—*Salt Lake Tribune*

MINES and MINING

Moab, Utah . . .

If you collect petrified wood for your rock garden you could have a piece of uranium ore in your own back yard. Many fossil tree trunks and limbs embedded in uranium-bearing sandstones of the Colorado Plateau are partially replaced by uranium minerals. In the first quarter of the century, these trunks were prizes sought by radium hunters. Uranium logs or traces of those already removed by radium hunters are found by miners on the plateau now. In the Temple Mountain area of Utah, butt ends of logs project from Shinarump sandstone faces of canyon cliffs and in mine openings. Fischer and Hilpert, United States Geological Survey authorities on carnotite ores, report the fossil logs were rafted into place by ancient streams that deposited enclosing sands.—*Mining Record*

Mammoth, Arizona . . .

Old Reliable, a historic copper mine at Mammoth, Arizona, that was abandoned 35 years ago, has lived up to its name. The mine, located in Hidden Canyon 45 miles northeast of Tucson in Copper Creek, is operating again. Established during the Civil War, it enjoyed a boom in 1907 and another during World War One. Revived by Lewis W. Douglas, former U.S. ambassador to England, the mine is turning out 80 to 90 tons of ore, bearing three percent copper, daily. A 24-man crew works three shifts a day.—*Phoenix Gazette*

Washington, D. C. . . .

President Eisenhower was urged in early July to increase lead and zinc tariffs. Thirty-two senators from 18 states signed a letter asking the president to invoke the escape clause provisions of the Reciprocal Trade Agreements Act, which was then before him. "It is essential that assistance be provided to help relieve heavy unemployment in Western mining districts, to prevent resultant distress in the states involved and to ease the financial burden upon American producers who face a threat to existence," the letter stated. Asserting the country's lead and zinc industries face extinction without relief from heavy imports, Senator Pat McCarran, Nevada, revealed the Tariff Commission had unanimously recommended that the escape clause be invoked.—*Humboldt Star*

Santa Fe, New Mexico . . .

Indicative of the activity in the uranium industry in New Mexico is the large number of uranium companies chartered in the past three months. During that period 22 companies have been incorporated by the New Mexico Corporation Commission for the search for and development of uranium property.—*New Mexican*

Washington, D. C. . . .

Nevada gold and silver production was up four and 25 percent in April due to beginning of operations at the Tonopah King Mine, Senator Pat McCarran of Nevada announced. Gold output was 5621 ounces compared with 5395 the month before and silver production had risen from 33,614 ounces in March to 42,118 ounces in April. By states gold production was South Dakota 49,430 ounces, Utah 30,390, California 20,309, Arizona 9580, Colorado 8560, Washington 6403, Nevada 5621, Montana 2030, Oregon 800, and Idaho 780. Silver production by states was Idaho 1,407,290 ounces, Montana 531,160, Utah 497,340, Arizona 364,280, Colorado 322,200, Nevada 28,118, Washington 26,220, South Dakota 13,075, California 12,111, and New Mexico 5560.—*Territorial Enterprise*

Ely, Nevada . . .

As Nevada's first tank truck of crude oil rolled to Salt Lake City refineries in early July, two more wells were being drilled in Railroad Valley, near the site of the original discovery. Railroad Valley is near Ely, Nevada. Though a definite shipping schedule had not yet been set up, Shell Oil Company's Eagle Springs Number One well was averaging 373 barrels a day. New wells going down were Shell's Eagle Springs Number Three, five miles south of the discovery well and Hallstead Number One, 20 miles northwest of the discovery well. The Hallstead well is being drilled by Signal-Tillman and associates.—*Battle Mountain Scout*

Orogrande, New Mexico . . .

A gold vein lost 35 years ago has been re-discovered in the placer rich Orogrande area by Albert Culver and Jim Colwell. It is believed to be the "Little Angie" vein, worked many years ago by Tom Downey until he lost the feeder vein. The two men discovered the deposit when assessing a claim in the area.—*Alamogordo News*

Bisbee, Arizona . . .

With 45,000,000 tons of waste removed, the huge Lavender Open Copper Pit at Bisbee, Arizona, was to be officially opened August 7 during ceremonies sponsored by Bisbee and Douglas Chamber of Commerce. Governor Howard Pyle was to give the principal address. Plans for the observance included inspection of the smelter at Douglas and the new concentrator and a tour of Lavender Pit mine, concluding with a tremendous bank blast. A plaque was to be unveiled, crediting Harrison M. Lavender, who died 18 months ago, with the vision and engineering ability that was responsible for the development of the mine. To date \$25,000,000 has been spent on the project.—*Holbrook Tribune-News*

Gallina, New Mexico . . .

Two major uranium discoveries in southwestern Rio Arriba County, New Mexico, showing uranium content of high percent purity, have been reported by Bill Jackson, agent for United States Mining Company. They are located in Burns Canyon area near Gallina. Jackson said the mining company is seeking leases for 10,000 to 12,000 acres at the discovery areas. Besides uranium there are traces of iron, copper and gold in the ore.—*New Mexican*

Socorro, New Mexico . . .

Chicago investors paid \$75,000 for 51 claims in the Lemitar Mountains, about four miles north of Socorro, New Mexico in purchase of what they termed "a major uranium strike." Sid Cohen, spokesman for the group, said the three discoverers, Gordon Tolliver, Ray Carter and Boyce Cook, also received a 15 percent royalty agreement. Uranium found so far in the area has been on top of the ground in volcanic dikes and has been running as high as .248 per cent. Cohen said negotiations are under way for extensive exploration of the area by core and diamond drilling.—*New Mexican*

Vernal, Utah . . .

A total of \$50,000 and one-twentieth of the corporation in 500,000 shares of stock have been paid for a 12-claim block of uranium ore south of Davis Ward, near Vernal, Utah. Making the purchase was the James E. Reed brokerage company of Salt Lake City. The claims are leased to the Bush Drilling Company, a Colorado corporation, which will mine and operate the claims. Seismograph drilling crews are now working on the claims.—*Vernal Express*

GEMS and MINERALS

COURAGEOUS DOG WILL BE HONORED BY GEM MONUMENT

For giving his life in defense of his mistress, Booty, a 10-year-old blonde Cocker Spaniel, is going to be honored as few canines have been.

A monument of stones, collected by rock-hounds, including crystals, some cut and polished stones and others in the rough, will be erected in his memory.

Booty was a dog with personality—and courage. He accompanied his mistress, Mrs. Frances Berkholz, into the Bullion Mountains, just as he had tagged her all his life. Mrs. Berkholz is field trip chairman of the California Federation of Mineralogical Societies and was preparing camp in Hidden Canyon for a group of rockhounds which was to arrive the following day.

It was dusk. Mrs. Berkholz was standing in a wash, with Booty nearby. A large Mojave Red rattlesnake lashed at Mrs. Berkholz without warning. Booty grabbed it, but was struck twice on the nose.

First aid and night-long treatment by a veterinarian were not enough. Booty died next morning.

When he heard about it, "Agate" Pete Zollars, editor of *The Voice*, publication of the El Paso (Texas) Mineral and Gem Society, started the rocks rolling by suggesting that clubs of the Texas Federation send stones to be placed on Booty's grave. The project caught on with many other clubs, too, and the monument, composed of the stones, will be erected at the site of the fight this fall.

An educational quiz on geology and rocks was conducted at a recent meeting of the El Paso Mineral and Gem Society, El Paso, Texas. All 56 members attending the meeting at the home of Mr. and Mrs. Emil Frie, were divided into two groups which vied for honors. W. W. Wimberly of the El Paso school system showed three sound films. A picnic dinner was enjoyed.

A movie titled "Carbon 14" was slated for the July meeting of the San Francisco Gem and Mineral Society. It shows the method of determining the geological age of rock by the amount of disintegration of radio active carbon.

SANTA CRUZ SOCIETY INSTALLS NEW OFFICERS

New officers of the Santa Cruz Mineral and Gem Society, were installed at a recent meeting by Hubert A. Dafoc, federation president. They are Hugh H. Paired, president; Gerald Butterfield, vice-president; Mrs. M. D. Taylor, treasurer and Mrs. Kenneth Black, secretary. Jack Moore, retiring president, was named to serve as the new three-year director. The society set Oct. 23 and 24 as the dates for their fourth annual gem and mineral show to be held at the Riverside Hotel, Santa Cruz, Calif. Completing the program, Mr. and Mrs. Hubert A. Dafoc showed colored slides and specimens secured on a Utah field trip.

SAN DIEGO LAPIDARIES PLAN SEPT. 18-19 SHOW

Third annual lapidary show to be presented by San Diego Lapidary Society will be held this year September 18 and 19 at Turners Hall, 1648 30th Street, East San Diego.

Members will display collections and there will be some commercial displays. A working faceting display will be presented by Ed Soukup, instructor, and members of the faceting class.

Members of the Rock and Gem Club at Fallon, Nevada, recently received their "Golden Bear" nugget pins indicating membership in the California Federation of Mineralogical Societies. They affiliated with the federation last spring. Mrs. E. C. Gibbs, who was hostess for the evening, discussed agate as the study topic for the evening.

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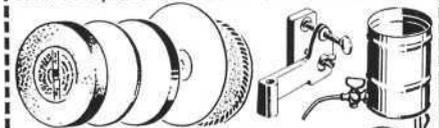
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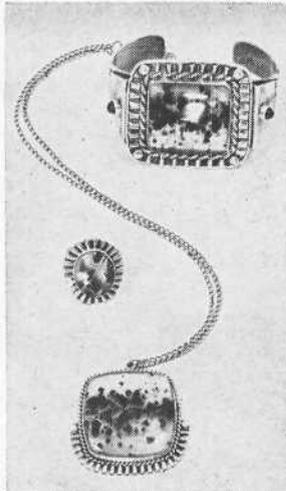


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AMONG THE ROCK HUNTERS

Jasper, agate and petrified wood were collected by members of the Fresno Gem and Mineral Society on a July 10 and 11 field trip to the Castle Butte area east of Mojave, California. Clarence Yoder supervised the trip. In other recent activities 100 club members heard a talk by Mrs. Mary Ponsart, Fresno interior decorator, at the home of the club president, Mrs. Minnie LaRoche. The club accepted an invitation to present an exhibit of gems and minerals, Indian artifacts and fossils from San Joaquin Valley area in the Fresno District fair, Oct. 1-10.

PERIDOTS: From San Carlos Indian Reservation. Mine run \$15.00 lb. (16 oz.). Add 10 percent tax unless for resale. If for any reason not pleased money will be refunded. Luther L. Martin, Box 1922, Globe, Arizona.

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SANTA CLARA VALLEY ROCKHOUNDS ORGANIZE

Recently 83 members closed the charter of the new Santa Clara Valley Gem and Mineral Society. The enthusiastic members will meet on the fourth Wednesday of each month. Officers are Harold Pearsall, president; Myrtle Cordoza, vice-president; Jack McManammy, secretary and Lester Ellis, treasurer.

SHOW PLANS PROGRESSING

Plans for an October Gem and Mineral Show in Eureka, California, are progressing nicely, reports the Humboldt Gem and Mineral Society. Feature of a recent meeting of the society was a "bragging session" in which several members showed favorite specimens and told the stories behind them. Percy Hollister reported on the recent Gem and Mineral show at Grants Pass, Oregon.

Victor Arcienega spoke at a recent meeting of the Glendale Lapidary Society on gem stone inclusions and their stories. He illustrated his lecture with colored slides taken through a microscope.

Members of the Delvers Gem and Mineral Society, Downey, California, planned a picnic July 25 to Dana Point, located a few miles south of Laguna Beach. At the site for collecting are shells, minerals and beach stones. In one of their most entertaining programs of the year, the society recently enjoyed a talk by M. J. Hebner, San Fernando Valley Mineral and Gem Society member, on his trip through Mexico. He illustrated his talk with colored slides showing the beautiful country and showed specimens he collected.

The Wasatch Gem Society, Salt Lake City, Utah, planned a social gathering at the home of the George Cahoons for its July meeting. The evening program was to include showing of colored pictures of the Uinta Mountains by John Trunnel and a brickyard tour, according to Hazel Saylor, secretary.

President Jack Schwartz introduced a new feature at a recent meeting of the Montebello Mineral and Lapidary Society, Montebello, California. It not only increases members' participation but will add to their mineral collections. As a part of the program, a member describes a field trip he has taken and distributes specimens collected on the field trip to all members. Introducing the new feature, Woody Dickson reviewed a trip to Afton Canyon and talc mine and handed out talc specimens. Featured speaker for the evening was Dave Yeomans, who showed a variety of fluorescent and phosphorescent material under long and short wave lights.

A picnic and search for opalite at Oak Grove park was the July field trip planned by the San Fernando Valley (California) Mineral and Gem Society. Louis Scheidt was trip leader and D. Parsons was to be field trip chairman. At regular meeting Wallace W. Binford, registered jeweler, was featured speaker. His talk, on famous diamonds, was illustrated with a film.

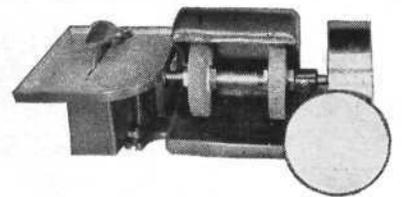
A lecture on "The Geology of the Grand Canyon at Arizona" by Professor Victor Arcienega was planned for the July 7 meeting of the Santa Barbara Mineral and Gem Society, Santa Barbara, California. Colored slides were to be used to illustrate the talk.

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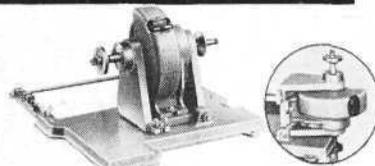
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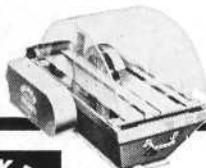
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A July 31-August 1 field trip to the Ventura County camp grounds was planned by the Long Beach Mineral and Gem Society, Long Beach, California. Space for the society was reserved ahead of time. Members expected to find sagenite, agate, opalite, marcasite, aragonite, chalcedony roses and quartz crystals.

A July 4, weekend trip to the Pow Wow at Vantage, Washington, was highlight of July activities for the Tacoma Agate Club, Tacoma, Washington. Members enjoyed petrified wood and artifact hunting, lapidary demonstration, silversmithing, amateur and commercial displays and swapping tables. In conjunction, some members also planned a trip to Red Top.

**FIELD TRIP TAKES GROUP
TO FAMED SAN JUAN AREA**

Climaxing their summer field trips, members of the Colorado Mineral Society have scheduled a three-day journey to the San Juan region September 4, 5 and 6.

On the agenda are hunts for a variety of gems and minerals and an excursion on the famed Durango-to-Silverton narrow-gauge railroad. On the old-time train they will travel up the spectacular Canyon of the Rio De las Animas Perdidas (river of lost souls), past the 14,000-foot spires of Needles Mountains to terminus in a beautiful highland bowl at Silverton. Rockhounds will be able to hunt for gold in La Plata Canyon, agatized dinosaur bone in McElmo canyon, carnelian at Baker Dome and gem garnets, wire silver and amethyst quartz in Needle Canyon, accessible only on the train.

Two August field trips were planned by the Colorado Mineral Society, on August 15 to the Sedalia area and on August 22 to the George Harvey Summer cabin at Brainard Lake. In the Sedalia area the hunt was to be for Chalcedony, agate, petrified wood and more. There are pyrites and sulphide ore at Brainard Lake.

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Grit Size	1 Pound	5 Lb. Lots	10 Lb. Lots	25 Lb. Lots
80, 100, 120, 18, 220	\$.83	\$.52	\$.39	\$.30
2F (320), 3F (400)	.38	.57	.41	.32
Graded 400	1.09	.73	.57	.48
Graded 600	1.35	.94	.78	.69

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- 10" wide, 5 ft. long— 2.00; 150-foot roll— 39.77
- 12" wide, 5 ft. long— 2.25; 150-foot roll— 47.70

Wet Rolls

- 3" wide, 10 ft. long—\$2.00; 150-foot roll—\$21.60
- 10" wide, 40 in. long— 2.60; 150-foot roll— 71.25

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Wet		Dry	
6" 5 for \$1.00; 25 for \$ 3.90		8 for \$1.00; 25 for \$ 2.25	
8" 3 for 1.10; 25 for 7.00		5 for 1.00; 25 for 4.10	
10" 2 for 1.15; 25 for 11.00		3 for 1.00; 25 for 6.45	
12" 2 for 1.65; 25 for 16.00		2 for 1.00; 25 for 9.45	

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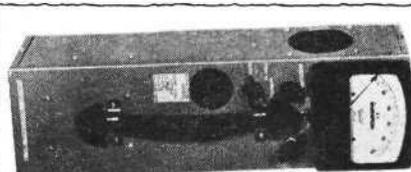
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MINERALOGICAL SOCIETY TABS NEW DIRECTORS

Seven new board of directors members were elected at the annual meeting of the Mineralogical Society of Southern California, according to the society's July bulletin. They are Bill Oke, Milton Wise, Don Stevens, John McCarty, Marna Gilbert, Wendell Stewart and Jack Rodekohr. Besides an excellent dinner, members enjoyed raffles, grab bags and sales and an auction. For the "Best in the Show" display, president's trophy went to Willard J. Perkin. With the exhibits divided into five classes, according to the number of years exhibitors had been members of the society, other winners were: Ted Hurr, class E; Jim Hurley, class D; H. W. Scott, class C and Bruce Lee, class B.

"Identification of Gem Stones," was to be the subject of a talk by Joseph Rayce, certified gemologist, at the July meeting of the Pasadena Lapidary Society, Pasadena, California. Easiest method of identifying gems through physical and optical characteristics was to be presented in the talk and demonstration. Members planned on entering exhibits in the August 13-15 Lapidary association show at Shrine Exposition Hall, Los Angeles.

ANSWERS TO QUIZ

Questions are on page 29

- 1—True. 2—True. 3—True.
- 4—True.
- 5—False. Volcanic glass is the name given obsidian.
- 6—False. Date palms were imported from the old world after white men settled the Southwest.
- 7—True. 8—True.
- 9—False. Salt River Valley gets its water from Roosevelt dam in the Salt River.
- 10—False. The plumes of the Salt Cedar are lavender.
- 11—True.
- 12—False. Aspen loses its leaves when frost comes.
- 13—True. 14—True.
- 15—False. The capital of Nevada is Carson City.
- 16—True.
- 17—False. Escalante was named for a Spanish padre.
- 18—False. The Fairy Duster is a perennial shrub.
- 19—False. Cochise was a leader of the Apaches.
- 20—False. Borrego Desert State Park is in Southern California.

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AMERICAN PROSPECTORS CLUB ELECTS OFFICERS

Thomas E. Maxey was recently named president of the American Prospectors Club, 1124 West 92nd St., Los Angeles, replacing retiring president, Stanley P. Skiba. Other new officers are LeRoy Moriarty, vice-president; Robert Roma, secretary and Stanley P. Skiba, uranium consultant. Retiring besides Skiba are T. O. Cooley, vice-president and Peter J. Rush, secretary. The club has recently opened associate memberships for people living outside the Los Angeles area.

The Santa Fe Gem and Mineral Club planned a field trip July 24 and 25 to Born's Lake, Colorado. Gems members expected to find included blue chalcedony nodules from marble to fist size and moon stones.

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"We use the Mineralight in all our prospecting. It has been very valuable in locating uranium."
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October 30 and 31 are the days scheduled for the gem and mineral show of the San Antonio Rock and Lapidary Society, San Antonio, Texas. It will be held at the Witte Museum. Feature of the July meeting of the society was to be a lecture by Bill Seimer, head of the Department of Geology, St. Marys University.

Thirty to 50 new members for the Hollywood Lapidary and Mineral Society during the next year was a goal listed by President Glenn Elselder in the July issue of *The Sphere*, the society's publication. He pointed out that lapidary and mineral hobbying can be as inexpensive as a person wants to make it and that it provides more enjoyment per dollar than almost anything one can do. He urged members to bring friends to the meetings. The July program planned by the Hollywood, California, rockhounds was a talk and demonstration by Rudolph von Hune of the California Institute of Technology.

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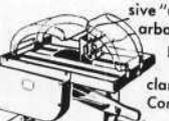
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The Montebello Mineral and Lapidary Society, Montebello, California, has slated its first annual "Rockhound Roundup." It will be held November 6 and 7 at the Taylor Ranch House, 737 North Montebello Boulevard, Montebello. Members planned an excellent exhibit of minerals, educational displays, trading tables, door prizes, specimen cards and more.

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Drills finest holes at high speed and saws discs up to 1 1/2". Exclusive ramrod action prevents core plugging. Fully automatic. \$68.80



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Compton Gem and Mineral Club, Compton, California, planned to hold its fifth annual Gem and Mineral exhibit Saturday and Sunday, July 17 and 18. Many prizes were to be given. In other July activities Vic Arcienega was scheduled to speak on the geology of the Monterey Peninsula and Morgan Hill, California at regular meeting.

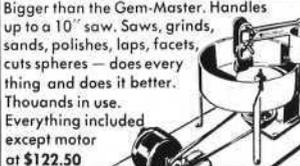
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For the first time, rockhounds of Fresno County, California will have an entire building to display their exhibits in during the county fair. Four commercial dealers have also been allotted space. Heading the committees for the annual show are Mr. and Mrs. John Breckon, reception committee; Mr. and Mrs. Carl Noren, display; Mr. and Mrs. Harold Streit, decoration; Ernest Ison, electrical effects; Paul Sorrente, display cases and Mrs. Edmund Michaelis, brochure.

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The annual San Diego Mineral and Gem Society pot luck dinner was planned for August 15 at the Lucky C. Ranch in Alpine. Donated material was to be sold and raffles were to be held.

A bus trip to Michigan copper country was planned for July by 34 members of the Minnesota Mineral Club. Besides copper they planned to look for chlorastrolite, datolite, laumontite, epidote crystals and more.

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AMATEUR GEM CUTTER

By LELANDE QUICK, Editor of The Lapidary Journal

It is a matter of common record that almost every important discovery of gem minerals ever made in any corner of the world has been made by men in search for gold. If the gems have not been discovered while searching for gold then they have been accidental discoveries made by persons who were not searching for anything. The word gems used in this sense does not include gem materials favored and gathered by the rockhounds which are regarded as "non-commercial" by the various mining bureaus, such as agate, jasper, petrified wood, etc.

But just as the old-time gold prospector discovered many important gem deposits, such as the opals and sapphires of Australia, the jade of Alaska, etc., many of the rockhounds of today, looking for the common gem materials are finding valuable gem deposits such as the jade locations in Wyoming and California. But more important, the rockhounds are now stumbling upon deposits of the tungsten and uranium minerals and there is little doubt but that many collectors in their search for agate all over the west will overlook valuable mineral deposits during the next year because they fail to recognize the drab but valuable rocks containing these strategic substances.

It would be a wise program chairman of any club therefore who would select a competent speaker for one of the first Fall programs to tell the club members what signs to look for during the hundreds of field trips that will be taken when the weather cools. To aid any speaker who wishes to take on the assignment we recommend the following reading:

Uranium and Fluorescent Minerals by H. C. Dake (\$2.00). This is a bible for the uranium prospector and describes the use of the various instruments used in connection with locating uranium and fluorescent rocks. (Procurable from our Desert Crafts Shop).

Prospecting for Uranium — a 120 page booklet procurable from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. for 55c.

Several complete bulletins of the Division of Mines of California, a list of which will be supplied by them by writing to Ferry Building, San Francisco 11, Calif.

It should be remembered that if any reader has qualms about discovering uranium minerals because of their use in destructive weapons the probability is strong that they will never again be used for that purpose but the uranium will be used for the saving of mankind rather than his destruction. Uranium in the future will no doubt be used chiefly in the development of cheap electric power and the manufacture of radioisotopes in the treatment of many diseases. New uses are being developed almost daily for the use of uranium products in industry. For instance, the control of ink used in printing is a new development. Ink is so automatically controlled that some magazine pages will appear dark while others are gray, although the process is in the experimental stage and not being used by this magazine.

There are some facts with which the rockhound should be acquainted before he starts to look for uranium. Uranium is a metal. Like other metals, such as copper, lead and iron it combines with oxygen, phosphorous, silicon, arsenic, sulphur, etc. to form many different minerals. Some of these minerals are important as ore minerals for uranium while others are only interesting as mineralogical curiosities. In most places where uranium is found, the mineral species in which it occurs can be determined. In some cases uranium has been detected in some rocks in which the exact mineral could not be identified. This is especially true of uranium found in certain sedimentary rocks.

Where to look for uranium? Almost anywhere there are rocks. Uranium deposits occur in all the major types of rocks—igneous, sedimentary and metamorphic. In the igneous rocks it usually occurs in veins. In the sedimentary rocks it usually occurs in carnotite deposits and in phosphorous, asphalt and limestone formations.

Finding uranium bearing minerals is not difficult but few deposits have ever been found to be of commercial value. Uraninite, pitchblende and carnotite are the most important uranium minerals and details of these deposits are available in many standard textbooks of mineralogy. Reference to almost any good book on mineralogy will give detailed description of these minerals so that the rockhound can recognize them in the field.

Experience indicates that the granitic rocks and the many volcanic and metamorphic rocks do not contain uranium in sufficient amounts to make their mining profitable. The rockhound should then learn to be aware of the sedimentary formations and any lecturer on the subject before society meetings should dwell at length on the recognition of the sedimentary formations.

The rockhound should not have too much difficulty in recognizing uranium ores because his eye is trained to look for color in rocks. In a great many instances the uranium minerals are brightly colored, yellow or green, and even the black varieties have a characteristic brightness and sheen that is recognizable. In our lapidary collection we possess a polished slab of uranium ore from New Hampshire that is very colorful and causes a lot of comment by those who see it. It is mainly a pistachio green with bright orange freckles.

Radium ores are radioactive and therefore portable counters have been devised which detect and measure the radioactivity given off by uranium and other radioactive elements in the rocks. The portable counter has become a standard piece of field equipment that has given more of a meaning to the word rockhound. We find that even a short discussion of this subject cannot be condensed in just one installment of this column so we will continue it in the next issue. At that time we shall describe the various kinds of equipment and their cost and tell you how to make a simple chemical test in the field for use with an ultraviolet lamp.

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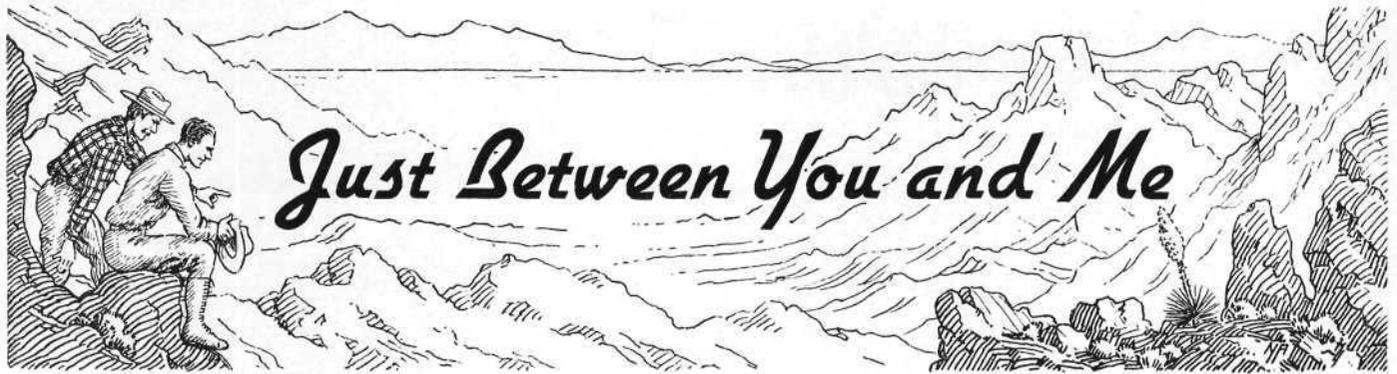
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By RANDALL HENDERSON

IT WAS INTERESTING to note that during the nation-wide heat wave in July when, according to newspaper reports, there were 278 fatal heat prostrations in the United States, only three of the deaths occurred on the Great American Desert—the hottest place of all.

This merely confirms what desert people have known all along—that it is humidity, not high temperature, which makes the heat unbearable, and hazardous. We have much less humidity on the desert than in the middle west or the seaboard states—hence we suffer less when the thermometer goes on a rampage.

During many summers on the desert I have learned two simple rules which help keep my energy at par: One is deep breathing, and the other is to drink plenty of water. Alonzo W. Pond in last month's *Desert Magazine* made clear the need for drinking lots of water—even more than the thirst requires. Deep breathing also is important. It requires a conscious effort—when the days are hot and the humidity is high—but the response of the body is almost instantaneous.

* * *

Recently I took my 7-year-old grandson on a camping trip into the mountains, and gave him his first lesson in the art of cooking flapjacks over an open fire. There will be many more lessons before he becomes a proficient camp cook—even in the making of hotcakes. For camp flapjacks require infinite patience and skill—and not the least of the problems is the maintaining of a proper fire beneath the frying pan.

Of course the modern way is to take along a Coleman stove—and then one doesn't have to worry about the fire. But I am going to teach my grandson to do his camp cooking the hard way—just as I am going to teach him to do many other things the hard way.

As a student of history, I am sometimes frightened by what I see going on around me—people using their high wages and big incomes to buy ease and luxury.

Almost without exception the civilizations of the past have fallen because their people grew too rich—and too soft. Sooner or later some hard hungry race of men came along—and that was the end of another chapter in the story of man's climb up the ladder of evolution.

I have faith that the human species will climb that ladder eventually. But I am afraid we are not making much progress in this generation. We need the leadership of more men who have been taught to do things the hard way.

This has been an unprofitable summer for the rivermen who run boat expeditions on the San Juan and Colorado Rivers. Because of the low stage of the water, due to drouth in the headwaters region, most of the river trips were called off.

The only chartered expedition to go through Grand Canyon was one piloted by Georgia White and her husband, "Whitey."

They took three rubber life rafts with 10 passengers from Lee's Ferry to Boulder City in 21 days—making portages where there was not enough water to take loaded boats through the rocks exposed in the rapids.

If it were not for the storage of water behind Hoover Dam, the farmers in the lower Colorado River basin—Yuma, Imperial and Palo Verde Valleys—would have suffered terrific crop losses this season.

* * *

This month we are experimenting with color on some of the inside pages of *Desert Magazine*. We hope you'll like it, for if our plans work out there will be more of it in the future.

The *Desert Magazine* staff always welcomes suggestions from its readers as to changes and improvements which may add interest to these pages. It is not always possible to carry out all the suggestions. Some of the rockhounds would like to see more space devoted to their hobby. Historians would prefer more historical features. The botanists, the archeologists, the lost mine hunters, the ghost town fans, the mining fraternity—each of these groups has a special interest to be served. The goal of our editorial staff is serve as many of these interests as possible.

Our favorite reader is the one who lives in a big world intellectually—who is a student with an eager interest in all that goes on, and who is no less intrigued by the life of courageous Josie Pearl in her little miner's shack far off in Nevada (last month's *Desert Magazine*) than in the goings on in a Navajo hogan on the reservation.

After all, the most interesting thing about the desert country is the people who live on it. In the future we will be giving more space to the fast-growing fraternity of Jackrabbit Homesteaders—for they are becoming a very important element in our desert population.

We like our desert country and all the people who share our interest in it—and we hope in the months ahead to create a little closer bond of common interest among them.

BOOKS of the SOUTHWEST

NEW HANDBOOK HELPS IDENTIFY ANIMALS

For those desert dwellers, or visitors, who would become acquainted with the wildlife of the arid region, the Southwestern Monuments Association recently has published a paper-covered handbook, *Animals of the Southwest Deserts*, which greatly simplifies the problem of identification.

The book, written by George Olin and illustrated with pen sketches by Jerry C. Cannon, gives the essential information necessary to tell the difference between a kit fox and a gray fox, a mule deer and a fantail deer, the most common rodents, and in fact all the more common desert animals.

Forty-two of the mammals of the Southwest are described — ranging from the tiny desert shrew to the big-horn sheep and each is pictured in line drawings. The tracks or footprints of many of them also are illustrated, and the zone of their habitat indicated on small maps for each species.

This is a companion book to *Flowers of the Southwest Deserts*, *Flowers of the Southwest Mesas*, and *Flowers of the Southwest Mountains*, previously issued by the Association and sells at the same popular price—\$1.00.

The Southwest Monuments Association is a non-profit organization pledged to aid in the preservation and interpretation of the Southwest and its plant and animal life. The book is for both the adult and the juvenile reader.

Published by the SMA at Globe, Arizona. 112 pages with line drawings, index, introduction. \$1.00.

A MOUNTAIN MAN HELPS OPEN THE GREAT WEST

Antoine Robidoux was one of those few hundred mountain men who ranged over the western half of North America in the first half of the 19th century trapping beaver and blazing trails which opened the way eventually for the settlement of the West.

William Swilling Wallace gives Antoine Robidoux a spot in history along with Jim Bridger, Clyman, Fitzpatrick and others in his book *Antoine Robidoux, 1794-1860*.

A Biography of a Western Venturer, the book pictures Robidoux, a member of a famous St. Louis family, as a Santa Fe business man whose fur trading took him over the entire "Intermontane Corridor." He was responsible for establishment of several forts.

Too, he was a soldier, serving in the War of 1812 and with General Stephen Watts Kearny in his campaign to the west in the war with Mexico, after financial calamity, Indian hostility and decline of fur trade ruined his business.

Published by Glen Dawson, Los Angeles. 59 pages. \$5.00.

LIFE IN SONORA 200 YEARS AGO

To a Jesuit missionary in the 1750s, Sonora, Mexico, was a vast fascinating wilderness inhabited by Seris, Opatas, Pimas and other tribesmen, and a few Spanish ranchers and miners inadequately guarded by small garrisons of soldiers.

It was a grand adventure for Ignaz Pfefferkorn, a German priest, when he was sent to the new world to convert the natives to Christianity and he kept copious notes of his experience which later, following the expulsion of the Jesuits from Spain and its colonies in 1767, were compiled in two volumes titled *Description of the Province of Sonora*. The recently published English translation of Pfefferkorn's work is titled *Pfefferkorn's Description of Sonora*.

Translated by Theodore E. Treutlin, professor of history at San Francisco State College, the padre's story of his 11-year missionary sojourn in Sonora not only is informative and entertaining reading, but it has significance for students of American history and anthropology in the western hemisphere.

Father Pfefferkorn was interested not only in saving savage souls, but he also was a keen observer of the plant and animal life, the geology and geography of his field. He was a likeable and enlightened man and subconsciously, his book was an autobiography as well as a description of Sonora.

Everything was not as Father Pfefferkorn would like to have found it, and he was somewhat dismayed by the native "indifference to things considered highly estimable by a European," but he was tolerant and faithful, and has given us an account which is a very important contribution to the literature of the Southwest.

This is a Coronado Cuarto Centennial publication, published under the Coronado Historical Fund by the University of New Mexico Press. Half-tone illustrations, maps, appendix and index. 329 pp. \$9.50.

LOST MINES IN THUNDER GODS' GOLD COUNTRY

Barry Storm gives lost mine seekers—and lost mine dreamers—much to excite their imaginations in his new edition of *Thunder God's Gold*.

Centering in the immense mysterious Superstition Mountains of Arizona, Storm's stories are of famous lost gold mines, beginning with the 1846 Peralta discoveries. Usually tied in with the first discovery are tales of the Lost Dutchman Mine, Dr. Thorne's Gold, Soldiers' Lost Vein, Ruth's Spanish Mine and many more that "fall just short of being accredited history or discredited legend."

The stories are steeped in Indian legends that Thunder Gods rule the domain, hide their wealth and curse those who come close to finding the illusive gold.

Barry Storm's own lost - mine searches give him an intimate acquaintance with the Superstitions, their gulchs and peaks and cliffs—and with evidence and clues of mines back to the time of Peralta.

An addition in the new edition of *Thunder God's Gold*, is a Treasure Hunters' Guide, giving basic geological information, and instruction in electronic ore finding, prospecting and interpretation of "signs of treasure."

Published by Storm-Mollet Publishing Associates. 167 pages. Profuse illustrations and maps. Ore Finding chart. \$2.75.

INDIAN LIFE TRACED IN DEATH VALLEY

Visitors to Death Valley, finding bits of pottery and arrow heads, often wonder how people could live in such a forbidding region with its extreme heat and apparent lack of food.

Actually there is substantial evidence, primitive tools found on the Manly Terrace (Ice Age Lake), that the area was inhabited as far back as the Pleistocene period.

Lydia Clements discusses these evidences, which she and her husband discovered, in *The Indians of Death Valley*, and also traces Death Valley Indians through the pre-history and historic periods.

Indians left many evidences of their life there, petroglyphs, pictographs, baskets and weapons, which, combined with geologic information on the area, reveal much of their culture.

Published by Lydia Clements. 23 pages. Four halftones and a drawing illustrate tools, petroglyphs, pictographs and Indian cairns. Selected reading list. 75 cents.

Books reviewed on this page are available at Desert Crafts Shop, Palm Desert



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