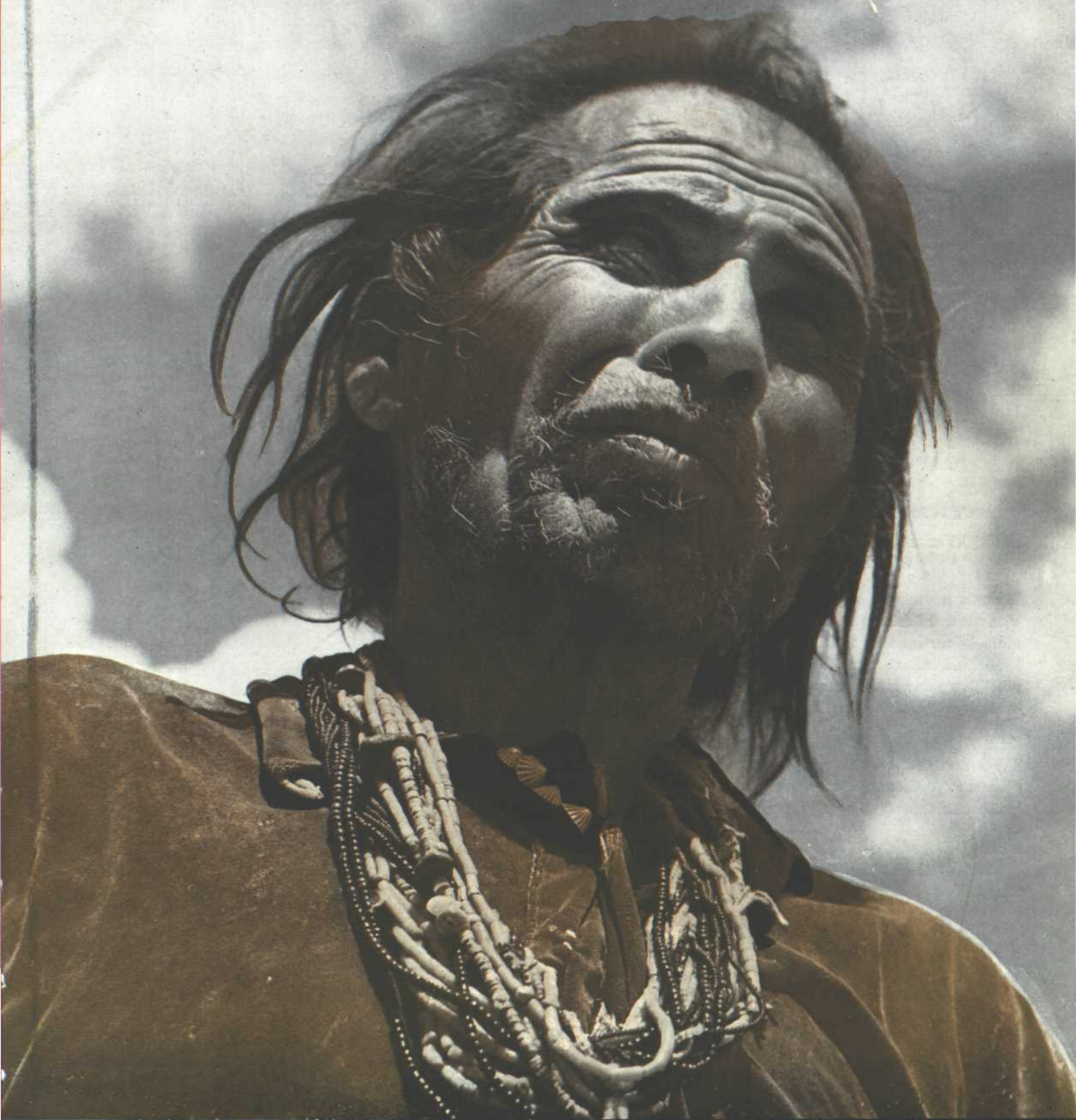


THE

Desert

M A G A Z I N E



AUGUST, 1940

95 CENTS

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DESERT Calendar

- AUG. 1-3 Non-association rodeo, Vernal, Utah.
- 2-4 Cowboy reunion, rodeo, Las Vegas, New Mexico.
- 3-4 Mark Twain day celebration at Mono Lake, California.
- 4 Smoki Ceremonials and snake dance, Prescott, Arizona. State fairgrounds at dusk.
- 4 Great Corn dance, Santa Domingo Pueblo, New Mexico.
- 5-31 Tenth annual field school of Indian art, Santa Fe, N. M.
- 6-15 Congress of History and Archaeology to meet in Albuquerque and Santa Fe, New Mexico. Public lecture sessions in University, Albuquerque; Bandelier centennial celebration at School of American Research, Santa Fe. Dr. James F. Zimmerman, congress president; Dr. Edgar Lee Hewett in charge of Bandelier program, Dr. Donald D. Brand chairman of anthropology sessions; J. Frank Dobie and Fred W. Hodge among principal speakers.
- 10 Feast Day of San Lorenzo, Picuris Pueblo, New Mexico.
- 10-11 Spanish Trails fiesta, Durango, Colorado. Rodeo and carnival.
- 10-11 Northern Arizona horse show, Prescott. Fairgrounds afternoon and evening.
- 13 Folk festival celebrating "Arrival of Kearny's Army August 13, 1846," at Mora, New Mexico.
- 14-17 Inter-Tribal Indian ceremonial, Gallup, New Mexico.
- 15 Feast day of Senora de la Asuncion, Zia Pueblo, New Mexico.
- 17-SEPT. 1 Southwest watercolors by Paul Gill, Museum of Northern Arizona, Flagstaff.
- 20-21 De Baca county festival in form of dramas: "Coronado's March to Quivira" and "Saga of Billy the Kid," Fort Sumner, N. M.
- 21-24 Non-association rodeo, Payson, Arizona.
- 22 Feast Day of San Augustin, Isleta Pueblo, New Mexico.
- 22-24 Annual Jamboree of Arizona Small Mine Operators association at Globe.
- 29-31 Rodeo at El Paso, Texas.
- 30-31 American Legion non-association rodeo, Cedar City, Utah.
- 31-SEPT. 2 Nevada State fair, Fallon. C. J. Thornton, fair manager.
- 31-SEPT. 2 Nevada rodeo, Winnemucca.
- 31-SEPT. 2 Santa Fe fiesta, Santa Fe, New Mexico.

Performances of Coronado Cuarto Centennial pageant will be given in the following cities during August: Tucsucari, N. M. Aug. 1-3, Dalhart, Texas Aug. 5-6, Prescott, Arizona, Aug. 16-18, Hot Springs, N. M. Aug. 24-26.



Volume 3

AUGUST, 1940

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Bridal Veil Falls, Havasupai Canyon, Arizona

By RICHARD H. TRIMBLE
San Bernardino, California

Awarded first prize in the monthly photographic contest conducted by the Desert Magazine. Taken with Eastman Kodak 3A, 1/25 sec., f. 16, Verichrome film, no filter; about 10 a. m.

Special Merit

The following photographs were judged to have unusual merit:

"His Highness" (Horned Lizard) by Richard F. DeLange, San Bernardino, California.

"A Strange World" (Young Desert Gopher), by Wm. B. Huston, Jr., Tucson, Arizona.

"Young Joshuas," by Sherman Ireland, San Bernardino, California.

San Xavier Mission

By L. H. PARKS
New Orleans, Louisiana

Winner of second prize in the June contest. Photograph taken with a Contax II 50 mm, 1/50 sec., f11, K2 filter on Panatomic X film, developed in Eastman DK 20.



Writers of the Desert . . .

It will be several months before DR. RUSSELL G. FRAZIER knows that his story about the discovery of the Crossing of the Fathers appeared in the July number of the Desert Magazine.

Dr. Frazier sent in the manuscript several months ago, just before he departed for the antarctic as a member of the Byrd expedition, with instructions to send the rejection, or the check, to his friend Charles Kelly, writer of Salt Lake City, who would relay it to Mrs. Frazier.

At present Dr. Frazier is located with the Byrd party at West Base in Little America. When not following his hobby of exploring the odd corners of the earth, Dr. Frazier is company physician for the Utah Copper company mine at Bingham canyon. He is a member of the Explorer's club of New York, Royal Geographic society, and has navigated the Colorado, Yampa, Salmon and other treacherous rivers.

The doctor is 43 years old and has three children.

D. CLIFFORD BOND, who supplied the text and photographs for the unusual sand painting feature in this number of the Desert Magazine is a professional photographer at Berkeley, California, specializing in natural color work.

Few photographers have ever won the confidence of the Navajo to the point where they were permitted to take pictures of the sand paintings made on the hogan floor at an actual healing ceremony. The Indians believe that the camera has an evil eye capable of exerting a malevolent influence, and perhaps interfering with the efficacy of the ritual.

Bond first made the acquaintance of the Navajo when he spent four years as field photographer on the reservation with a scientific expedition. More recently he revisited the region and renewed old acquaintances among the Indians and it was during this trip that he was permitted to witness and photograph the ceremonial. He has color pictures of the black and whites used in this issue.

The Desert Magazine has secured permission to use 20 of the best of Bond's Indian photographs, the cover picture on this month's issue being one of them. Others will appear on the covers and in the contents of future numbers.

Another contributor this month, who is new to Desert Magazine readers is BERTHA GREELEY BROWN of Seattle, Washington, who wrote the story about Charles Simpson and the Ginkgo Petrified forest state park.

Mrs. Brown is a housewife who writes occasionally because she enjoys it. She was born in northern Nebraska on a cat-



FRANK BECKWITH
*Photograph of a clay plaque made
of the Utah writer and publisher.*

tle ranch 80 miles from the nearest railroad. While most of her mature life has been spent in metropolitan areas, she is still essentially an outdoor woman. Her father was a sportsman who wrote fact stories for outdoor publications.

She goes out with her husband during fishing season, wades for hours in the pounding icy streams of the Northwest, casts a fly that fools the wariest trout. More recently the Browns have become ardent mineral collectors, and are members of the Gem Collectors' club of Seattle. They have traveled over two-thirds of the states in quest of semi-precious stones.

FRANK BECKWITH'S friends among the Ute Indians call him "Chief Sevvitoots" which translated literally means billygoat with hair on his face. The nickname is the penalty, or reward—according to how you look at it—for the scholarly goatee which adorns Frank's chin.

Anyway, the Utes have known Beckwith a long time, and they like him, and out of that friendship has come the material for "Glyphs That Tell the Story of an Ancient Migration" in this number of the Desert Magazine.

Beckwith publishes the Chronicle, a weekly newspaper at Delta, Utah, and between issues of the paper he collects fossils and Indian lore. These are his

hobbies and they have led him into some interesting fields of exploration. Smithsonian institute gave a fossil *Merostome* the name of *Beckwithia typa* in his honor.

Frank was born at Evanston, Wyoming, in 1876. His father wanted him to be a banker and gave him a start in that direction. But young Beckwith preferred the newspaper profession and at the age of 42 acquired a paper of his own. He does his own linotyping and often composes his newspaper and magazine stories on the linotype keyboard without going to the trouble of typing them first. His story in the Desert Magazine was composed that way, his manuscript merely being a proof of the type he had set. His articles have appeared in many national and regional publications.

MRS. LETHA M. OLSON who wrote this month's botanical story on the subject of Ephedra, is a resident of Fallbrook, California. Her hobby is wildflowers and desert plants, her special interest being desert flora. She not only writes on these subjects but is listed by California Garden Clubs, Inc., as a speaker on the wildflowers of Southern California.

MARY BEAL will have a botanical article on Squaw Cabbage in next month's Desert Magazine, and JOHN HILTON is preparing a field trip on the ancient Indian salt caves near Overton, Nevada. Whether this story appears this fall or winter depends on whether or not the caves are submerged this season by the flood waters pouring into Lake Mead.

ARTHUR WOODWARD, curator of history in Los Angeles museum, and a frequent writer for Desert Magazine, left during the early part of July for a month's trip to Mexico City. Woodward plans to spend his time in research work and field investigations in connection with the prehistoric Indian civilizations of the Mexican area.

One of the features scheduled to appear in an early fall issue of the Desert Magazine is HULBERT BURROUGHS' travelog to the Valley of Fire in Nevada. Burroughs took some exceptionally fine photographs of the Indian petroglyphs and odd rock formations in that fascinating region and will suggest a number of interesting side-trips for those who plan to visit that area.

Scheduled for one of the fall numbers of the Desert Magazine is NINA PAUL SHUMWAY'S story of Fig Tree John, whose name is a legend among old-timers in the Salton sea region of Southern California. So much misleading fiction has been written about the aged Indian recluse, that the Desert Magazine asked Mrs. Shumway to discard all the wild tales and ferret out the truth.

One of the unsolved mysteries of the Southwest is the meaning of the petroglyphs and pictographs left on the rocks in many places by tribesmen of a prehistoric period. Why were they put there, and what is their significance? Students of Indian lore have never found conclusive answers to these questions. Living Indians appear to be as much at sea as the white men, in seeking the solution.

Frank Beckwith, newspaper publisher at Delta, Utah — through his long-standing friendship with the Pahvant Utes, has been able to obtain a partial translation of one of the most interesting groups of glyphs known to exist. Here is the story — and the circumstances under which it was told to Beckwith by two very intelligent Indians of the Ute tribe.



Glyphs That Tell the Story of an Ancient Migration

By FRANK BECKWITH
Art reproductions by Norton Allen

ON the wall of my newspaper office in Delta, Utah, is an enlarged photograph of a huge basalt boulder, the smooth face of which is covered with a maze of Indian petroglyphs.

The photograph was taken at "The Gap" eight miles west of Parowan, just off the dirt road that goes to Lund.

I have spent many hours trying to decipher those strange symbols. A few of them resemble objects with which I am familiar. It is easy to see that this figure was intended to be a man, or woman, and that one a snake—and I could make a guess at some of the others. But for the most part they remained shrouded in mystery.

For 12 years I studied those mysterious markings. Who put them there? Why did members of some ancient tribe spend days and perhaps weeks etching with crude stone tools on the face of that rock? Surely, there must be a story — many stories of Indian life and drama,

and perhaps tragedy — in that strange maze.

Time after time I have gone to that picture — and then turned away completely baffled.

Then one day Joe Pickvavit of the Pahvant Utes came into my office. I have known Joe 14 years, have eaten at his home on the reservation. He has visited my home, bringing his chubby papoose for my wife and me to admire.

I like Joe, and he has sensed the sincerity of my friendship. He is a highly intelligent Indian and sometimes our conversation turns to problems of grave concern to him and his tribesmen.

Often I have seen him studying the picture on the wall — the petroglyphs. But if he knew their meaning he never shared that knowledge with me. There are some things in the life of an Indian too sacred to be told to a white man, even a friendly white man, and I asked no questions.

One afternoon Joe came in with his Chief, Lonnie Kauchaump—head man of

the Pahvant Utes. The Chief is a stalwart Indian, respected by reds and whites alike.

I was busy at the linotype keyboard when they walked in, and while they waited for me they turned to the photograph on the wall and carried on a subdued conversation.

I knew the presence of Kauchaump had a special significance, but it was not until later that I became aware the Chief had given permission to Joe to tell me the story of those petroglyphs — a story that I believe no other white man has heard.

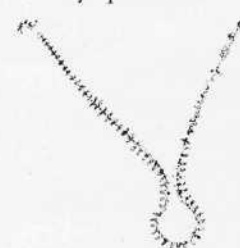
"You want to know what those signs mean?" Joe asked when I joined them. It was more of a statement than a question.

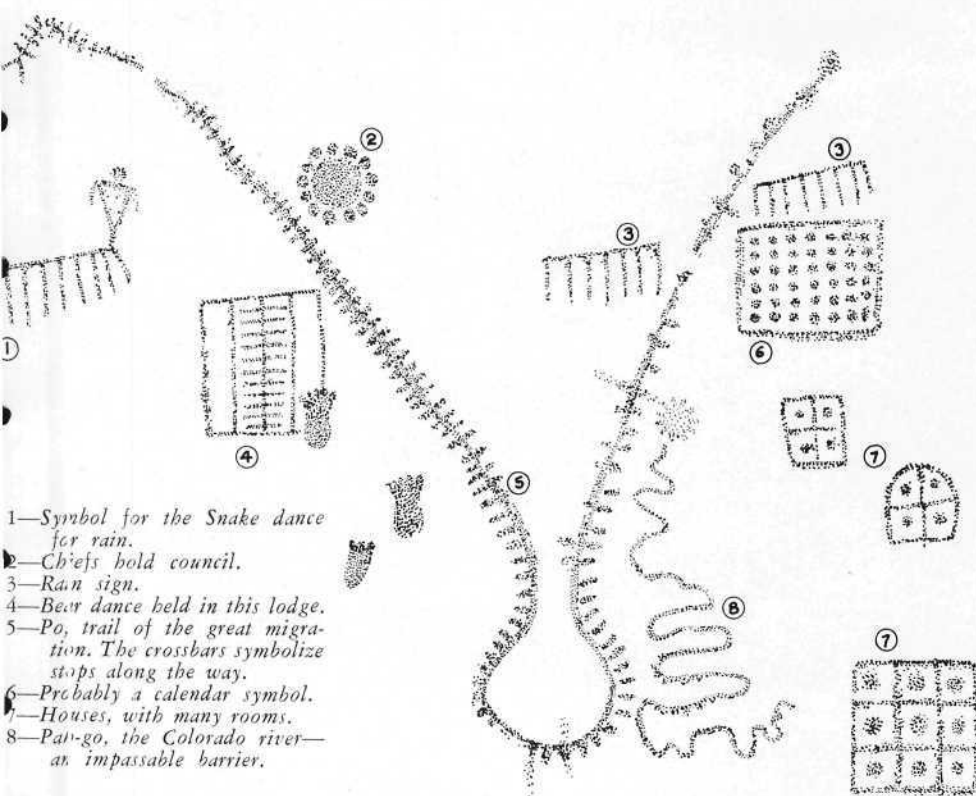
"I will tell you!" And without more ado he turned to the wall and waited for my questions.

I pointed with my pencil to the great loop which predominated the group of glyphs.

"Po," he answered promptly.

"What does Po mean?"





- 1—Symbol for the Snake dance for rain.
- 2—Chiefs hold council.
- 3—Rain sign.
- 4—Bear dance held in this lodge.
- 5—Po, trail of the great migration. The crossbars symbolize stops along the way.
- 6—Probably a calendar symbol.
- 7—Houses, with many rooms.
- 8—Pat-go, the Colorado river—an impassable barrier.

"Trail. Indian trail through country."
 "Well Joe, if that is a trail, what do the bars across it mean?"

"Stops. Maybeso day, maybeso more days."

"What for, Joe?"

"People got to eat. Long journey. Take lots o' time. Maybe stop to make jerky when kill deer." He put his finger on the glyph of an animal with horns.

I pondered the answer. Of course stops were necessary in a journey, a long journey, a migration perhaps involving the trek of a whole people.

Then I put my finger on the group of symbols with the snake at the left. I was sure of this snake—and I wanted to test Joe's knowledge.

His answer astounded me.

"Rain sing, Beckwith. Snake, rain sign and man altogether. A dance for rain with snake in mouth."

Joe saw the look of surprise in my face, and went on to make his meaning clear.

"Just like picture you got from Hopi. Dance a rain sing with snake in mouth *Weenoonse* (our old people) could not show it that good, so put snake here on side, then sign for rain and man near it. You savvy now? Dance with snake for rain like Moki."

As I jotted Joe's words in my notebook, I glanced at Chief Kauchaump. I suspect that he felt the white man was quite dumb. But he was resolved that Joe should teach me the stages of this

Indian glyph language, and he put his finger on a similar design adjacent to the other and nodded assent to Joe.

"Big rain sign. Long one. Follow close after other one—maybe first sing didn't get it. Lots men take part in dance."

I questioned his authority for "lots" when only two human figures were shown.

"Two just as good to say lots of men as 20, Beckwith. Indians all savvy that. Two enough."

"No snake this time," he added.

Chief Kauchaump pointed to two more of the "rake head" signs, and Joe exclaimed.

"Just rain sign. Snake not far from one. No snake on other one—just rain sign."

Joe was thorough in his teaching.

In my study of these petroglyphs over a period of 12 years I had formed definite opinions regarding some of them—and as a test of my own conclusions I pointed to a rectangular glyph with a ladder in the middle and an irregular blotch at one corner.



"Big dance lodge," I suggested, "like Sioux torture dance — thongs from pole tied to flesh . . ."

Kauchaump must have signalled Joe for the Indian hastily interrupted my explanation and pointed out my error.

On the left is a photograph of the basalt rock near Parowan, Utah, where the petroglyphs translated in the accompanying story, are located. Staff artist Norton Allen has reproduced, on the right, some of the glyphs which according to living Indians tell the story of the great migration of the "old people" of the Ute tribe. Dimly visible in the upper left corner of the photograph is the face of Shenobe the god who, through the medicine men, directed the destinies of the tribesmen. The Indians hold this deity in great veneration.

"Our people never danced that," he said. "Not ours. Beckwith, you see big bear paw there. It mean Bear dance lodge. You have seen it at White rocks reservation."

"No, I saw the Sun dance, but not the Bear dance."

"Well this Bear dance, bear paw say so. Make lodge nearly same—big poles, brush on 'em in places. People sit around inside. Dancers go up and back in middle. It Bear dance."

Next Kauchaump pointed to a circular glyph with dots around it, and looked at Joe.

"*Niavi ampagy*," he exclaimed. Joe was using Ute words purposely, that I might become familiar with them.

"What does that mean," I asked.

"Chiefs talk. All chiefs sit around in circle. Every chief have right to talk, and argue. No one shut out. When talk is over, then decide what to do. Indian pretty smart, Beckwith."

There were two more bear paws on the rock face, and I pointed to them.

"Do not know what for," he answered, and his frank admission confirmed what I have always thought about Joe—that he is prudent and honest in everything he tells me. He has too much integrity to draw on his fancy merely to satisfy the curiosity of the white man.



Beckwith's friend, Joe Pickyavit.



I studied the glyphs a few moments, then pointed to a wavy line to the right of the big loop which Joe had explained was a trail.

"You have been there lots of times," he said. "Pab-go."

"What does Pab-go mean, Joe?"

"The river. Big river. Pab-go it. Turn lots. Steep banks. Hard to cross. Beckwith, don't you savvy? Map. Come from up over here, like northwest. Turn and go up river."

Now the story was beginning to unfold, and I was eager to bring out all the details.

"Then what are these lines which extend from the bottom of the big loop—the trail?"

Kauchamp's eyes twinkled. He sensed my enthusiasm, now that the various parts in the jigsaw puzzle were beginning to fall in place, and it was a matter of pride to him that I should learn my lesson well.

Joe continued: "Send out two scout-

ing parties to find crossing. Couldn't find place, so come back."

"But Joe, there's Lee's ferry near, and Hall's crossing, and Hole in the rock. Father Escalante got across."

Joe interrupted me. "Our people had no horses then—those places boats or swim. *Weenoonse* had no horses. Women had child on back, another in hand, must find place to wade across, went up stream long way."

Now I saw the outline of the story in its entirety. The markings on this great rock were not merely a jumbled maze of disconnected symbols. They were the historical record of a people. They symbolized a trek—a great migration caused perhaps by drought or by warlike enemies.

They came from out of the northwest. They stopped many times along the route. They had a Bear dance. Eventually they came to the precipitous canyons of the Colorado—an impassable barrier. Their scouts found no crossing, and so they turned and headed slowly upstream, doggedly fighting for life in an arid region. They needed rain. Their brothers, the snakes, might carry the message to the gods—and so they held a snake dance.

It was all plain enough—for those who could understand.

The Utes believe this record was made by their own ancestors at some period in the distant past, and they hold this boulder with its petroglyphs in the same high regard that we have for our books of ancient history.

But while the outline of the story seemed complete, there were many other glyphs on the rock I wanted explained while the Chief was here to give his sanction.

I pointed to a rectangle with many dots in it.

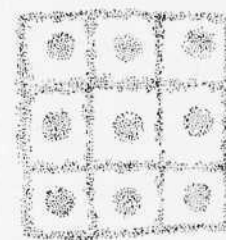


Joe hesitated, and then Chief Lonnie spoke up — this was his first direct statement.

"No one knows," he said. "Some say calendar sign to mark time. If that, then it is a record of numbers—days—moons — time. Who knows? Only guess at it."

I went on to the two bisected squares, and then the one divided into nine smaller rectangles, each with a dot in the center.

Joe gave the explanation for this:



"When *weenoonse* get across river and come to land of new home they built houses —houses of stone. Their houses all stone. Not like ones at Sevier, just willow shelters you call 'em."

"But Joe, four rooms, maybe nine—"

"Beckwith, I told you that. Indian savvy that. One room, one. More rooms, four or nine all same. Mean just as good as lots."

So that point was now clear. One object means one—but more than one indicates many, without attempt to depict the exact number. Ancient man, I reflected, was unlettered, and arithmetic never became an exact science with him.

We discussed some of the other symbols, and then I closed my notebook. I thought we were through. But Joe was looking intently at the upper left corner of the photograph. Then he turned and spoke to me in a voice vibrant with suppressed emotion.

"Beckwith, you have this picture long time. You study it lots. But I show you something you never saw."

As Joe spoke, Lonnie indicated the well-defined outlines of a man's face in the rock—a figure I had never discovered. "Shenobe. Shenobe watch man. Watch big journey that all goes right. Care for man. Do lots of thinking. Medi-

cine man in *khaneva* (teepee) close by. Mean lots to Indian."

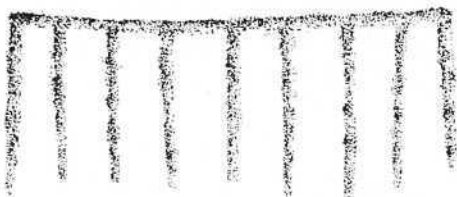
Joe's explanation was not a masterpiece of English—but he spoke with a reverence that carried deep significance. He was disclosing to a white man one of the innermost secrets of his tribesmen.

This was the likeness of Shenobe, the original guardian of the Indians on their great trek into an unknown land.

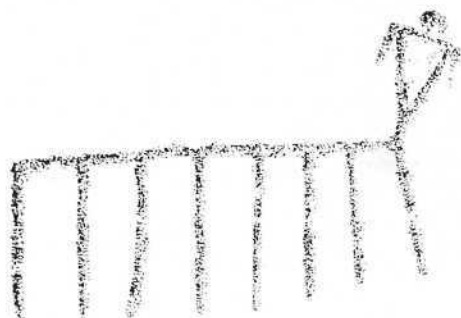
To understand the place held by Shenobe in the Ute religion, and the deep reverence the Indians have for this god, it is necessary to explain briefly the worship of these tribesmen.

Their great god is Tovach, their distant elder brother, silent, far removed from man, his name seldom spoken. Shenobe is a little brother of the great god, the mediator between the remote

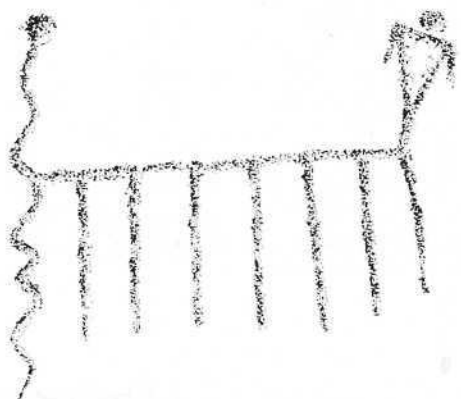
Joe Pickyavit explains the development of the Indian ideograph:



"Weenoonse (old-timer) put mark on rock. It mean rain—rain sign."



"He put man by sign, it mean man dance for rain—a rain sing."



"When he put snake by that, it mean man dance in rain sign with live snake in mouth, just like Hopi — a snake dance."



Chief Lonnie Kauchaump of the Pabvant Utes. Historical writers say that in the early '50s the Pabvant Utes could muster from 200 to 400 fighting men. Today the band has dwindled to 21 Indians, men, women and children. Chief Lonnie is an outstanding character, a natural leader, who watches, thinks, talks and acts for his tribesmen in a manner that has won for him the respect of both reds and whites. His nickname is "Choonk."

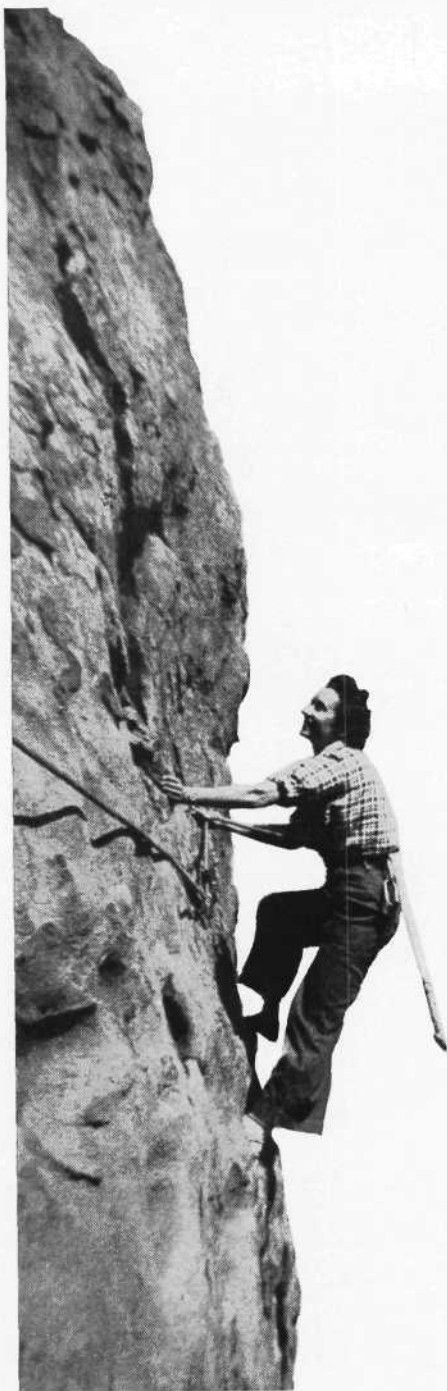
deity and man who dwells on the earth. Tovach causes the mountain mahogany to grow, but Shenobe taught man how to make bows from it. Tovach brought the bison into being, but Shenobe taught the Indians how to bring it down and make a blanket from its hide. Tovach created man, but Shenobe at one time lived with man and taught him the arts of pottery making, of fire, and led him on the great journey depicted on the rock. Also, it was Shenobe who inspired the ancient medicine men to chisel the record of their journey on the rock at The Gap.

No other group of petroglyphs of which I have knowledge is more signifi-

cant, or capable of more authentic interpretation than the record on this basalt boulder at The Gap.

Joe and Chief Lonnie asked no pledge of secrecy. They know that I am a newspaperman—and would guard their secret well, or would pass the information along to those who read my columns—according to their wishes. When they took me into their confidence, it was without reservation.

I am grateful to them for the information, and for the privilege of passing it along to those interested in the life and lore of the ancient tribesmen who roamed this desert country.



Ruth Mendenhall was photographed as she scaled the face of Stony point. Note the rope is passed through two carabiners in pitons driven in the rock. The other end of the rope is belayed securely by her climbing companion. Thus if she slipped she would fall only the distance between herself and the nearest piton. Mrs. Mendenhall was the only woman in the party which made the first ascent of Monument peak near Parker, Arizona, as described in the April '40 number of the Desert Magazine.

To some folks rock climbing is a pastime for lunatics—but to the 65 young men and women who belong to the rock climbing section of the Sierra club, theirs is the most fascinating recreation in all outdoors. When anyone suggests it is dangerous, they laugh. They have worked out a roping technique which according to their records makes the vertical face of a cliff safer than a traffic-crowded city street. Members of the club have made many thousands of climbs without a single fatality. Since rock climbing is gaining rapidly in popularity, the Desert Magazine asked Ruth Mendenhall, one of the most skilled woman climbers in the Southwest, to write an informative story about the proper technique for those interested in this sport.

There's a Technique for Climbing Rocks

By RUTH DYAR MENDENHALL

*M*Y husband John and I were making our first climb on the North Face of Strawberry peak in the Sierra Madre mountains north of Pasadena. Tied together with a climbing rope, we were ascending the cliff face by way of a gully which provided a steep and precarious staircase of ledges, cracks, and irregularities. We climbed gaily, for it was an early-summer day, with a fresh clean breeze across the cliff, and blueness drifting tangibly between us and the far ranges. The rock, flat as a wall tilted gently backwards, was pink, was white, was stained black and orange by water and lichen, was crowned with chalky overhangs against the timbered skyline. From high crevices in the still sunshine, sprayed delicate wild columbines.

Three hundred feet up, the route narrowed below a bulge of orange rock. For safety, John started to hammer a piton, or iron spike, into a crack near the base of the bulge. Without warning, a massive wedge of rock suddenly grated and split loose. Weighing over 100 pounds, it hung there in the crack directly over our heads, supported solely by the wobbling slender spike. John was balanced on minute nicks in the rock right beneath it; I was 10 feet farther down, in a shelterless crack, protecting John with the rope.

He couldn't climb higher without touching the rock and probably knocking it off to wipe us both from the cliff. We couldn't retreat leaving it balanced on the piton as a trap for anyone who might later make the climb. Finally John braced himself as best he could on his meager holds, and skilfully, cautiously extracted the piton with his fingers. He eased the massive rock down on his head and shoulders — and heaved it outwards.

Clearing us, it went thundering and splitting down the cliff, fragments exploding from it in powder, an odd sulphur smell drifting up again.

Far from being routed by an episode of such unusual treachery, we returned six times to the same cliffs in succeeding months.

Crazy to risk our lives that way? Well, those who climb high-angle rocks, with ropes, might admit with modest pride that they are crazy; but tell them they're risking their lives, and you'll let yourself in for a serious lecture on how safe their sport is — when practiced right. Because we had climbed a great deal, with stress on safety technique, our potentially grim mishap on Strawberry gave us only an anxious and sharply exciting moment.

The experienced rock climber is generally safer on the cliffs, where his security depends on his own skill and that of a chosen companion or two, than he is in the hurtle of traffic, where his life rests in the indifferent hands of heterogeneous, unknown speeders. The skilled climber (who for very love of his sport is probably, in addition, a capable mountaineer) can and does go farther, higher, and in greater security than the hiker. But he is not born with his ability to climb surely, nor does he learn how without time and effort. As in other sports, a definite method and technique underlie climbing. It requires the same learning, training, persistent effort, alertness, unrelenting "good condition," and practice, that it takes to be a topnotch golfer, swimmer, tennis player or quarterback.

The best way to learn rock climbing is to climb with those already experienced. Thus can the neophyte learn the technique which safeguards not only himself but also the others with whom he climbs — it is one sport where teamwork is the

very essence of method. For these reasons, and for comradeship because they are few in number, climbers band together.

The Rock Climbing section of the Sierra club is the focal point of Southern California's most enthusiastic cragsmen. There are about 65 climbers in the section at present, 20 or 25 of whom are experienced and avid climbers. There are similar groups throughout the western and northeastern parts of the United States.

I attended my first Sunday morning "practice climb" two years ago at Eagle Rock, near Pasadena. Over its yellow conglomerate sides, climbers were swarming, safeguarded by ropes tied about their middles, and held by other climbers, experienced and kindly kibitzing, braced in caves above. Many, after a taste of the sport at practice climbs, find they have no stomach for it. Others become eager for more of this thrilling sport.

In the Eagle Rock classroom I learned the primer facts of rock climbing: how to tie the seven-sixteenths inch manilla rope firmly about my waist, using a bowline at the end of the rope, or a butterfly knot in the center; how to protect a fellow climber with a belay, that is, to brace myself with the rope over hips and shoulders, taking it in or paying it out as he climbed; how to hold him with the belay in case he fell. The rope is the climber's protection only; he does not climb on it except in unusual circumstances. I learned the principles of balance climbing, using the feet as much as possible rather than over-exerting the arms; and leaning out from the rock. This same trick comes natural to a person walking down a steep hill, as he leans forward to keep his feet from slipping out from under him.

Having mastered the kindergarten of climbing, I matriculated to the higher grades. San Jacinto is a 10,805-foot peak about 100 miles southeast of Los Angeles, rising imposingly from the Southern California desert. From the timbered, boulder-studded southern flank, Tahquitz rock, an 800-foot steeple of granite, seems to float — hazy lavender, hanging in the sunset mists like a ghost from the old Indian legends that surround it; gracefully spirelike, serene, and untouchable. From other angles, the great rock hulks, or sprawls, or bulks, or towers, or juts up in successive sharp fins.

Four or five Sundays each summer, Tahquitz becomes a holiday playground for the Sierra club climbers. There they work on steep, sound, interesting rock, with none of the seriousness, even grimness, of longer expeditions into the high mountains.

One August evening, John and I drove from Los Angeles to the far end of the

Idyllwild public playground, a few miles from the rock. When we arrived, a dozen of our fellow climbers were leaving their campfire and disappearing into the woods to hidden sleeping-bags.

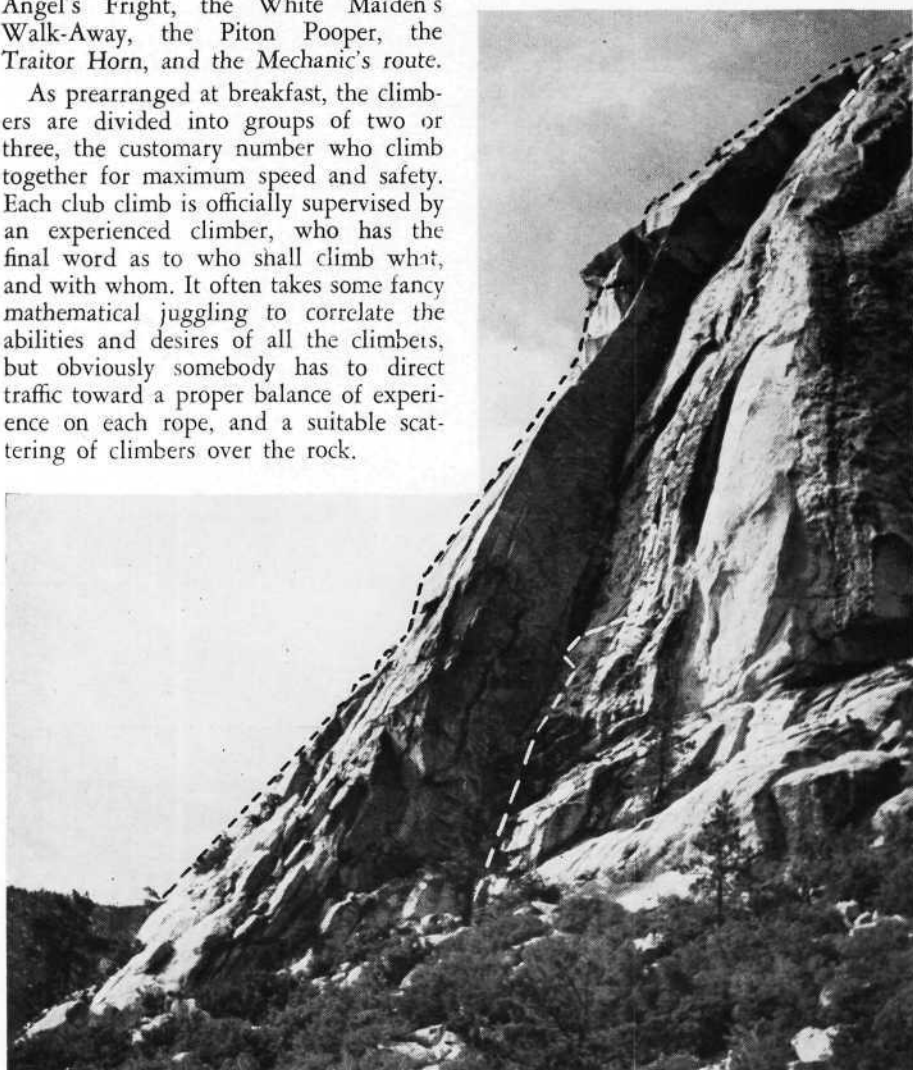
Sunday morning early, after a gentle awakening by yodels and bellows of "Quiet, please!", tousled, plaid-shirted climbers materialized from among the pines; ate their breakfast out of cups; stuffed rucksacks with climbing "hardware," ropes neatly coiled, lunch, tennis shoes and canteens; and drove as far as possible up the Fern valley road. For 45 minutes they plodded through dense dry woods, up the steep trail ankle-deep in dust, to the foot of the rock. There hiking shoes were changed for tennis shoes, used for climbing because the crepe soles are flexible and stick well to the rock.

Breaks or gullies up the sides of the towering rock provide "routes" of numerous degrees of difficulty for climbers of varying experience and ability. The climbs all bear such descriptive titles as the Trough, the Finger-Tip Traverse, the Angel's Fright, the White Maiden's Walk-Away, the Piton Pooper, the Traitor Horn, and the Mechanic's route.

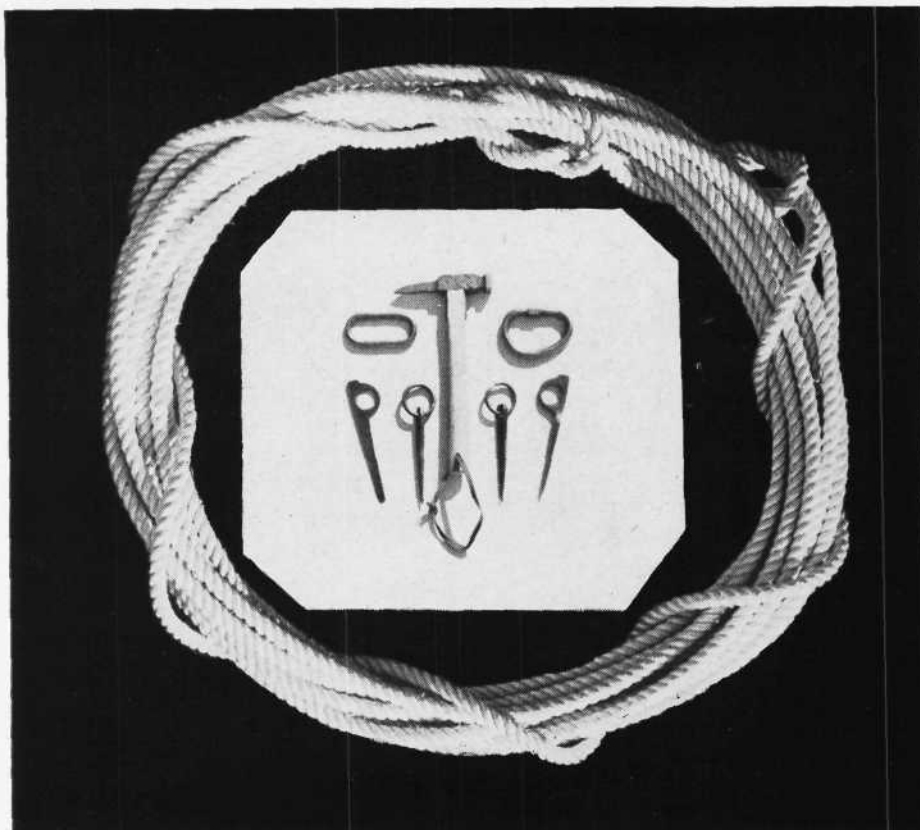
As prearranged at breakfast, the climbers are divided into groups of two or three, the customary number who climb together for maximum speed and safety. Each club climb is officially supervised by an experienced climber, who has the final word as to who shall climb what, and with whom. It often takes some fancy mathematical juggling to correlate the abilities and desires of all the climbers, but obviously somebody has to direct traffic toward a proper balance of experience on each rope, and a suitable scattering of climbers over the rock.

It is customary that the less experienced members make the climbs approximately in the order of difficulty. During my two climbing seasons, I had completed almost all the routes on the rock. Today John was to lead me up one of the most difficult ascents, the Traitor Horn. The climb started up a steep creek splitting the southwest face of the rock. At its foot we uncoiled our 80-foot rope (three men use a 120-foot rope), and tied the ends about our waists, John then climbed for about 70 feet, till he found a ledge where he could stop and brace himself in a belay. The distance between belay points on a climb is called a "pitch." While he took in the rope, I climbed to the ledge. There I braced myself in turn, and payed the rope out with care, not letting slack accumulate, yet avoiding a jerk, while John tackled the pitch above. This is the order of progression known as "consecutive climbing," one person moving at a time, protected by the belayer.

The leader who ascends first is not



Black dotted line marks the "Traitor Horn" route up Tahquitz rock, described in the accompanying story. The white dotted line is the "Mechanic's Route." This is regarded as the most difficult ascent on Tahquitz. Only three two-man ropes have made it—and none of them wanted to go again.



Tools of the rock climber—a coil of rope, piton hammer, carabiners and pitons. The pitons are steel spikes to be driven into cracks in the rock. The carabiner has a spring opening so it can be snapped into the eye of the piton. The rope is then passed through the carabiner. One of the carabiners shown in picture above has a lock-nut for added security. Three types of pitons are shown in the photograph.

only an expert climber, but also one able to correlate difficulties with his personal abilities. The rules of climbing, though unwritten and unrefereed, must be inflexible. Because the leader's responsibility is great, he must have complete authority during a climb. His is the greatest sense of exploration and conquest (especially on a new climb)—and also the greatest risk.

Should the leader fall, he would probably fall twice the distance between himself and the belayer below him. He has, however, a protection through the modern "blacksmith" school of climbing. He carries pitons, carabiners, and a piton hammer. If the leader sees before him a risky bit of climbing, he may select a crack in the rock and into it drive a piton, a flat iron spike about six inches long with a hole in the offset head. Through the hole the rope can be clipped by means of a carabiner, which is an oval ring with a spring opening. Thus nailed to the rock, should the leader fall, he would fall only twice the distance between himself and the piton, and his belayer would hold him by a sort of pulley system. The leader almost never falls, but nevertheless, through judicious use of pitons, many climbs can be made in safety that would be unjustifiable otherwise.

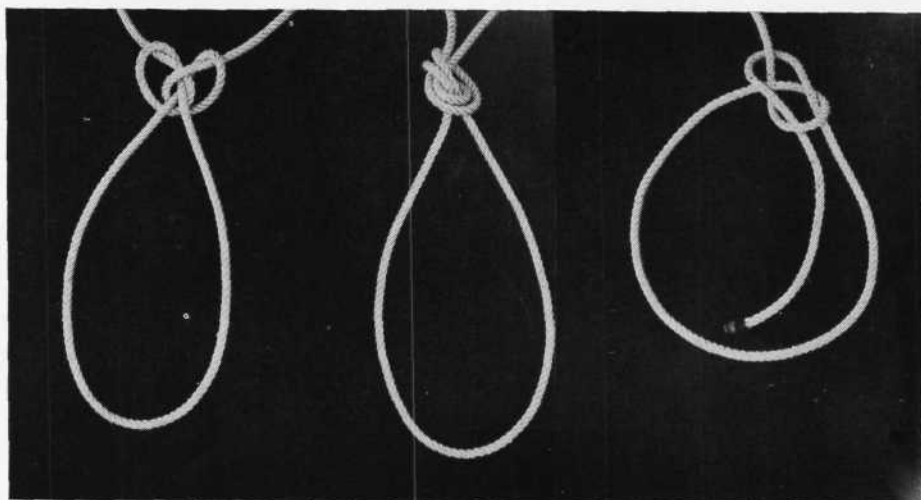
About 300 feet above the ground, the route angled sideways to the right, along

wickedly sloping ledges to which our feet would only just stick. John made the traverse and disappeared over the first horn-shaped projection of rock. I followed him, and rounded the corner with no small apprehension. Before us was the critical pitch for which the best climbers in the group had gained respect that season. Early in the year, one of the section's ace leaders fell off the pitch—an occur-

rence of importance as it turned out, only in that it proved the safety of the methods we preached and practiced. Though he was 300 feet above the ground, and about 10 feet above and 20 to the right of the belayer, he was only six feet above the nearest piton. He arched out backwards into space—but the piton, the carabiner, the rope and the belayer all held, and he received nothing worse than a jolt. Not long after, he made the same pitch without difficulty.

Previous climbers had left pitons in the pitch, as is customary on our often-climbed practice routes, so it was only necessary now for John to hammer them to make sure they were sound. On a high mountain climb, the last man on the rope knocks out the pitons and takes them up to the leader to use over. Because there was virtually nothing to stand on, I tied myself into a piton above me, and thus was anchored to the rock while I belayed John. He led the pitch, clipping a carabiner into each piton as he went and threading the rope through the rings till it angled over the rock like a spider web. He disappeared over a wall of rock and called triumphantly "Up!"

Ready to belay me, John shouted, "Come!" Because climbers are frequently out of each other's sight, a few terse, standardized signals are employed. I untied the rope anchoring me to the piton, responded, "Coming!" and edged along a ledge that slanted steeply and dropped off to precipitous slabs below. As I reached each piton, I unclipped the carabiner that held the rope to the rock, and fastened it in my belt. The angle of the ledge increased till it was too steep to support my feet. Here I reached out and seized a sling of rope tied through a piton, and swung over very thin air to the foot of a short, vertical rock face rising to the second horn. The sensation was a



Knots most used by rock climbers. On the left is the butterfly used by the experts to tie in the middle climber on a three-man rope. Center picture is another middleman's knot—used by those who have not acquired the fine art of tying a butterfly. On the right is the bowline used to tie in at the end of the rope.

little like standing inside an enormous box with three sides, the floor of the box sliding off into nothingness.

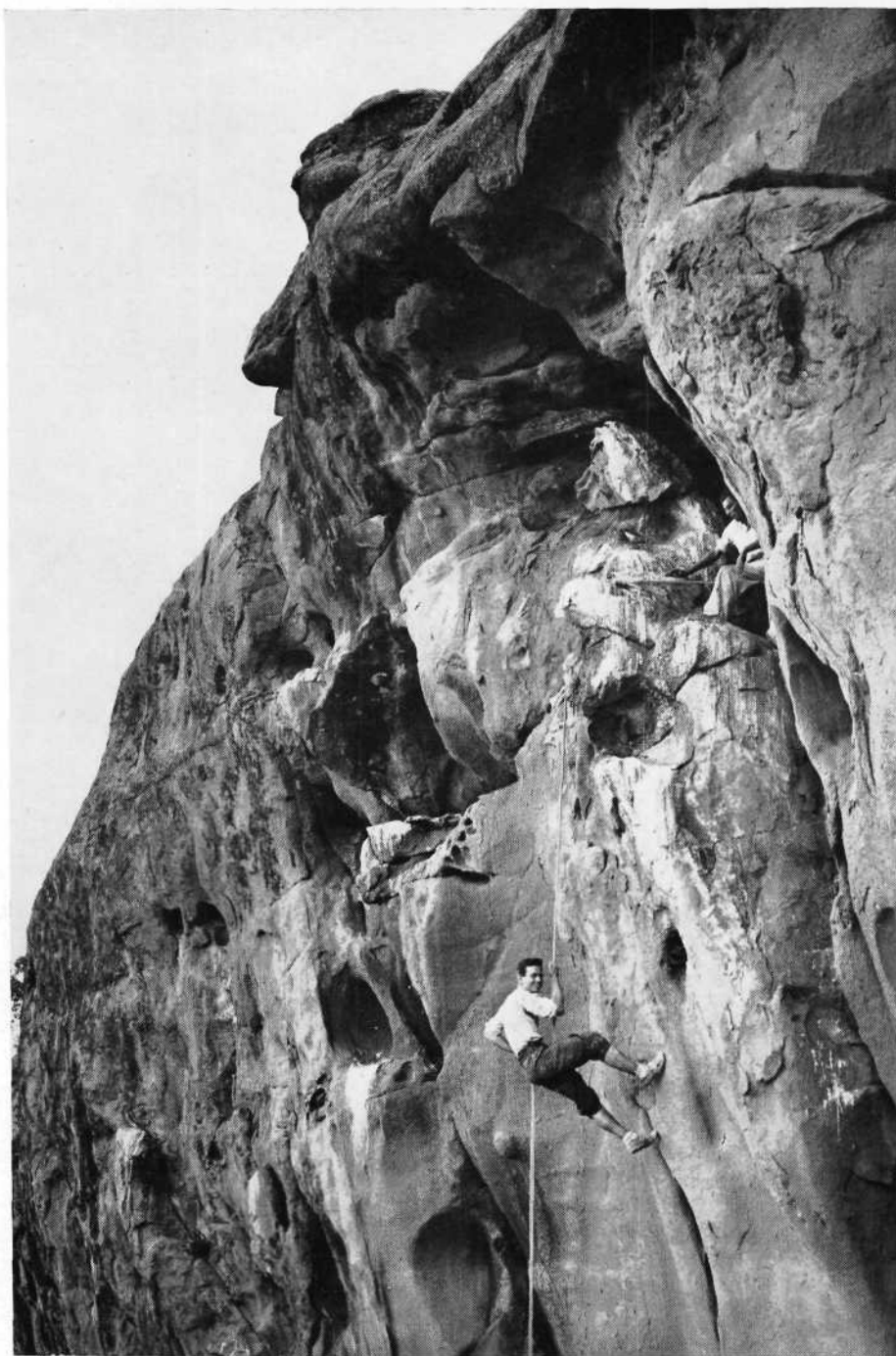
Up one wall of the box I "climbed on steel," as there was nothing much to step on, or hold to, except the pitons projecting an inch or so from the rock. This "direct aid" is the second use of pitons. I was perfectly safe with John's belay above me. The rock climber is not thrilled by the danger of his situation but, paradoxically by its safety. In the exposure and physical effort lay a throbbing excitement. Spread-eagled awkwardly over the piton ladder, I struggled upward, and then swung my right leg over the thin narrow jut of rock that curved out over the valley like a rhinoceros horn. Astride it, I could relax as if in a dining room chair, but I had to stand up, rising by inches with the utmost caution so as not to upset my balance. A toe pointed downward on either side of the horn, and before me bulged another wall of rock. When I was finally upright, I could just reach my hands over the top of the wall, which was crowned with some flat knobs.

Belt Buckle too Thick

I slid inchingly along to my left, my feet on a ledge actually wide enough to stand on except for the inconvenient fact that the bulk of rock at my chest pushed me out and out till only my toes could remain on the ledge — even when I wished I had turned my belt around to eliminate the extra thickness of the buckle. Just as I was sure I would be pushed over backwards, my fingers closed over a large angular hold above, my left elbow slid firmly into a crack, and I drew myself over the wall of rock to the flat spot where John was belaying me. There were only easy pitches above. In three hours of alternate climbing and belaying, we had made Traitor Horn.

We then had the choice of climbing down, which is harder than climbing up, or of roping down, a method of descent which looks hazardous but is easy and efficient. In the rope-down, or "rappel" as the French have it, the doubled rope is passed around a tree, a projection of rock, or through a sling of rope tied into a piton. The climber then literally walks backwards off, and down, the cliff, with the rope passed about his body in such fashion as to provide friction enough so he can slide down it under complete control. On reaching a ledge most conveniently near the end of the rope, the climbers pull the doubled rope down after them and repeat the process. A leather patch across the thigh prevents rope burn.

Once the technique of climbing is learned and practiced, all the rocks of the world open before one as potentially climbable. There is a kinship of greatness, of strength, of impregnability, among all mountains, whether of the desert or of the high snow country. Indeed,



Bill Rice, one of the ace climbers of the Sierra club, roping down an overhanging face at Stony point.

the desert and the high mountains have the same stark bareness and complete simplicity. A desert lover can understand the beauty of that Fourth of July night on the east face of 12,963-foot Mt. Banner in the High Sierra.

The ancient black volcanic needles of the Minarets hung in jags between blue sky, and snow and glaciers at their base. John and I tramped up over heather and brooks—we were where the brooks were born, where they burst singing and clean from the glacier's edge and rush through the grass, combing it flat; over angular talus; over snow. At the deep red chimney that led out onto the east buttress, we roped together; and swiftly we climb-

ed, pitch after pitch, higher and higher, over the square steep blocks of rock. The High Sierra dropped and widened beneath us: island-dotted, meandering lakes above timberline; the boiling clouds, their opalescent light as solid as substance; the tapestry-colored desert of Owens valley, across which lay green-blue Mono lake and its purple-black craters; everywhere the peaks of the Sierra tossed up like waves of the sea, more and more, farther and farther, blue and purple, violet and grey, ever changing in the light.

The afternoon hastened by, and grew sharply cold as the sun left the thin high air of 12,000 feet elevation. When it be-

came evident that we could not gain the summit by dark, we hurriedly started to rope down the cliff. When darkness came on, we were still on a ledge crowning precipices that dropped off blackly and emptily to the Banner glacier's faint glimmer far below. It is foolhardy to try to climb in the dark. Birds were tweeting and retiring about and below us. Nothing remained but for us to emulate the birds.

Climbing is probably the most uncomfortable sport in the world. The mountaineer must admit that he is perpetually too cold or too hot, usually in rapid succession, sleepy, hungry, thirsty and exhausted — and of all discomforts, the bivouac, the enforced night without shelter, is probably the most acute. Still, the most manifestly unpleasant trips are, illogically, those remembered with the keenest pleasure. Discomfort, like loneliness, whets one's perceptions and appreciations and awarenesses.

Night on a Ledge

Wedge behind a slab of rock out of the wind, too exhausted to stay awake, we would sleep for an hour, then wake up, shaking violently less with cold than with muscular cramp, and roam over the narrow slanting ledge, that high ledge immeasurably lonely, remote, in the night. Above, below, and to either side, rose or dropped the black, unseen precipices. Once a falling star swooped across the sky with a long trail of silver. A clear mountain night is filled with a peculiar visibility that is apart from light. Infinitely far below, the Banner glacier shimmered dully. Far and away stretched the photographic greys and blacks and whites of lakes and snows and peaks. At two a. m. a red star rose rapidly over White mountain peak. Before four, the east was filling with smoky orange light, and the rocks were shifting from black to dead mysterious grey. We again slid into sleep, and when we opened our eyes, pale warm sunshine lay at last against the clean rock.

Cheered by daylight and mainly in need of limbering, we stretched, ate the few remaining lemon drops in the larder, and roped down the cliff. We crossed the pitted snow banks, found water lying cold and fresh in rock hollows, descended the heather slopes blossoming and sweet, and about 9:30 strolled into camp for a day wholesomely dedicated to food and sleep.

The rock climber certainly has no option on the mountains, which wait quietly to share themselves with anyone who wishes to go to them, but it is he who can seek the highest adventure with the greatest safety. The distinction is recognized in the conspicuous forest service signs nailed to trees along the trail into the Minarets country:

"HAZARDOUS ASCENTS:

*Inexperienced climbers without guides
Should not attempt these peaks."*

There is indeed nothing peculiar about rock climbers. Most of them are young professional people, chemists, doctors, clerks, school-teachers. My husband John is an engineer; and week days before I was married I did the same sort of office work, interspersed with housekeeping, as thousands of other girls. But for the last two years, climbing has given my week-ends almost the color of a fictional existence.

Rock climbers are not "born," but undoubtedly a natural aptitude helps. In a general way, those who have spent a mother-scaring childhood bounding over trees, roofs and fences are those who take most readily to rock climbing. Subconsciously they have learned the muscular movements and coordinations. But safe climbing involves much more than the ability to slip lizard-like up improbable precipices.

With proper experience and equipment we climb with far greater safety than could reasonably be expected of such a sport — a sport which is not easy, but whose rewards are so high as to answer the inevitable "Why do you do it?" Every climb has its own sharp quality of adventure and beauty. And there is a quality, an essence, about climbing as a whole which has no more relation to a particular climb or a specific mountain than does a fine painting to the individual brush strokes which (we forget) compose it. That quality is built up of countless things, big and little, forgotten by the conscious mind, or jumbled together, or remembered with the clarity of a photograph.

Being thirsty for hours on the hot cliffs and ignoring it, and then drinking

with impartial pleasure from a ringing glacial stream or a metal-flavored lukewarm canteen. Being hungry till one forgets hunger except for a light, lean feeling at the rope-squeezed waist, and then getting back to camp too tired to eat.

The way climbing is always in the back of one's mind, in office or house or on the street. The sheer physical exhilaration of climbing, the intoxication of the beauty and majesty, the cold and altitude, the joy of climbing up, up, up crack or chimney or face of rock.

The rocks themselves: a cliff-ledge on a summer day, high, high, the tips of the trees coming to points as they must for birds; the air warm, yet stirring; the granite rough and warm, and familiar under one's caress, clean pinky-white, with a delicate tracery of sea-green and black and orange lichen, tiny plant-things nudging into cracks; the nearness of the climber quietly moving above one, out of sight but connected by the rope that becomes almost a part of one; the nothingness but air — air, the rope, the sun, the distances, the rock.

And at the close of every climb, the good, solid, muscular tiredness as one plods back; blistered feet, weary muscles, bleeding knuckles, only emphasizing somehow the light strength and welling content one feels . . . as when tramping across the warm, silent, starlit desert last January, behind us Monument peak black and thin against the clear light of the evening sky. A great star and a small one grew brilliant in the angle between peak and ridge, and the monument reached silently toward the higher stars — a mountaineer's peak, a finger pointing the way to go; Upwards.

Prizes to Amateur Photographers

Each month the Desert Magazine offers two cash prizes for the best camera pictures submitted by amateur photographers. The first award is \$5.00 and the second \$3.00.

Pictures are limited to desert subjects, but there is no restriction as to the residence of the photographer. Entries may include Indian pictures, rock formations, flowers and wild animals, canyons, trees, waterholes — in fact everything that belongs to the desert country.

Following are the rules governing the photographic contest:

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

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

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

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

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

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

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

Contest Editor, Desert Magazine, El Centro, California.



Meteor Crater in northern Arizona. It is nearly a mile across the bottom, and three miles around the rim. Frasher photograph.

It must have given the great American desert quite a jolt 2000 years ago when a small comet got caught in the gravitational pull of the earth and landed in the region we now know as northern Arizona. Since the aborigines of that day—if any—wrote no history books, we can only guess at the story. But the crater is there today and nature students find it an interesting spot to explore. Walter Ford went there to collect some specimens of meteorite, by a novel method of his own, and here is the story of his experience.

We Hunted Meteorites with a Magnet

By WALTER FORD

MY plans for a trip to Meteor Crater in northern Arizona began to take form during a conversation with John Hilton last spring. John suggested that some interesting mineral specimens could be found there—if some one would devise a method of locating them.

We knew that visitors had combed over the surface of the desert in the vicinity of the crater for many years, and there was little likelihood of finding anything worthwhile by the usual method of hike-and-hunt.

It is common knowledge that this meteor material contains a very high percentage of iron, and eventually the discussion led around to the possibility of dragging the ground with some sort of magnetic rake.

John thought the idea was practicable, and so I began experimenting with the construction of a rake. The gadget, when finally completed, consisted of a series of electro-magnets secured to a wooden frame which was attached to the rear

bumper of my car. The magnets were energized by the car battery.

Due to the pressure of other work, Hilton was unable to accompany me when the time came to make the trip, but I found a very congenial and helpful guide in the person of W. C. Geoglin of Winslow, Arizona, who is in charge of the tourist concession at the crater.

Geoglin has been associated with the crater since the days when the first attempts were made to locate the main body of the meteor. He knows the history of operations there intimately, and was very courteous in supplying the information I sought.

"That shed you see down in the center of the crater," he pointed out, "is where the first attempt was made 30 years ago to locate the meteorite. Machinery was sent down on skids and a shaft was sunk. Quicksand interfered with the operations and the work had to be abandoned."

Later, shafts were sunk at other points on the crater floor but the closest ap-

proach to meteoric material was iron-stained sand.

The geologists next turned their attention to the crater walls. Examination showed that the angle of the rock strata varied. On the north side it showed a tilt of only five degrees, while on the south it was raised 90 degrees from horizontal.

From this evidence the conclusion was reached that the meteorite struck at an angle from the north and probably lodged somewhere under what is now the south rim of the mile-wide crater.

A drill hole was put down at that point, and fragments of the meteorite encountered. At 1300 feet the drill became wedged in solid matter which the drillers concluded was the main body of the meteor. In attempting to withdraw the drill, the cable broke and the string of drilling tools was lost.

More recently the operations were transferred to the pit of the crater where by means of drill-holes and geophysical

surveys it is believed the meteorite has been definitely located.

As one looks down into the crater and notes the remains of past attempts to find the meteor, the question naturally arises: Would the discovery of the main body justify the thousands of dollars spent in the quest? I put the question to Geoglin.

"We estimate the meteorite to contain approximately 5,000,000 tons," he answered. "From analysis of the fragments thrown from the main body, the value may be conservatively placed at \$60.00 a ton. Does that answer your question?"

It is generally known, of course, that men of some standing in the scientific world have questioned the existence of such a huge body of metallic matter. They have presented the view that the force of the impact and other factors have almost if not completely disintegrated the original mass.

The present owners of the property, however, have such confidence in their holdings that plans are being formulated for further exploration work.

The approach to the crater is at such an incline as to leave the visitor wholly unprepared for the view which suddenly unfolds before him. From the rim the ground drops almost vertically to a pit nearly a mile across. As I looked into the crater for the first time I could not help but note the similarity between it and the volcanic crater of Haleakala, in the Hawaiian islands. Though much smaller

than its mid-Pacific counterpart, the same spirit of desolation prevails; the same feeling of awe and insignificance fills one as he looks into its depths. It is perhaps the similarity of Meteor crater to those of volcanic origin which at first made scientists loath to accept the theory that the former was caused by a celestial visitor.

My companion and I climbed down the precipitous wall to the bottom of the pit. Only from the floor of the crater may the tremendous difficulties in bringing in the now abandoned boilers and hoisting equipment be fully appreciated. Many of the smaller pieces of equipment had to be hauled down on the backs of burros, while the larger parts were sent down the slopes on skids made of heavy timber.

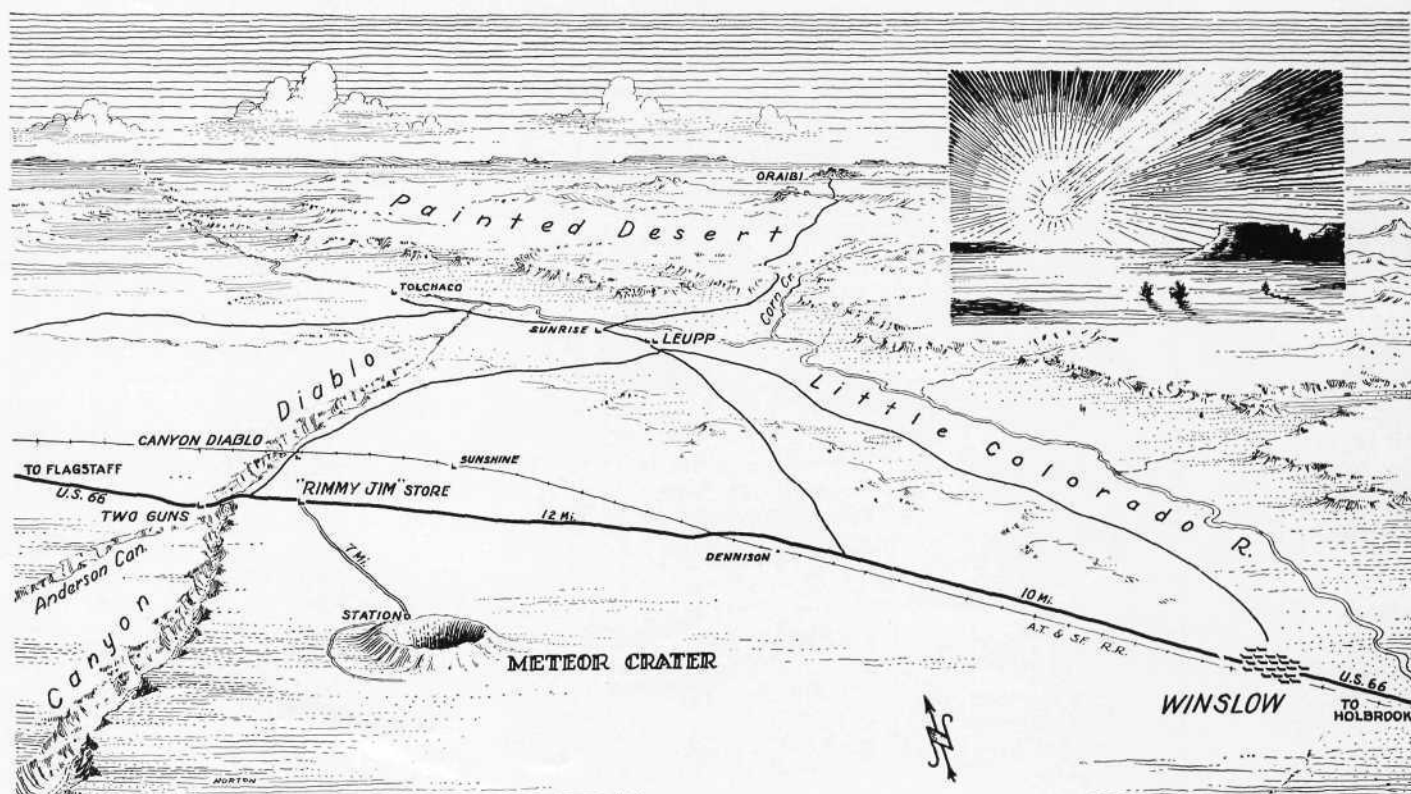
Evidence of the terrific impact of the meteor body is found in the flour-like sand in the dumps of the abandoned shafts in the pit. So fine is the powder that it feels like talc to the touch. A microscopic examination of the sand reveals each grain to be so badly shattered that they will disintegrate still further under the slightest pressure.

Scientists estimate that about 2000 years ago a small comet strayed away from the path through the heavens it had followed for millions of years, and became enmeshed in the gravitational forces of our earth. Crashing downward at a speed of 40 miles a second, the huge molten mass struck the then level plain of northern Arizona and buried itself

several hundred feet below the surface. It is located 20 miles west of Winslow, Arizona.

Meteor crater has long been associated with the religious life of the Hopi Indian. The white flour-like sand found on the floor of the crater is used in their ceremonies and one of their legends designates the crater as the abode of one of their gods. According to the legend, the crater was formed by a wicked deity who was cast out of the heavens and fell in flames to the earth, digging the great pit and burying himself at its bottom. A variation of the above legend is that three gods came out of the clouds, one making his home in Meteor crater and the other two at locations to the north. Taking a clew from the legend that the other two gods may have been smaller meteorites, scientists have searched the northern areas for additional craters, but without success.

White men first saw the crater in 1871, when a group of United States army scouts visited it and named it Jackson's Hole. A few years later Mexican sheepherders gathered fragments of meteorite in the crater and gave them to railroad contractors, who were working in the vicinity. The specimens eventually found their way east and came to the attention of the late D. M. Barringer, of Philadelphia. Barringer concluded that if the main body of the meteorite could be located it would constitute a valuable mass of ore. In 1900 he visited the crater and after a thorough study he acquired it as a patented mining claim. At present it is

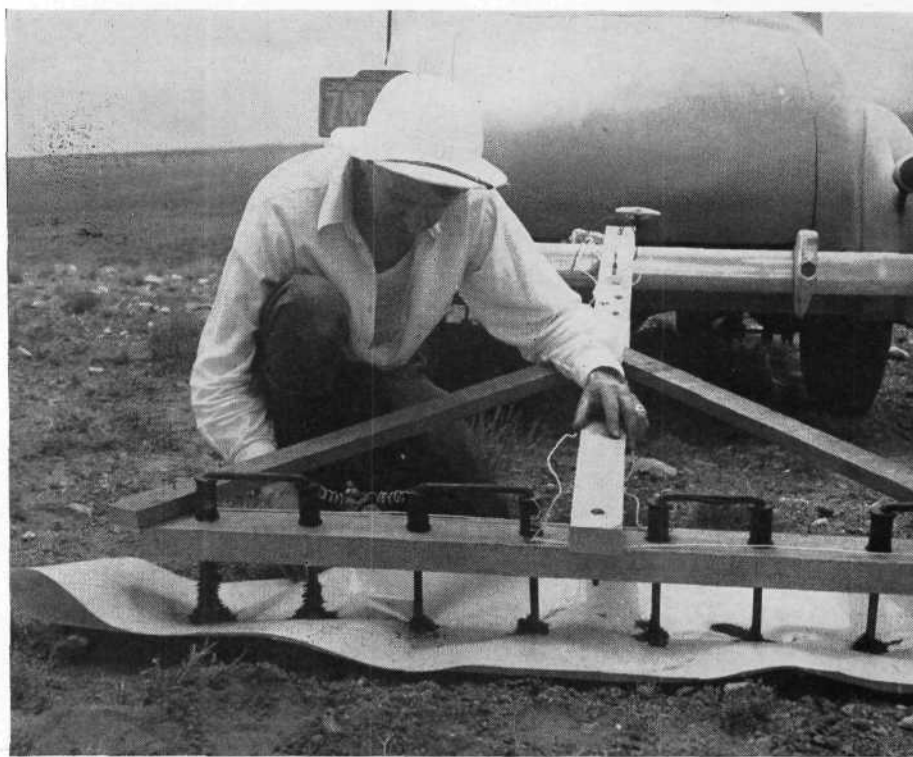


owned by the Standard Iron company of Philadelphia.

The number of persons visiting the crater has increased yearly to such proportions that for its own protection, the company has found it necessary to restrict entrance to the crater to the northern rim, where a fee of 25 cents is charged.

After some preliminary dragging, we found the most plentiful supply of meteoric fragments at the extreme outside edge of the south slope. This may be due to the fact that it is more remote from the road and therefore less subject to the search of specimen hunters, or that the "splash" of the molten mass was more generous in this direction. One of the old-timers in that area told me that in former years pieces of the meteorite were plentiful on the north side, and had been picked up as far as five miles from the crater. This would indicate that the element of splash had nothing to do with the present day supply of surface material.

While working with the magnetic rake, an interesting fact was disclosed. Owing to their long exposure to the elements, most of the specimens lying on the surface were so badly oxidized as to have little value as collectors' items. It was necessary to weight the rake so that it



Here is a picture of Walter Ford and his magnetic rake. A sheet of paper was placed under the rake before the photo was taken in order to show by contrast the fragments of meteorite collected.

dug below the surface before any worthwhile pieces were obtained. In operating

the rake over an area approximately one-quarter mile square, we were able to obtain about 10 pounds of meteorites in an hour's time. They ranged in size from a fraction of an inch to two inches across. Probably few specimen hunters will wish to duplicate such large-scale collecting, but where the usual piece-by-piece method is employed a small magnet would be a helpful tool in discovering the worthwhile specimens.

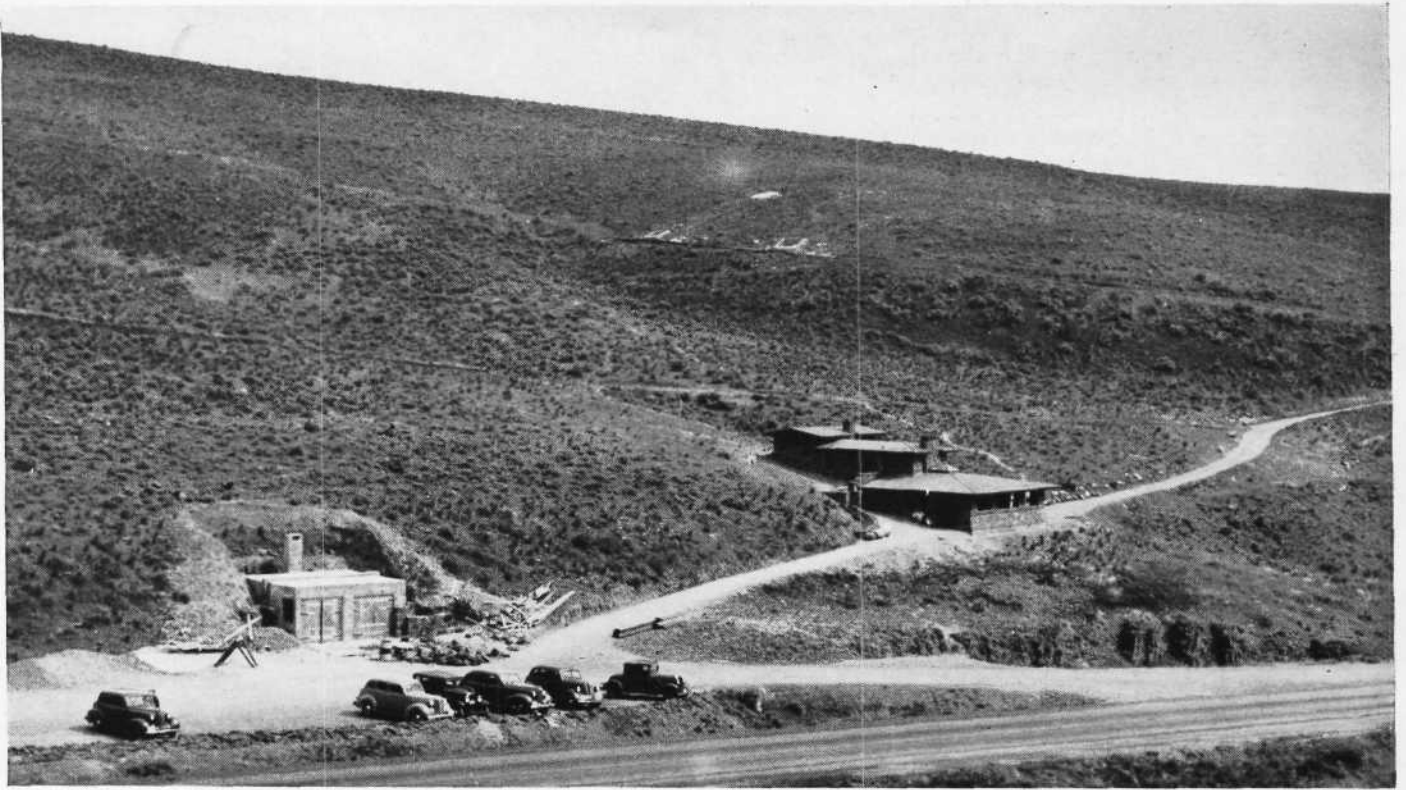
Analysis of the fragments found in the crater, according to Geoglin, shows about 90 percent iron, with nickel, platinum and iridium making up the remaining portion. A trace of gold and silver exists in some pieces, and microscopic diamonds have been found in a few.

A fair dirt road leads around the crater to the south slope I have mentioned. There are no barriers in the road but it is on private property and permission to visit the area should be obtained from Geoglin at the north rim.

Those who are interested in unusual natural phenomena will find the trip here thoroughly worthwhile. But just a word of caution. You might feel the urge to extend your exploration to the floor of the pit, so take along a canteen of water. There is no water at the crater, and I can personally testify that a summer-day trip into the cavity and out again would be much more enjoyable with an ample supply of drinking water.



Here are some of the specimens picked up by rake. Ford got about 10 pounds of them in an hour's time.



Ginkgo Petrified Forest state park. Terraced building on the right is the headquarters, museum, and home of Charles and Edith Simpson, custodians. The park is located near Vantage, Washington. Trails lead to the petrified logs on the hillside above the buildings. L. D. Lindsley photograph.

Graveyard of an Ancient Forest

By BERTHA GREELEY BROWN

"WILL you tell me, please, what this word *Ginkgo* means? Sounds like the name of a Chinese! I've been seeing the signs along the road . . ."

The question came from a motorist who had stopped at a rock house, built of native lava, out along the highway in the desert heart of Washington.

He was speaking to Charley Simpson, who lives in the rock house by the side of the road, and whose official title is Custodian of the Ginkgo State park.

A smile lurked in the blue eyes of Simpson's lean and tanned face as he replied. Many motorists — thousands of them every year — ask this same question. They always get a courteous answer.

"Ginkgo is a tree," he said. "Yes, it is oriental all right, and the petrified Ginkgo found in this region is a kin to the

sacred Ginkgo growing in the temple gardens in eastern China."

A majority of those who stop at the Ginkgo park headquarters ask a few brief questions and then hurry along the highway. They are merely curious. But to those who linger long enough to become acquainted with Charles and Edith Simpson, his wife, there's the story of real human interest in the experiences of these unusual people. They are friendly folks, and they like to visit with the people who follow the beaten path to their doorway.

"It was my everlasting collecting hobby that got me into this work," Charley will explain. "I was born in Ohio in 1869. When I was seven, my parents took Horace Greeley's advice and moved west to Kansas. My first job was teaching school in Colorado and there my hobby was started. I began collecting Indian arrowheads, and I've been collecting something

While the *Desert Magazine* has been devoting its pages mainly to the desert region of the Southwest, there are also arid lands in the Northwest — and this month the rock collecting clan will be taken on a field trip into a region where the rare petrified Ginkgo wood is found. Custodian of the Ginkgo state park is Charley Simpson — and he is a hobbyist you'll enjoy meeting.

ever since. It has been my redeeming hobby and I've never felt the urge to reform.

"I now have arrowheads from most of the states, minerals from all corners of the earth, and fossils galore."

Visitors at the park headquarters often spend hours in the Ginkgo museum. It is Simpson's own collection, and is said to be one of the finest mineral exhibits in any state park.

"I've been lucky all my life," Charley continues. "In 1893, with luck, I staked a good claim in the Cherokee strip of Oklahoma. A little later I had another stroke of luck when Edith McGibbon promised to do my cooking, for better or for worse.

"I had a claim, a girl, and \$50 to boot. With the fifty I built an addition to my one-room sod shanty, bought a cookstove, a store suit, and still had money

left after I had bought a marriage license and paid the preacher.

"Everything was for 'better' except that I never could get rid of the urge to move west. It took Edith 15 years to pack our suit cases, but when she had completed the job we took along a few necessities—and my box of agates and relics.

"I went to the Northwest, and it did not take long to discover I had migrated to a veritable paradise for rock nuts. While renewing my hobby in earnest, I incidentally began the scientific development of apple orchards. I firmly believe that if a man is not too busy with his avocation he should have a vocation to fill in his spare time."

Lady Luck stood by, and before long the Simpson house, the woodshed, the garage and the chicken coop were all cluttered up with rocks and apples. Mrs. Simpson sometimes expressed alarm lest the agate nodules and spherical chunks of fossil wood might find themselves wrapped and shipped with the Winesaps and Jonathans.

Charley Simpson confesses that "week-ends and every other day I could get away from the family, the apple pickers, and my conscience, I hunted up and down the Columbia river for ancient Indian camps. These yielded many relics, from colorful beads to scalps and skulls.

"My neighbor, Earl Simmons, was also a collector, and often we hunted together. We noted that Indian skinning knives and arrowheads in this region were made of the same opalized wood as the chip drift on the sandbars along the river. We were certain the source of this petrified wood was back in the hills. So one day we went on a reconnaissance trip. We climbed talus slopes. This was tough going. Those pieces of rock kept skidding out from under our feet. Once at the top of the rock debris we had to negotiate lava walls, often hand over hand."

Simpson and Simmons did not find what they were seeking at once, but they were unflagging in their quest. Their reward came one blistering hot day when they stumbled up a craggy hillside and found themselves in an ancient graveyard. Here lava had overtaken and buried a forest millions of years ago and this rock was still holding in rigid tenacious grip, giant stone trees. Many forces had conspired to break the hold of their jealous captor. Erosion, the greatest of these, had exposed, washed and sluiced and, to some extent transported, fossil material.

Later, these two men were to learn that these trees in central Washington, are the only forest ever found that had been buried in liquid lava.

Charley Simpson contends this discovery was pure luck. "From then on, my



Charles Simpson, custodian of Ginkgo park. Photo by Gilbert Kaynor.

wood pile grew rapidly and my orchards bore bumper chops," he says.

"I bought more land, planted more trees, contracted more irrigation and then went back into the hills and dug out and brought home more back-bending loads of redwood, elm, oak, etc."

Often, in a mood of contemplation, Simpson stands and looks at his logs. He is not thinking of his acquisitions but of their formation. His thoughts travel backward to that time when geological drama was spectacular beyond the conception of human mind. He is a hobbyist, a collector and a dreamer.

In 1930 Simpson's orchards topped the world's record for apple production, and his pile of mineral wood was sufficient for any one man.

Then the Great Deflation, sweeping across the land from coast to coast, engulfed Charles Simpson. The bottom fell

out from under everything — including apples. A moderate fortune of \$100,000 shrank to zero, and along with it went \$37,000 in life insurance.

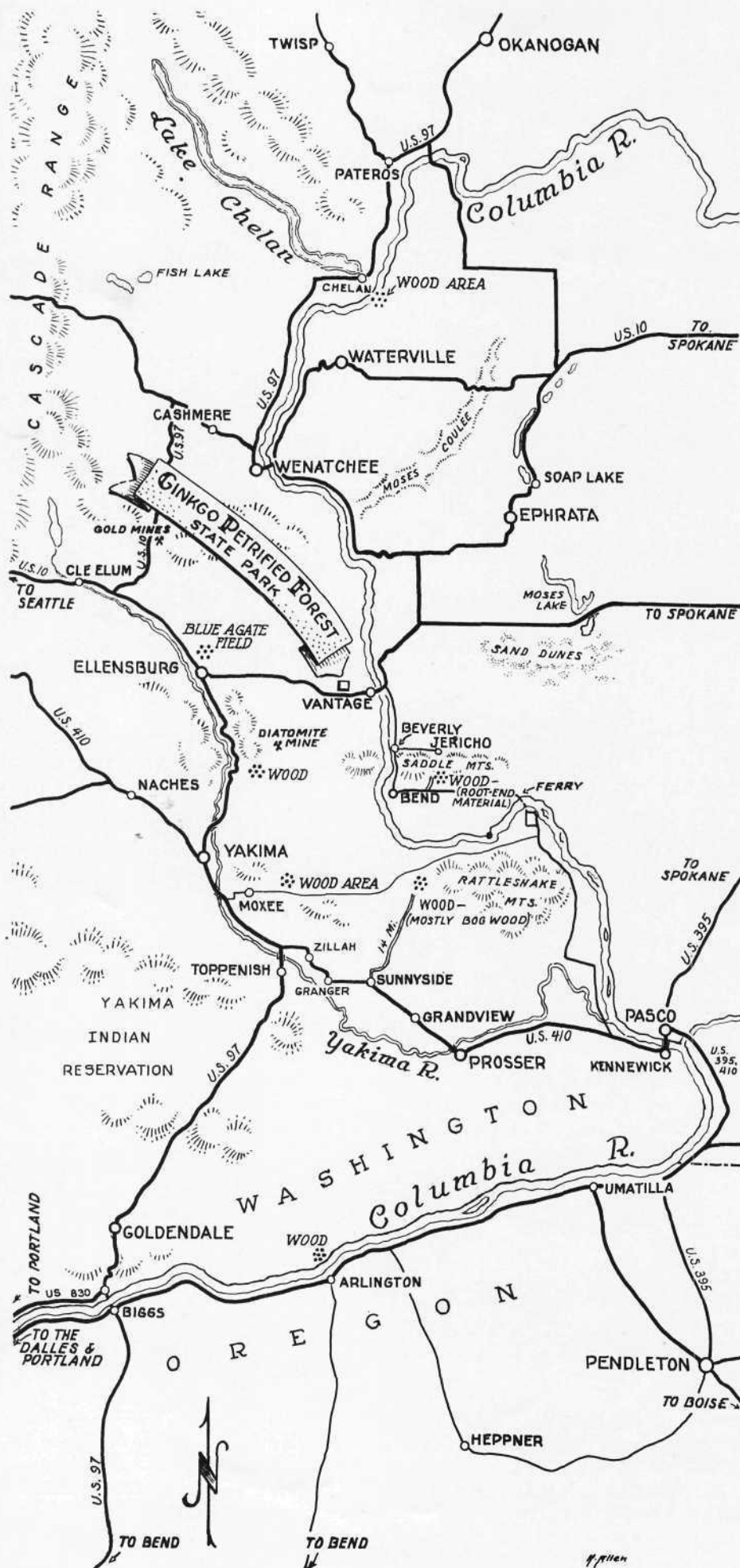
But the collapse did not rob Charley Simpson of his sense of humor. With characteristic optimism he turned his attention to new plans.

Edith Simpson was not surprised when she heard him saying, "Well I'm glad it's all over. We're lucky to be out of it. Some people take a lifetime to lose everything. We had better luck."

There was one thing that refused to "depress" and that was the rocks.

When Simpson was told the custodianship at the Ginkgo park had been granted him he said, "Good, my hobby is now my bread and butter."

Four snug rooms above the park museum became 'home' to the Simpsons. They like it. From here they can view a con-



tinuous ruffle of low round mountains, toned in color to each season of the year, and reaching from the summit on the west to the Columbia river, where precipitous bluffs catch the eye like a blue garment, starched and fluted and held aloft against the morning sky.

Mrs. Simpson tells of a youngster who stood looking long and intently at this panorama; then turning abruptly she exclaimed, "My, my, what a b-e-a-u-t-i-f-u-l view you have and nothing to look at."

One of the men interested in the exploring of this wood territory was George F. Beck, geologist, and to him goes the credit for the discovery of the area set aside as the Ginkgo park.

The logs in the park are unusually large and beautifully opalized (not gem quality). They are prostrate, and evidently came to this locality as float. Thirty miles south of the park, Simpson, with friends, found acres of root-end material, so called because it is exactly what the name implies; a mass of roots, broken limb sections and coarse grass, compressed and petrified into a solid, silicate stone. Many miles south of the root-end field they found petrified bog. This is a replica of bog found along the lower edge of any marshy, wood-fringed lake where the shore waters are cluttered with vegetable refuse.

These hobbyists fitted together facts and theories and their imaginations shaped a picture of a prehistoric lake existing where mountains and chasms are now held in arid detention.

In Washington, petrification took place under favorable conditions for the replacement of wood cell structure, thereby giving excellent opportunity for type identification. With Beck taking the lead in the scientific work, 75 definite tree types have been determined. These are deciduous, conifer, many tropical and many now extinct types. Very few Ginkgos have been found, but of all petrified wood, it is the most interesting and the most unusual.

Geologists speak of many forests in this region. They do not mean groves of many localities but growths of many time periods. At least five different forests, covering an area 150 miles long and 50 miles wide, have been embedded in solid rock, one above the other. There were millions of years between the time these forests grew, and many years between the lava flows. In the petrifying process, submergence is always a certain factor.

Simpson tells of finding different types of wood in the same "pile" and he goes on to explain these trees may have grown in different geological eras. For instance, oak and cypress are together and the two look as if they had hobnobbed since the beginning of time and eternity. The oak may have grown thousands of years before the cypress and it is possible it came



Trail to the Ginkgo state park. Photograph taken on U. S. Highway 97 between Yakima and Goldendale by Photo-Art Studios, Portland.

from some distant point, perhaps Canada, washed in and laid down by high water. The cypress may have been submerged, overtaken and buried by lava and mineralized where it rooted and grew.

In the Ginkgo park, vandalism is a constant concern. Premeditated theft and damage is attempted but usually the wrong-doer is merely thoughtless or careless. Simpson tells of one man who fitted into none of the above classes.

About five o'clock one morning he was awakened by a tap, tap. Opening the door he saw a man vigorously hammering at one of the logs.

"Say mister," he called, "You must not chip the wood." The fellow was surprised and resentful.

"It's against the law here in the park," Simpson explained.

Back came the retort, "Well I'll be - - - Then, what in - - - are they here for?"

Charley Simpson could spend days telling stories about his specimens — and

those other specimens in the cabinets labeled "MAN."

One slab of oak, cut and polished, attracts more attention than any other wood in his possession. In this specimen is a perfect picture of twin squirrels. It often takes emphatic explaining to impress kindly, humane souls it simply is a picture made by mineral stain. One old lady

was heard to say, "Poor creatures, couldn't something have been done about them?"

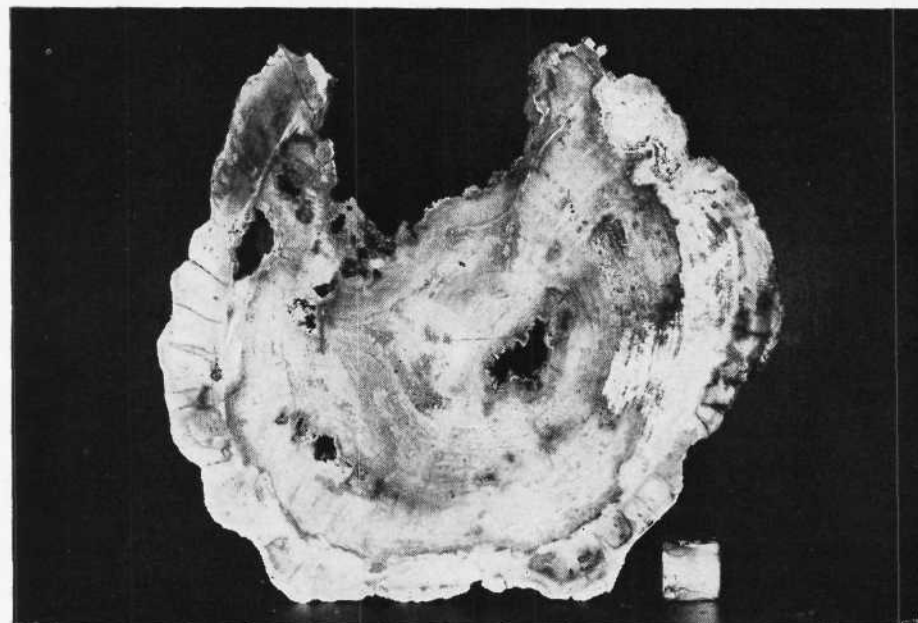
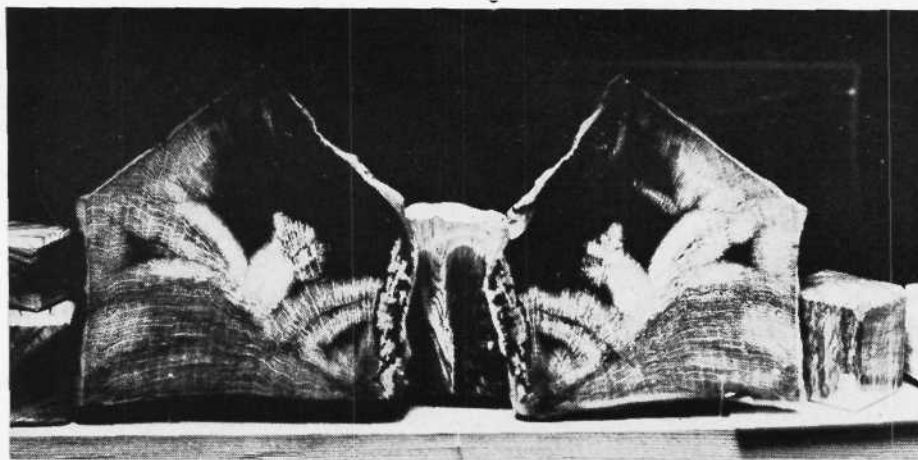
One day Simpson stepped into the museum just in time to overhear an amusing discourse on the subject of petrification of — not wood — but quartz crystal. A self assured young man was telling a group of visitors it was petri-

GINKGO

is a subtropical tree, both coniferous and deciduous, according to a letter from V. H. Hill of Salem, Oregon. It is said to be the connecting link between the ancient cycads and the modern conifers, dating back almost 160 million years.

Only six definitely identified fossil ginkgo logs have been found, these being located in the Ginkgo Petrified forest state park in Washington. Ginkgo fossil leaves, however, are widely spread, occurring as far north as the arctic circle.

This rare species, one of the most beautiful of trees, has survived to the present time, although not known to be native anywhere. It is planted extensively in the temple grounds in China and Japan. Thousands of ginkgo grow in and around the city of Washington, D. C. and it thrives in the southern and Pacific coast states.



Above—The famous petrified oak log with the twin squirrels. L. D. Lindsley photo.
Below—Slab and cube of Ginkgo wood. Cube is paperweight size. The Ginkgo tree is of the Yew family, deciduous. The leaf so much resembles fern fronds it has been called the "maidenhair tree." The fruit is an unsavory drupe, but the nut within is eaten by Chinese and Japanese. L. D. Lindsley photograph, Seattle.

fied water. One listener voiced doubt. Indignant, the young man insisted, "Well I should know. I've read when water petrifies it is as clear as glass."

One specimen deserves special mention, more because of its origin than for its beauty or value. It is an egg-shaped stone, about four inches in diameter and weighs several pounds. It has been cut in halves and the smooth surfaces polished to a high glaze. It appears to be small, clear quartz crystal in a radiating pattern. Looking at it through a magnifying glass one can see, embedded in the mineral, minute, fibrous vegetable matter. It was found where it was formed, in the stomach of a horse. An inquisitive tourist, when told it had been taken from a horse's stomach, snorted in disgust, "My goodness, no horse in the world could swallow a stone that big."

To Charles Simpson, rocks are things articulate. They speak of the elemental and of the eternal; of things built up and

of things torn down; of constant change governed by changeless law. They tell a story that relates to all that is. He loves the lands that held them close until he claimed their custody. They are more than his bread and butter; they are part of his life.

• • •

DESERT LABORATORY TAKEN OVER BY FORESTRY SERVICE

Marking the end of negotiations which have been underway for several months, the Carnegie Institution announced during the past month that the Desert Laboratory at Tucson had been turned over to the U. S. Forest service to be used as a forest and range experimental station.

Dr. Forrest Shreve who went to the laboratory in 1908 and has been in charge since the retirement of Dr. D. T. McDougal 13 years ago, vacated the main laboratory buildings several months ago. Dr. Shreve will continue to occupy a small office adjoining the site however.

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Summer months find Carl Schmidt out in the Indian country where he finds the subjects he likes best for his much-sought canvases. The accompanying picture is a reproduction of his Navajo canvas, "Navajo Herder."



Carl Schmidt -- He Prefers the Silent Landscape

By JOHN W. HILTON

WALL street's collapse in 1929 brought tragedy to many people—but Carl Schmidt was one who salvaged a new and happier way of life out of the wreckage.

When work became slack in his commercial artist's studio he packed his paint box and sketching easel and set out to test his art on real paintings.

"This," he says today, "was the beginning of a new life for me." He was surprised at the readiness with which his outdoor subjects took form and color on his canvas. And he was encouraged when it became evident that people liked his paintings well enough to buy them.

His dexterity of hand and eye was not a thing acquired overnight, but the reward of a slow and orderly development of his artist's talents.

Born on a Minnesota farm, Carl's first drawings were of the animals in his father's barnyard. Cows, horses and chickens all found their places in his early sketches. These sketches must have contained some elements of good drawing for friends who saw them encouraged the lad to go on with a career of painting.

After attending the Chicago art institute his work came to the attention of the advertising department of the John Deere farm implement organization and resulted in a job with that firm lasting four years.

From this position he went on as a free lance commercial artist and followed this work for 15 years. Although Carl Schmidt would not care to return to the grind of commercial art again, this discipline and training helped develop the artist he is today.

Vast spaces and restful silence were the lures that brought him out on trip after trip into the desert. It was not until he visited the Navajo country of Arizona, however, that he really

found his ideal subject matter. Here again he could paint the animals he loved so well against the magnificent backdrop of desert hills and skies. What is more, he found peaceful and interesting people who fitted into his pictures perfectly.

Never a one sided artist, Schmidt paints many subjects, ranging from still lifes, portraits, figures and marines, to the bold desert country that he likes best. The greater number of his canvases reflect the glowing light of desert skies and most of these feature some form of life in the open—cowboys riding in the dust of a round-up, a rider on the summit of a mesa, or a lonely shepherd with his flock.

In the winter Carl usually can be found at his studio in San Bernardino, California, or out sketching somewhere on the Mojave or Colorado deserts. His summers are generally spent in the Indian country. He is a tall handsome chap. In the field he lives in his car, cooks over a campfire, paints almost every day and minds his own business so strictly that many get the impression he is unsociable.

Actually he is a fine companion on a camping trip, as I can personally testify. Carl is interested in his work above everything else in the world, and this seriousness has given him a shy reserve that shallow people seldom take the trouble to penetrate. Which is probably just as well.

Reluctant to talk about himself Carl evaded the subject of his age. The fact that he is still a bachelor may have something to do with this but my personal opinion is that he just doesn't consider it an important factor.

It is sufficient to say that he is in the prime of life, with the promise of a long and productive career ahead. Every year he returns to his studio with finer canvases from this desert land he has learned to love so well.



Navajo batali, or medicine man, with the tools of his profession, preparatory to starting work on a sand-painting used in a healing ceremonial.

The central figure symbolizes a Yei or Navajo god. The feathers are oriented to the cardinal directions, and rainbow symbols form the outer area of the design.

Every part of the painting, even to the smallest feather tip, has a meaning, and an error in this part of the ritual will bring displeasure to the gods.

Magic of the Navajo Medicine Man

Relatives of the patient brought to the medicine man for healing listen to the chants of the "batali" as he works with the sick man in the cha'o (brush summer shelter).

By D. CLIFFORD BOND
Photographs by the author

A few years ago I began making records of Navajo life. Slowly I gained the confidence of the clan leaders, learned something of their language and their rituals. Since the Navajo have never performed their most sacred rituals at tourist centers, I was anxious to record the making of the mystic sand paintings and went deep into the reservation at Oljato near Monument valley in Arizona, to do the work.

After several months of search for a medicine man who would permit me to photograph his rituals, I finally arranged, with one who knew me, to record the rites of a Devilchasing and healing ceremony he was conducting. Since the sand painting is done in the semi-darkness of the medicine hogan, or conical house of juniper logs covered with brush and earth, the only available light for pictures came through the smokehole on top, through which I pointed my camera. I was denied the privilege of shooting the

actual healing rite, and was not permitted to use flash lamps, since it is decreed that sunlight lessens the power of the painting, and what is a flash bulb but "bottled sunlight."

The Navajo medicine men undertake to cure, no matter what the ailment, but must be paid in advance. For the ordinary all-night sing the usual fee is \$6.00. The cost is much greater for the more elaborate rituals, which may last nine days and require as many as 150 paintings. Payment may be made in cash, goods, or livestock.

Soon after darkness comes there rises the wild chant of the Yei-Be-Chai, sung by dancers weaving around the orange flames of a juniper fire. The song rises, swells, sinks to a low moan, ascends again to a wild, rhythmic chant, and ends in a yell—primitive, triumphant—that echoes back again and again from the canyon walls.

Prayers, emetics and sweat baths are



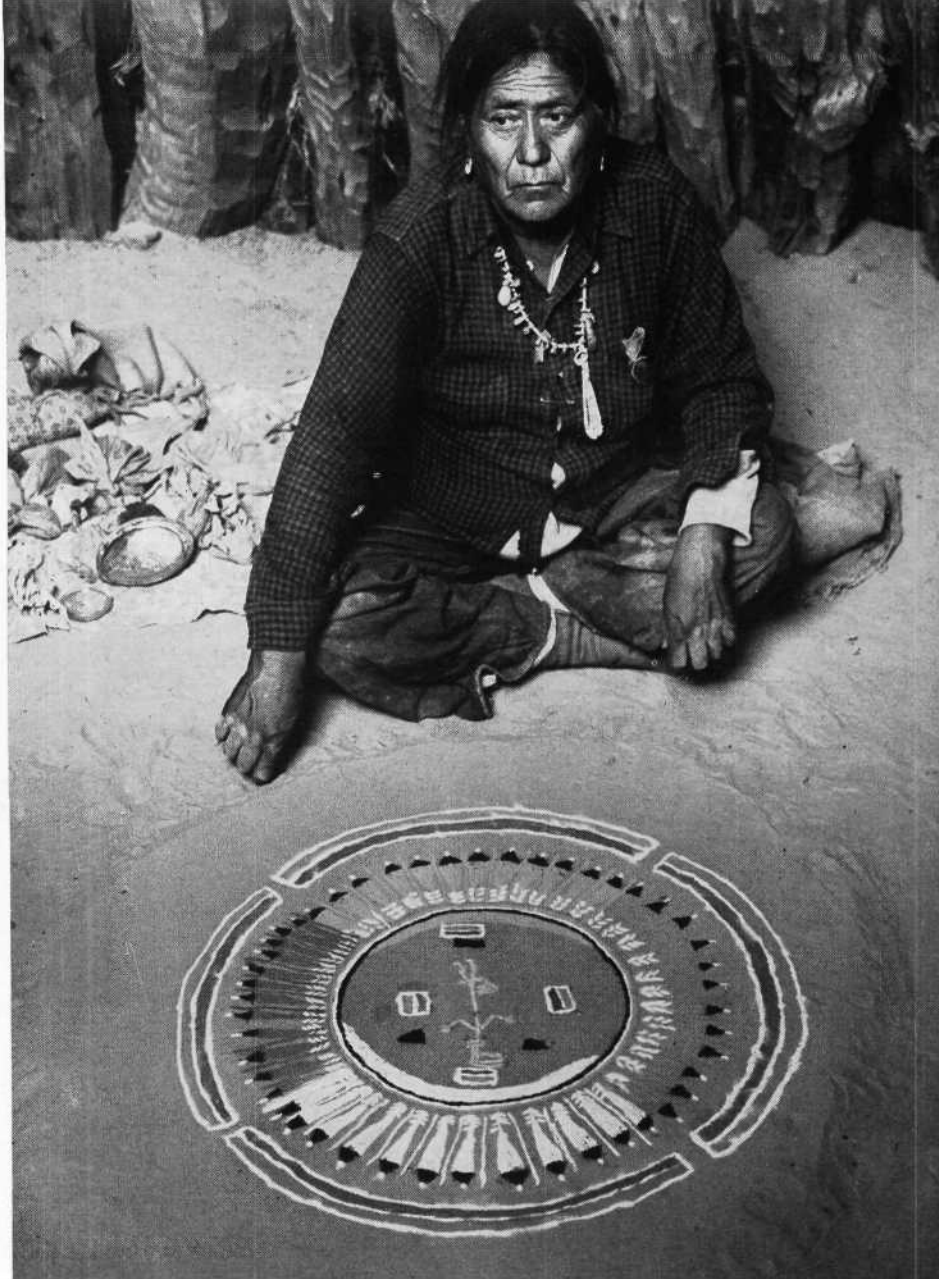


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Navajo Medicine Man

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preliminaries. Then the patient is seated in the center of the sand painting. The medicine man touches the feet of the "yei" or god represented by the center figure with his eagle-plume and then applies the wand to the feet of the patient, wiping out a part of the painting as he proceeds to treat each part of the body. Ultimately, the "devils" are driven from the mouth of the patient, he rises to leave, and the sand of the painting is gathered hurriedly and carried out and scattered. So ends the ritual.

Missionaries long have preached to John Navajo; the WPA often has lured him far from his herds of sheep and goats, and the Indian service doctor has introduced him with infinite patience to vaccines and prophylaxis. But out on the 15,000,000 acre Navajo reservation, a land so vast that the civilization we know must be content to sit on the fringe of it, the tribesmen still believe that there is nothing better for a man aching in body and tormented in soul than a good old healing dance and a carefully-prepared sand painting, which always speeds the cure.

SAND PAINTINGS AT GALLUP CEREMONIAL

Visitors at the annual Inter-Tribal Indian ceremonial at Gallup, New Mexico, August 14 to 17 this year, will have an opportunity to see Navajo medicine men actually engaged in making their sand paintings in the huge exposition building during the 4-day program.

Seven thousand Indians representing 31 tribes are scheduled to take part in the Ceremonial program this year. The events are to include 63 native Indian dances, Navajo magic, weird rites, native sports, Indians at their games, and craftsmen engaged in the making of pottery, silverwork, blankets, katchinas and basketry. Parades will feature the afternoon programs each day, and the dancing events are to be held at night in the fine new ceremonial stadium erected especially for the annual Indian show.

Black Gold

Strange tales of mysterious lost treasure are told around desert campfires, but perhaps none is more weird than the story of this deposit of black gold, guarded by swirling clouds of poisonous dust. Like the other lost mine tales appearing monthly in the *Desert Magazine*, this one is repeated as it was told to the author, without claim as to the authenticity of any detail.

By JOHN D. MITCHELL

SOMEWHERE in the Bullion mountain country on the desert between Bagdad and Twentynine Palms, California, in the center of one of the many dry lakes known to exist there, stands a small black mountain in which there is said to be located, in the form of a chimney, another of the many lost mines of the Southwest.

The outcrop of this chimney has been broken down by erosion over a period of many thousands of years, scattering great quantities of gold nuggets over the barren ground around the foot of the mountain and among the rocks upon its sides. The nuggets, like the rocks and chunks of brown hematite of iron with which they are found, are all worn smooth. The old nuggets are covered over with a thin film of manganese oxide and can be distinguished from the hematite only by their darker color and greater specific gravity.

While many men, most of whom were Indians, are reported to have seen this deposit, few of them have returned from the desert to tell the tale. Among the few said to have reached the mine and returned were two Indians and one white man. One of the Indians traded some of the black nuggets in Yuma. Peg-Leg Smith was in Yuma at the time and immediately started out to search for the mine. Whether Smith ever found the deposit is problematical. He lost the Indian's trail somewhere near Cottonwood springs, in San Bernardino county. Some time later Peg-Leg was found unconscious from hunger and thirst. He died in a coast hospital several days later without telling anyone where he found a large black gold nugget found in his possession. It is possible Smith may have found the nugget by the skeleton of another prospector who had reached the mine and died of heat and thirst on the way out.

For many years after the death of Peg-Leg Smith, strange stories continued to come out of the desert telling of dead Indians and large quantities of black gold scattered over the desert at the foot of a small black mountain in the center of a dry lake bed somewhere northwest of Cottonwood springs.

Many years later a white man arrived in San Geronio pass and stated he was going to seek the lost deposit of black gold.

Enlisting the aid of a partly civilized Indian who was less superstitious than other tribesmen he cached food, water and grain for animals at intervals across the desert. After many months of preparation the two men set out across the desert in a buckboard pulled by two small Mexican mules. They camped each night at the stations where food and water had been stored and after several days arrived at rim rock where the mesa dropped off abruptly almost a hundred feet and then sloped to the floor of a valley stretched out into the distance as far as the eye could see.

A narrow crevice was found in the steep wall and through

this the mules were led down to the valley below. The buckboard was then dismantled and lowered over the cliff by the use of a windlass and long rope that had been brought along for the purpose. After loading the buckboard with food and water they again set out across this lower plain. After traveling two days their progress was halted by drifting sand dunes that blocked the progress of the mules and the wagon.

As the chimney-like mountain was now looming in the distance, it was decided to unhitch the mules and ride them the balance of the way. As they approached their destination they came upon a skeleton near which was an empty water gourd and a small pile of black gold nuggets.

Gathering the nuggets they continued to the foot of the black butte.

The igneous intrusion which formed the mountain was a jumbled mass of black heat-seared rocks interspersed here and there with large and small chunks of brown hematite of iron. Scattered around the foot of the mountain on the hard ground were thousands of small nuggets all worn smooth like the rocks and iron with which they were found. When the film of manganese was scraped off beautiful yellow gold was disclosed.

Near the base of the mountain were thick beds of a yellowish powder that was kept in a constant state of agitation by the winds that swirled over the little valley in which the pinnacle stood. The summit of the peak was cone-shaped and was full of kaolin and smooth pieces of hematite of iron. The hot rays of the sun beat down into the little valley and, reflected by the varnished rocks made it almost like an oven. As the mysterious yellow dust settled on their perspiring bodies it burned like fire, and when breathed into the lungs it almost choked them.

Since it would be impossible for them to remain for any length of time in such a place, the two men gathered as many of the gold nuggets as they could pack and after several hours arrived at the buckboard with gold they estimated to be worth \$65,000. Before reaching the outer edge of the desert again their throat and lungs were parched from breathing the poisonous yellow powder and the skin of their hands and arms began to peel off. They finally reached civilization more dead than alive. It was many months before they recovered.

The proceeds of the trip were divided equally between the two partners. The white man purchased a small ranch in California. Neither of them ever made another trip to the valley of gold, but upon his deathbed a few years ago the white man told two old friends the secret of the black gold that is said to be guarded by the mysterious yellow powder and by the fierce heat of the desert itself.



Life on top of Ghost mountain is never dull—even when the hot days of summer come. In his diary this month Marshal South reveals some of the problems that he and Tanya and their two sons face in July—and also some of the compensations of their primitive existence on this remote desert mountain.

DESERT DIARY

By MARSHAL SOUTH

July at Yaquitepec

EAT! — and the distant phantoms of mirage. Desert summer is with us now and Yaquitepec shimmers in the beat of a midday glare that is thirstily metallic. Birds cower, droop-winged and panting, in the shelter of the junipers; and upon the dry, scorching earth the snaky wands of the ocotillos throw sharpened shadows that are black as jet.

It is hot these days. But not too hot. The human system is adaptive; it adjusts speedily to its environment. The desert dweller becomes used to his summer with its tingling strike of dry sunshine. The heat that really sets him gasping and complaining is the humid choke of supposedly more favored sections.

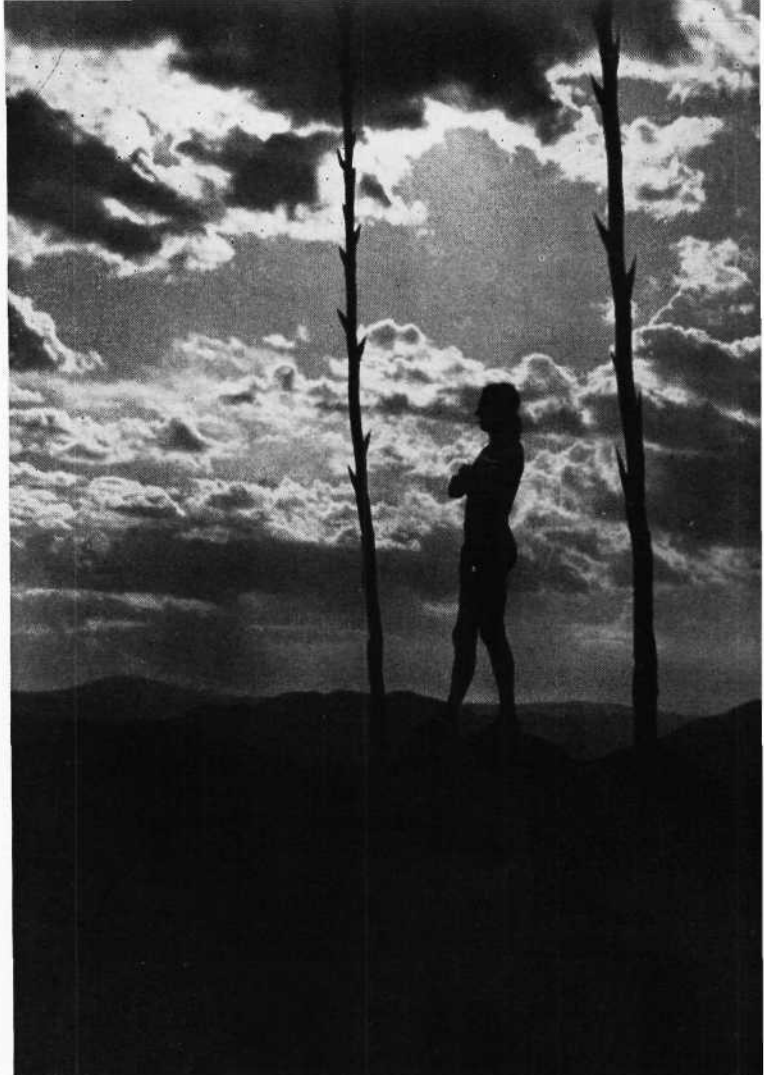
There is a good deal of myth about the terrors of desert summer. It is born, most of it, from inexperience and from a curious American trait of deliberately refusing to conform to climatic conditions. The "old people" and the early Spaniards were wiser. It was not indolence but sound sense that created the midday siesta habit. With a commonsense adaptation to conditions the desert in summer is as much a region of enchantment as at any other season. And with charms peculiar to itself.

Nowhere but in the desert, and in summer, can you see such magnificent cloud effects as those which tower into the hard, turquoise sky above the heat-dancing wastelands. These mighty mountains of dazzling white and ominous grey cease to be clouds. Rather they are the Titan sculptures of invisible gods. Sinister they are often. And awe inspiring. Small wonder that you will find no glib atheists among the dwellers of the unspoiled wasteland. Such things belong to the shadows of smoky walls; to the dulling thunder of machinery and the milling of tired crowds.

Out where the little thirsty winds run panting across the shoulders of sun-furnaced buttes there is no room for disbelief. The message is in the sky and in the wide sweep of the glowing earth. To Indian and to white man alike the mighty thunderheads that march across the blue vault, their crests lifting white into staggering immensity, their footsteps tracking league-long blots of indigo upon the panting earth and their voices calling each to each in hollow rumble, speak of the Great Spirit. The arrows of His wrath are in their hands and the rain of His infinite mercy is in their hearts. Atheists do not flourish in desert solitudes.

But the marching cloud giants that come stalking up out of the mystery of the Gulf of Cortez are but one of the attractions of Yaquitepec in summer. There is the heat. Heat is not just "heat." It is something that grows upon one. It is fundamental with life. Desert heat is electric. Scientists, whose mission in life it is to make simple things as confusing as possible, will tell you that it is ultraviolet rays. Possibly! But shorter terms for it are life and health. The Indian knew nothing about ultraviolet rays. But he did know about health; before he was spoiled.

And some still remain unspoiled. The Tarahumare Indians



This picture of Marshal South taken on top of Ghost mountain against a sunset sky. The two agave stalks are just about to burst into bloom.

of Mexico belong—or did belong, if they have not been changed within the last few years—to the unspoiled clan. One of the Tarahumare joys was to bask naked in the sun in temperatures that would almost frizzle a white man. And the Tarahumares were noted for their endurance. One of their sports, indulged in by both men and women, was long distance running.

Perhaps it is another indication of how far and how shamelessly we of Yaquitepec have slipped from the skirts of civilization in that we also like to bask on the rocks in summer. Sometimes the rocks are pretty hot, and they have a damp appearance afterwards as though something had been frying on them. But as you lie there you do not think of these things. All you can feel is the tingle of life and of electricity striking healing rays through every bone of your body. Try it sometime; but little by little and gradually at first.

Yesterday a whirlwind came and charged down upon the house in an attempt to scatter our shade ramada. These summer whirlwinds are mysterious things. You hear them coming up the mountain, roaring and grumbling. And, because of the absence of light soil among the rocks that would make dust, you can see nothing. It is like listening to the approach of a disembodied spirit; often not until it leaps upon you can you tell just where it is. Yesterday's was a big one. Rider and Rudyard were up on the garden terrace, watching the uncouth antics of Satan, the big black scaly lizard who makes his living up there catching flies. And all at once, from the shoulder of the mountain rim, there was a coughing roar. Rudyard took one peek at emptiness and twinkled brown heels in headlong flight for the house. Rider, with something of the

spirit of a scientist, stood his ground, peering and squinting. He at least knew what the roaring invisible thing was. But he could not locate it.

Not until suddenly, a dead bush and a couple of dry mesal poles leaped into the air from just behind him and went sailing a hundred feet into the sky. And the next instant, as he crouched, grabbing at a big boulder for support, the thing yelled past him and fell upon the house. Doors banged and roof iron strained. There was the shrieking hiss of wind through the porch screens and the tied bundles of mesal poles of the ramada roof surged and rattled as Tanya came darting out, snatching at wildly slamming window shutters, Rudyard yelling lustily at her heels. Then the thing was gone, hurtling away in a wild leap back over the mountain rim. We saw dry bushes, bits of paper, an empty sack and the two mesal poles hung grotesquely in the sky—far up and still spinning. Then the hot stillness flowed in again; the wildly threshing ocotillos quieted. Satan came out of his rock cleft and waddled his fat metallic sheened bulk back onto the terrace, headed for a new fly victim. Rider came down the trail blinking the sand grains out of his eyes. "Phooey!" he said. "That was the biggest one ever. You ought to put some more screws in the roof iron, Daddy."

But it is not often that our desert twisters are so large or hit us so squarely. Usually they are just phantoms, rushing out of nowhere and tearing off into silence along the ridges. We feel rather kindly towards them. Their mood of mystery suits the atmosphere of Ghost mountain.

Summertime is "bug time" it is true. But really there are worse bugs in other sections than the picturesque crew that

inhabit the desert. The scorpions perhaps are the most fearsome. Especially the big ones, four to six inches in length and with a corresponding spread of claw. But these big fellows are in about the same proportion in the scorpion world as are city gangsters in our own social setup. The sting of these magnates we have so far managed to avoid. But the venom of the rank and file—little fellows ranging in size from an inch upward—is no more painful than that of a honey bee.

For a long time, remembering the prowess of the scorpions of Durango, the hot country of Jalisco and of other parts of Mexico, we trod in fear of them. Then one day Tanya, groping for a new typewriter ribbon in the depths of a box filled with old letters, was stung. Her prompt recovery from the pain, with no ill effects, exploded the scorpion myth. Both of us have been stung on several occasions since and we pay little attention to it. This is no attempt to whitewash the scorpion tribe. Some of the Mexican "hot-country" ones, especially where children are concerned, are deadly. The small Ghost mountain variety is practically harmless.

The centipedes however are not so pleasant; especially when the spirit moves the six and eight inch ones to take tight rope exercises along the roof beams over the beds. The big ones are "bad hombres," to be wary of. But here again the little fellows are in the majority. Their chief sin, as far as we are concerned, is that being flat and slender they can squirm through negligible crevices; and therefore the covers of water cisterns and all other regions barred to bugs must be exceptionally tight fitting.

And this also goes for the ants. Our Ghost mountain ants are well behaved and seldom drink to excess. Except in the hot reaches of summer. Then they go crazy for moisture. They will go anywhere, and to any lengths, to obtain it. It is not enough to screen a water cistern. It has to be absolutely ant tight or it is likely, at the end of summer, to contain less water than dead ants. In a way they seem a bit confused in their knowledge of water. They will walk down into it and under it until they drown, as humans might walk to destruction under some heavy, invisible gas. Their habits in this respect are annoying. But with food supplies they give us little trouble. We have found a certain defense against them. When we first came to Ghost mountain we religiously kept the legs of all food cupboards in tin pans filled with either water or kerosene. This was effective if properly attended to. But the pans were always running dry, or grass stems and wind blown twigs would make bridges for the marauders, so one day we shifted to the trick of just painting the legs with ordinary creosote. It worked marvels. It doesn't look particularly handsome, but it is 100 percent effective. And the painting is renewed only at long intervals. Not only ants but all sorts of other bugs give creosoted cupboard legs a wide berth.

The yellow glory of the Ghost mountain mesal flowers has departed. But the seed pods which have succeeded the flowers are full and plump. They look like elongated green pecan nuts, arranged in bunches somewhat like small upstanding clusters of bananas. The mountain squirrels like them, and many of the mesal heads are already denuded of seed pods by their raidings.

We are watching anxiously for rain. Each day now, when the mighty thunderheads form upon the horizon and march in upon the shimmering glare of the wastelands, we watch them with hopeful eyes. But so far Ghost mountain is not on their schedule. Their shadows fall black and mysterious over the distant buttes; their cannonading rolls across the wasteland and the black skirts of their local torrential downpours beat dust from a thirsty desert on our very borders. But the crest of Ghost mountain they ignore. They will come, however, in time. Patience is a virtue that is a desert necessity. Mayhap they will come in August.



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Southern Pacific

TUNE IN KFI 9 P.M. WEDNESDAY—"ALL ABOARD"

Indians used ephedra for medicinal purposes, the Mormons found that it made an excellent substitute for tea, and many dwellers on the desert today regard it as a very palatable beverage. You would not recognize it as such—but the botanists tell us it is a distant cousin of the pine tree. Not a very striking shrub in appearance, but it is one of the most common plants on the desert—and here is an opportunity for you to become better acquainted with it.

Ephedra

**It is tonic for the Indians,
tea for the Mormons**

By LETHA M. OLSON

ONE night our little group of desert explorers from the coast camped near the old Vallecito stage station in Southern California. The men in our party had been out prospecting the hills that day—while my friend and I, always on the lookout for a new plant, had gathered some twigs of ephedra—*Ephedra californica*.

We found it growing abundantly in Mason valley—and this was an opportunity to have real desert tea for supper. We broke the twigs, using flowers and all, and allowed them to simmer slowly in water over the campfire. We soon had a clear yellow tea, very pleasant and fragrant, to drink with our meal.

Some desert dwellers prefer to use dried twigs only, but I have found that the green plant makes quite a delicious beverage. It does not become strong, even if boiled for some time. Like other teas, it may have sugar or lemon added, according to individual tastes.

It is a stiff, broom-like plant two or three feet high, occasionally five or six feet. The jointed stems are dull yellowish green and are thicker than those of other species. Unlike the ordinary flowering shrub, these are cone-bearing. The male and female blossoms are on separate plants, the staminate or male being in small catkins or cones with prominent yellow stamens. The inconspicuous pistillate or female catkins consist merely of greenish, papery scales, three of the catkins being borne at each node or joint.

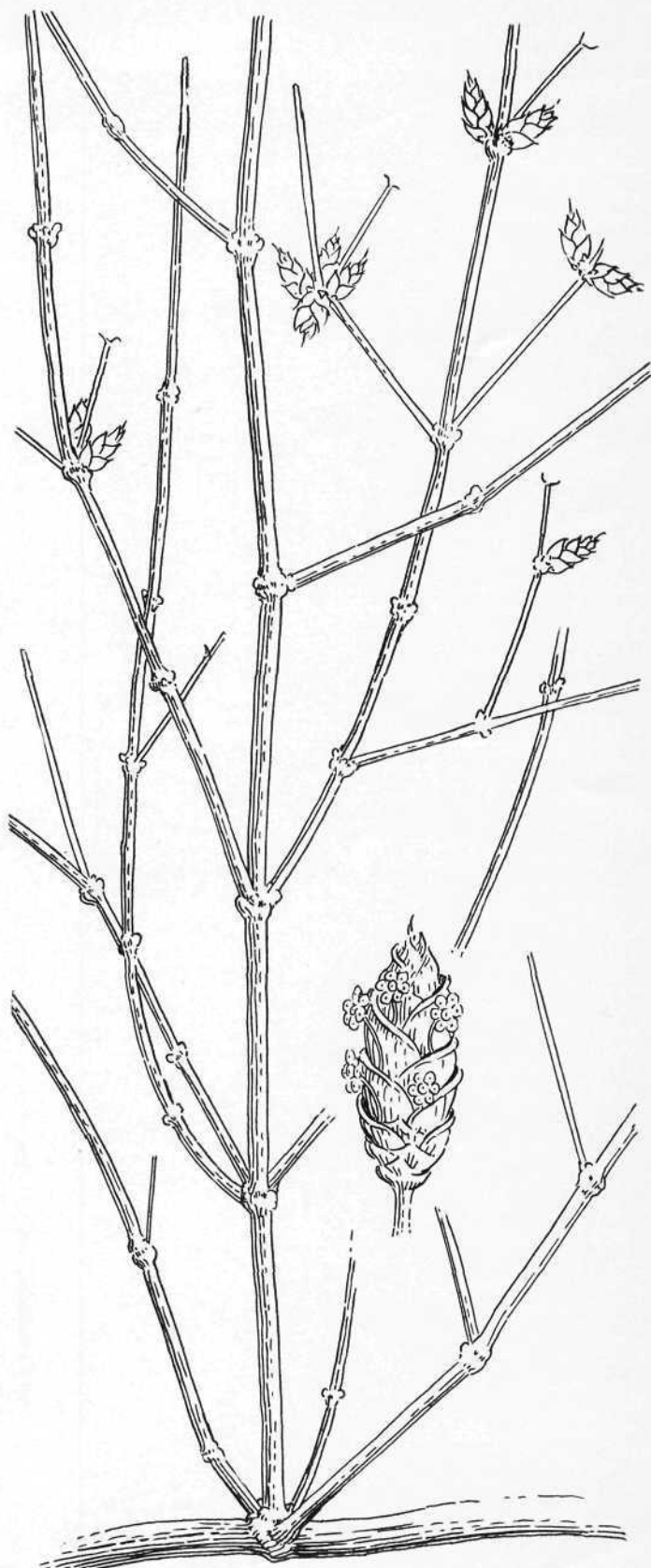
This species is common in low altitudes of both the southern Mojave and Colorado deserts, extending west to San Diego and south into Lower California. It is commonly known as desert tea, squaw tea and Mexican tea. Valued highly by the Mormons, it is also known in some localities as Mormon tea. In the early days the Spaniards called it *cañutillo*, meaning small tubes or pipes, a term descriptive of the stems.

The tannin-containing stems not only produce a fragrant beverage, but also an infusion considered valuable for the relief of colds, headaches and fever. Desert tea is included in present day pharmacopoeia, several remedies being made from it.

Here are a few other species likely to be found by anyone traveling in the southwest desert region:

Ephedra funerea. Found in Death Valley. This plant is very symmetrically rounded, and its grey-green branches are shorter than in other species. Similar to the next species, but the leaf scales are in threes.

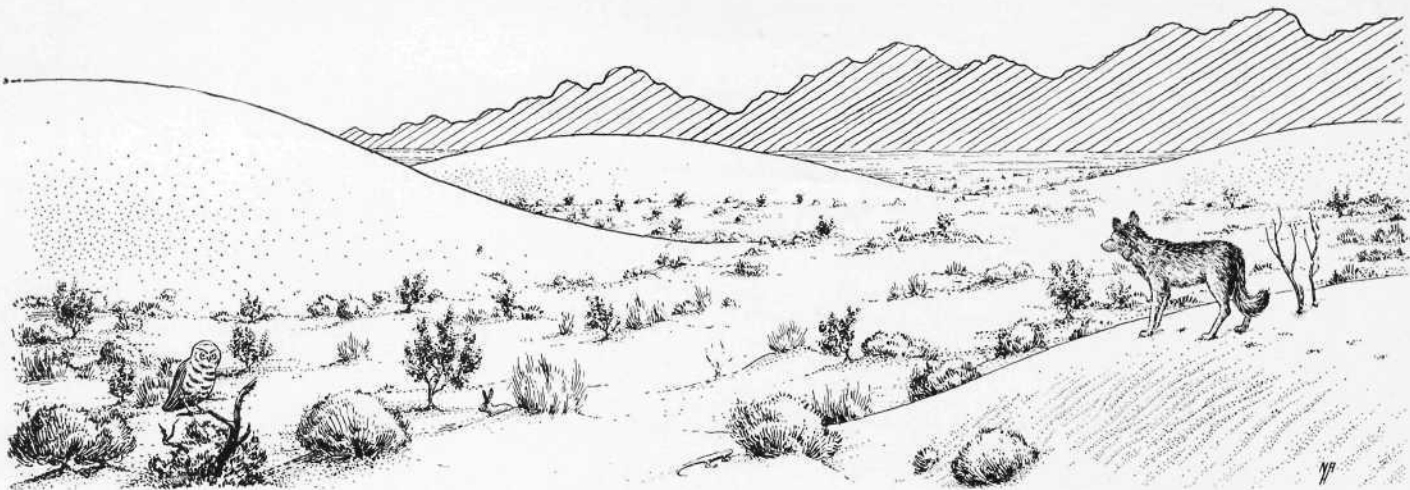
Ephedra nevadensis. Common in rocky soils of foothills below 4500 feet in both California deserts and in Nevada,



This sketch by Norton Allen shows the detail of ephedra plant and flowering male cone.

Utah and Arizona. Erect bluish green stems, leaf scales and bracts arranged in twos.

Ephedra viridis. Its many erect stems are bright green and the leaf scales occur in twos. It is found in higher desert elevations up to 7500 feet, generally associating with junipers and piñons in the Mojave desert, and reaching into Utah and New Mexico.



COYOTE

By IVAN T. DOWELL
San Diego, California

It is midnight on the desert, and the moon is hanging lone
O'er the valley of illusion in the hills.
Mid the silence on the desert there are shadowgraphs that moan
With the shuddering coyote as he shrills
Down the mazy molten valley in some temple there of stone,
A mournful paean that the night with weeping fills.

There are passions on the desert that have slept a thousand years
Where their bones were blanched by long departed suns;
There are later dreams of glory lying stark with ancient fears;
Swords and arrows, knives and hatchets, whips and guns.
Mute they lie there, but Coyote lifts a wailing filled with tears,
Giving tongue to all the desert's Silent Ones.

There are rovers up from Phasma, there are nomads of the night,
Riding up in silent stricken bands;
There are memories of granite that are moved to sudden might
From their slumber in these ancient Indian lands.
Stirred is every king of plunder, lord of gold, and chief of fight,
By the passion of Coyote — God of Sands.

DESERT MOOD

By OLIVE McHUGH
Salt Lake City, Utah

The trance-like beauty of the desert night,
Moon-touched, projects a new world clad in light,
Where sounds do not distract nor shadows sprawl,
Each bush stands etched as if no leaf could fall.

From slothful mud to godlike beauty grown,
Man makes a silver sovereignty his own;
He should not feign nor his true thought conceal
But from his mind make substance of ideal.

Sketch by Norton Allen

To the Colorado Desert

By MADGE MORRIS WAGNER

Thou brown, bare-breasted, voiceless mystery,
Hot sphinx of nature, cactus-crowned, what hast thou done?
Unclothed and mute as when the groans of chaos turned
Thy naked burning bosom to the sun.
The mountain silences have speech, the rivers sing.
Thou answerest never unto anything.
Pink-throated lizards pant in thy slim shade;
The horned toad runs rustling in the heat;
The shadowy grey coyote, born afraid
Steals to some brackish spring and laps, and prowls
Away, and howls, and howls and howls and howls,
Until the solitude is shaken with an added loneliness,
Thy sharp mescal shoots up a giant stalk,
Its century of yearning to the sunburnt skies,
And drips rare honey from the lips
Of yellow waxen flowers, and dies.
Some lengthwise sun-dried shapes with feet and hands
And thirsty mouths pressed on the sweltering sands,
Mark here and there a gruesome graveless spot
Where some one drank thy scorching hotness, and is not.
God must have made thee in his anger, and forgot.

THINGS THAT MAKE FOR PEACE

By GASPAR BELA DARUVARY
Hemet, California

Not what we have, but what we use;
Not what we see, but what we choose—
These are the things that mar or bless
The sum of human happiness.

The things near by, not things afar;
Not what we seem, but what we are—
These are the things that make or break,
That give the heart its joy or ache,

Not what seems fair, but what is true;
Not what we dream, but good we do—
These are the things that shine like gems,
Like stars in Fortune's diadems.

Not as we take, but as we give,
Not as we pray, but as we live—
These are the things that make for peace,
Both now and after Time shall cease.

PATIENCE

By CHARLES F. THOMAS, JR.
Parker Dam, California.

To run?
When lonely, dim and unmarked desert trail
Will lead tomorrow to the selfsame place
To which it leads today? Wise in his pace
The tortoise slow, within his coat of mail
Has worried not nor hastened through the day.
Content is he to rest along the way.

To thirst?
Rough, scraggly shrubs with spine and prickly thorn;
Sandscarred, windworn and seared by sun's hot ray
Live through the years, yet bloom in beauty gay.
While desert creatures come at e'en and morn
And wait with anxious hopes the storm god's doles.
To seek the dripping springs and waterholes.

And e'en
With man, whose lot has here been strangely cast
To live awhile, to work and then to be
A silent part of life's Great Mystery,
One thing is learned from out the ages past:
Haste not nor strive to change the desert's mood!
With patience live! Be blest then with its good!

REASON FOR BEING

By J. J. CANNYSON
Los Angeles, California

A rain cloud to a desert said,
"May I pour water on your head?"
"Nay," said the desert, "that would be
A foreign element to me."

"But you are dry," the rain cloud cried,
"And death sits ever by your side.
A little water will make rife
A thousand teeming kinds of life."

"That may be true but don't you see
I then would not a desert be,
And many things that I sustain
Could not exist had I much rain."

CREED OF THE DESERT

By JUNE LE MERT PAXTON
Yucca Valley, Arizona

Miss Willow put on her gown today,
All covered with orchids petite:
But she took time to say, in a nice friendly way,
"Miss Catsclaw, your plumes are elite."

TRUE OR FALSE

Here's a new test for those who pride themselves on their knowledge of the desert country—or for those who are seeking a more intimate acquaintance with the history, geography, botany, mineralogy and Indian life of the Southwest. There's a liberal education in these monthly quiz lists published by the Desert Magazine. If you answer 10 of these correctly you are better informed than the average person. If your score is 15 you can qualify for exclusive Order of Desert Rats, and if you exceed 15 you belong to that distinguished fraternity who are entitled to write S. D. S. after their names—Sand Dune Sage. Correct answers are on page 38.

- 1—The Apache rebel, Geronimo, was killed in battle. True..... False.....
- 2—Highway 66 crosses the Colorado river at Topoc. True..... False.....
- 3—Certain species of desert birds build their nests in Cholla cactus.
True..... False.....
- 4—The Great White Throne is in Zion national park. True..... False.....
- 5—Death Valley is a California state park. True..... False.....
- 6—According to fable the seven cities of Cibola were located in what is now the state of New Mexico. True..... False.....
- 7—The capital of Nevada is Reno. True..... False.....
- 8—South rim of Grand Canyon is higher than the north rim.
True..... False.....
- 9—The native Elephant tree is found in certain parts of Arizona.
True..... False.....
- 10—Free gold is often found in quartz. True..... False.....
- 11—Hopi Indian reservation is entirely surrounded by the Navajo reservation.
True..... False.....
- 12—Bill Williams was a famous steamboat captain on the Colorado river.
True..... False.....
- 13—Squaw tea, or Ephedra, was used by the desert Indians as a narcotic.
True..... False.....
- 14—First known white men to visit Carlsbad caverns were the Spanish padres.
True..... False.....
- 15—Wild turkeys are still to be seen in the White mountains of Arizona.
True..... False.....
- 16—Ultraviolet rays of the sun are believed to have caused the petrification of the wood in the Petrified Forest national monument. True..... False.....
- 17—Capt. Palma was the name of a famous Yuma Indian chief.
True..... False.....
- 18—Blossom of the desert willow tree is yellow. True..... False.....
- 19—Sunset crater in northern Arizona is believed to have been caused by the falling of a giant meteor. True..... False.....
- 20—"The Winning of Barbara Worth" is the story of the reclamation of Imperial Valley, California. True..... False.....

THE DESERT TRADING POST

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—actually about 2½ cents per thousand readers.

POINTS OF INTEREST

LIVING ON THE DESERT stimulates new life interest therefore choose a good Desert Village, Cathedral City, California. See W. R. Hillery.

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BOOKS for gem and mineral collectors. May be obtained by addressing Desert Crafts Shop, 636 State St., El Centro, California.

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BLACKBURN MAPS of Southern California desert region. San Bernardino county 28x42 inches \$1.00; San Diego county 24x28 inches 50c; Imperial county 19x24 inches 50c. Postpaid. Add 3% sales tax in California. DESERT CRAFTS SHOP, 636 State Street, El Centro, California.

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LOS ANGELES CALIFORNIA

HERE AND THERE . . . on the Desert

ARIZONA

Florence . . .

A wild burro is the wildest thing alive. This is the studied opinion of Jim Hathaway, cowpuncher turned burro-hunter. Wild burros are the offspring of once tame animals turned loose on the range. Hathaway has been rounding up the critters in the rugged country of the upper San Pedro. There are many herds, some numbering 20 or more. Each burro must be captured separately, trapped or roped. By truckload the captured burros are taken to Phoenix. They are sold to manufacturers of dog and poultry food. Old-time prospectors condemn this business. Without burros the southwest would never have been settled, they say.

Prescott . . .

Achievements of Grace M. Sparkes, secretary of the Yavapai associates, were recognized when a new highway bridge in Williamson valley was named in her honor. Women's organizations of the county arranged a dedication program when the bridge was christened in June.

Window Rock . . .

Outside a Navajo hogan near Lupton a mother cat was nursing her fat kitten when an owl swooped at the kitten. Mama cat attacked the owl while kitten fled. Owl's claws tangled in cat fur and mama dashed under the blanket door of the hogan into the midst of the Indian family seated around the fire. Sight of owl riding cat was too much. Navajos, young and old, took to their heels. Later the Indians arranged for a special "sing" by a medicine man to avert possible evil effects of the visitation.

Phoenix . . .

Search for the world's largest natural bridge, located according to rumor, in southern Utah, is one of the objects of a July expedition by boat down the Colorado river from Green river, Utah, to Lake Mead. Barry Goldwater of Phoenix is one of nine explorers headed by Norman Nevills, veteran riverman. Schedule calls for 40 days on the river, arrival at Boulder dam about August 25. Photographic records will be made, study of the river's part in carrying seeds from the high country to lower lands.

Polacca . . .

Hopi, Navajo and Tewa Indians, federal government officials and citizens from Utah and Arizona joined in tribute to Thomas Polacca, Hopi leader, with dedication of a monument to his memory. In a two-day program during joint conference of Hopi and Navajo missions, Vinton Polacca, son of Thomas, was featured. He sang songs in four languages. A plaque on the monument reads: "Tom Polacca, 1853-1911. Leader of the Corn Clan of the Hopi tribe, a progressive man far ahead of his time, was a man of unusual wisdom. Although vigorously opposed, he spent much of his life working for the education, sanitation and elimination of disease among his people. He assisted Dr. J. W. Fewkes of the Smithsonian Institute in compiling his book on Hopi traditions and ceremonies. He urged his people to abandon the mesa top villages and settle on broader valley lands. Upon accepting Mormonism, he reconciled his Hopi traditions with the teachings of his church."

Tucson . . .

Ghosts of the 1860s hold sway again in old Tucson. Replica of the pioneer community was abandoned late in June, after cameramen took their final shots for the film "Arizona" on the set built in Tucson mountain park.

Keams Canyon . . .

Cut deep in the rock of northern Navajo county near here is an inscription: "Co. K 13th Inf. 1st Regt. N. M. Volunteers, Col. C. Carson, comm. Aug. 13th, 1863." It marks the spot where Kit Carson and a small band of his scouts, besieged by Indians, held off hostiles three days until the whites were rescued. One of Kit's troopers carved the words. Several organizations are asking the federal government to set aside the site as a national monument.

Grand Canyon . . .

Despite sharp reduction in number of visitors during May, due to an upset world, Grand Canyon's guest list from October 1939 to date is far ahead of the corresponding period in the preceding travel year. In May 1940 register shows 25,882 persons as against more than 28,000 for the same month in 1939, a drop of 14.72 percent.

Flagstaff . . .

Arizona census reports 51,730 Indians in the state, an increase of 12,233 over the total for 1930. Navajo and Hopi made the greatest gains, from 24,351 to 32,900. Pimas take third place with 6,087. Census takers had no easy job counting red noses. Some Indians called the enumerators "the askers of useless questions." Some Papagos deserted their villages, hid in nearby hills until baffled nose-counters gave up in disgust and went away.

Wickenburg . . .

Dedication of Hassayampa wishing well closed this city's Old West celebration in June. Strange powers are ascribed to the Hassayampa well. Drink one time there and never again can you tell the truth, tradition says. The well has been covered with a rustic roof, a corral encloses it. One rhym-er wrote:
"And if you quaff its waters once
It's sure to prove your bane
You'll ne'er forsake the blasted stream
Or tell the truth again."

CALIFORNIA

Indio . . .

Because of fire danger in the dry season brush area in San Jacinto mountain district of San Bernardino national forest has been closed to all use during summer months, announces district ranger Richard May. North and south fork of San Jacinto river on the western slope are included in forbidden territory.

El Centro . . .

Water will be turned into the All-American canal about September 1, according to the report of Reclamation bureau engineers. The canal was practically completed a year ago but when "seasoning" operations were started there was severe seepage from some sectors of the ditch. These leaky sections have now been clay-lined and a drainage canal is being excavated parallel to the canal through the Winterhaven valley as an added safeguard for farmlands in that area.

Death Valley . . .

Death Valley Scotty wants more time to search for \$100,000 in Uncle Sam's gold notes he says he cached 30 years ago on the desert. In answer to his query whether he would be sent to jail or fined if he located the outlawed yellowbacks, the federal government sent a sheaf of documents and Scotty has been studying them. Official ruling seemed to indicate that if he found the \$100,000 gold notes the government would take them, fine him \$100,000 more and send him to jail for 10 years. A saving clause suggested that if recovery of the money involved extraordinary hardship the secretary of the treasury could grant time extension for delivery. Asking now for an extension to October 1, 1941, Death Valley's No. 1 publicity promoter explains landmarks have changed during the 30 years since he buried money in the mountain ranges. In the past few years, he says, he has had mishaps such as "broken ribs, loss of one finger tip, broken ankles and crippled feet from falls in the rocks and other accidents." Now he believes he is able to take up the search again for his treasure, he writes to Washington.

Independence . . .

Amateur photographer Allan S. Taltavall of Redlands claims record ascent of White mountain peak, reports he climbed to the top and returned in 15 hours. Taltavall says he drove his automobile to the 6000-foot level up Leidy canyon on the east side of the range, set out on foot at dawn, gained the peak at 2 p. m. On the way up he saw two mountain sheep. He took infra-red pictures of the Sierra range, was able to see views from south of Mt. Whitney to peaks around Yosemite.

Palm Springs . . .

Destructive fire in June swept through Chino canyon, important source of Palm Springs domestic water supply. At one time the canyon was one of the most popular picnic spots near this resort. It has been closed to the public for many years because of danger of polluting the water supply. Local fire department, federal forest service men fought the blaze, estimated to have burned over more than 500 acres. Sudden gust of wind from the desert blew fire from under a tarpot in use by workmen repairing the waterline, thus starting flames which were not subdued until after three days.

NEVADA

Reno . . .

Pyramid lake, at one end of the Truckee river, is 58 feet lower than it was 77 years ago, but the surface of Lake Tahoe at the other end of the Truckee is within about three feet of its highest recorded level, reports Watermaster H. C. Dukes. Tahoe is 6228.17 feet above sealevel, Pyramid's surface is 3818.64 above sealevel, nearly 2410 feet below Lake Tahoe.

Work is under way on a \$250,000 flood control, irrigation and fish habitat project for the Pyramid lake Indian reservation. It is proposed to build a dam and canals to divert part of the flow of the Truckee river south of the lake.

Las Vegas . . .

Reclamation bureau has given preliminary approval for development of Nevada's first irrigation project using Colorado river water, says Congressman Scrugham. Nearly 4,000 acres of land below Boulder dam in the extreme tip of the state are included in plans. Development terms are fixed under the law limiting individual holdings to five acres, which may be leased or purchased for home, camp, health, recreational, convalescent or business purposes.

Boulder City . . .

Both houses of congress approved the Boulder canyon project adjustment act, to revise operation of the power plant at the dam, lower base rate for power, make annual fixed payment of \$300,000 each to Nevada and Arizona and set up a Colorado river development fund. One minor difference between House and Senate remained to be ironed out late in June, before sending the bill to the president for signature.

Las Vegas . . .

Income from Boulder dam power for the present fiscal year will exceed \$4,000,000 bringing power plant revenues from July 1, 1937 to June 30, 1940, to approximately \$11,000,000. Gross returns from power are about \$2,000,000 ahead of anticipated revenue. Unexpected demand for power is responsible for success of the project, far beyond predictions.

NEW MEXICO

Las Cruces . . .

In popularity White Sands led all 27 southwestern national monuments during May, according to government reports. During the month 3870 visitors were registered at White Sands. Total attendance for all southwestern monuments during the period was 14,796.

Santa Fe . . .

Transmountain diversion of water from the San Juan into the Chama river is proposed in a \$4,750,000 request now before congress. According to state engineer Thomas McClure the works will cost \$20,000,000 ultimately.

Gallup . . .

Navajo tribal council turned thumbs down on a resolution to wipe out the tribal superstition that mothers-in-law are reincarnated as bears and that for a son-in-law to look on his mother-in-law's face is worst of possible luck. Councilmen refused to listen to their chairman when he moved to abolish the mother-in-law taboo.

Albuquerque . . .

Nearly all deposits in Sandia cave northeast of here have been examined by Dr. Frank C. Hibben of the university of New Mexico and archaeological excavation work there has been completed. In this 10,000-year-old home of prehistoric man numbers of so-called "Folsom points," primitive lance heads, have been found. Elephant and bison bones were uncovered. Prof. Kirk Bryan of Harvard's geology department is studying the cave this summer to determine its age.

UTAH

Salt Lake City . . .

Young Indian braves are answering Uncle Sam's call for defenders. Reservation superintendents attending a meeting of the Inter-mountain Indian agency council here reported many Indian youths are enlisting in the United States army, navy and marine corps. Shoshones prefer modern houses or log cabins to wigwams, the council heard. "Wigwams are on the way out," said Charles Spencer, agency superintendent of the Western Shoshones.

Vernal . . .

Utah's water storage commission has gone on record again opposing establishment of proposed Escalante national monument for recreation area in the Colorado river basin. The commission fears creation of the park would retard development of Utah's water resources. Two of the state's best damsites are said to be in the area along the Colorado scheduled for inclusion in the monument.

THE SPIRIT OF

76

by JOHN CLINTON



You know, in writing these columns I feel a certain obligation to my readers—if any—to report on

Union rather than just advertise it.

That explains why when the boss said: "Write something about our Stop-Wear Lubrication being different from ordinary lubrication," I said: "Different how? Aren't all lubrication jobs the same?"

Well, they took my Hispano-Plymouth and gave it a regular Stop-Wear job. When they brought it back, they said: "Now look, Clinton. We want you to observe 3 things:

"You can see the difference, feel the difference, and hear the difference. Get in and drive around the block, then quit being a skeptic!"



Which I did. Wow! I could feel the difference in the way it steered! I did hear the difference

in the way it sounded—quiet as a whisper, and as for seeing the difference, that was obvious—car dusted off, tires and running boards dressed, glass gleaming, even the interior cleaned out!

Don't just take my word for it. Drive down to your Union station and have 'em do a Stop-Wear job on your car. Then, drive it. If you don't agree it's got anything beat you ever tried before, then may I never write another column in all my life.

UNION OIL COMPANY



On the Trail of a Rare Cactus

By GEORGE OLIN

MY interest in *Utahia sileri* was first aroused some years ago when a friend said he believed it was the rarest cactus native to the United States. That was the challenge which made me resolve to find and photograph it.

The opportunity came when I was suddenly called to Utah. On my return trip to Los Angeles, I determined to go by way of Pipe Springs, Arizona where the species was first found. I also wanted to find some trace of the amateur botanist Siler who had discovered the species. Upon reaching Zion park junction, a service station attendant told me there was a John Siler living in Orderville, about five miles back. I retraced my way, hoping he would prove to be a descendant of the discoverer.

I pulled up before the shady porch of one of Orderville's main street stores, where a group of men were congregated. John Siler? Yes, you go down here two blocks, then turn to your left, and it's the second house from the next corner.

When the door opened, I found myself facing a tall spare man past middle age whose eyes were bright and alert. In response to my questions, he answered, "Yes, my father did collect and study plants, yes he did have a cactus named after him—sure, come on in and I'll tell you all about it as well as I can remember."

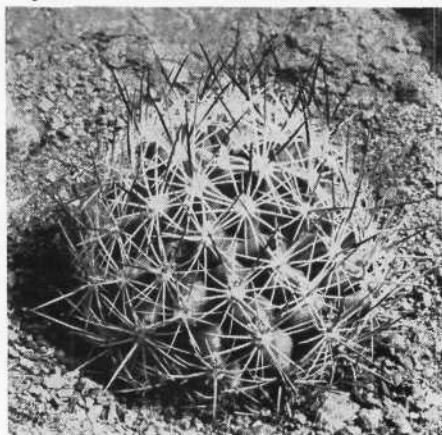
So I sat down and time rolled back to the early days in Utah. John Siler spoke of the early 60s and 70s—of the great cattle ranches established north of the Kaibab rim—of the Indians who grew hostile and massacred some of the Mormon settlers. A fort had to be built for the protection of the ranchers and their families, and because of the fine water supply, Pipe Springs was chosen for the site.

John Siler's father was one of the men who helped build the fort. During his free time he wandered through the nearby hills looking for plant material. While on one of these short trips he found the cactus now known as *Utahia sileri*. Noting that it was something new he secured a specimen, and after observing it for years, felt it was worthy of classification.

He sent a plant east where it came to the attention of Dr. Engelmann who first described it in 1896 as *Echinocactus sileri*. Britton and Rose in their revision of the cactaceae in 1923 created the new genus *Utahia*, and since that time it has remained a monotypic genus with *Utahia sileri* being its only species.

Leaving Mr. Siler, I drove down to Pipe Springs where I searched for hours without finding a single specimen. Apparently it has been collected until it is extinct at its type locality.

A year later, somewhere north of the Kaibab, Roy Miller and I shook hands over a



This photograph of *Utahia sileri* taken in its native habitat.

plant of *Utahia sileri*—not only in elation at finding this rare species but also as a salute to a pioneer who was a valuable aid to the botanists—a real field man.

Siler's cactus is not impressive in appearance or size. A low globose solitary plant nestled close to the earth, it will not exceed five inches in diameter. The plant body is covered densely with large blunt tubercles terminating in areoles which are crowded with short felted wool and protected with 11 to 15 radial spines and 2 to 4 central spines. Both radials and centrals are about the same length—1 to 1½ inches. They are of uniform grey color, the centrals having black tips. In age, the lower spines become ragged and the tips break away. In this condition they resemble a frayed toothpick.

The small yellow flowers are borne at the areoles of the upper part of the plant. The outer surface of the ovary and flower tube is covered with tiny scales which have lacy edges—these are known as fimbriate lacerate scales. The fruit is dry, as long as ⅝ inch and ¼ inch diameter. When ripe they split vertically allowing the seeds to escape down the side of the plant, where young seedlings are sometimes discovered.

WHITE OCOTILLO PRESENTED TO HUNTINGTON GARDENS

Highlighting the sixth annual Los Angeles cactus show held June 15 and 16 at Manchester playground, a rare white ocotillo was presented by John Hilton to William Hertrich, curator of the Huntington botanic gardens of San Marino.

Approximately 15,000 viewed the hundreds of cactus and succulent specimens exhibited under the sponsorship of the Southwest Cactus growers. Heading the show were Chas. A. Place, manager; Harry C. Beam, advertising; Homer Rush, floor manager; and Roy Miller and George Olin, president and secretary. Master of ceremonies was Eugene Biscailuz, L. A. county sheriff.

The sweepstakes cup, offered by Harrison

Chandler of the Times-Mirror company, was presented to Mrs. Florence Cariss. Other cups and plant prizes were awarded to the following:

Mrs. Hazel Miller, most colorful exhibit; Mrs. Ethel Rush, best show setup; George Olin, best educational exhibit; Mrs. Florence Cariss, best garden; Southern California Cactus exchange, best club exhibit; Mrs. Florence Cariss, best general collection; Mrs. LaNeta Olin, rarest xerophyte; Homer Rush, rarest cactus; Edward Taylor, best general collection of succulents; John Hilton, best non-competitive exhibit; George Olin, best collection of plant photos; Roy Miller, best collection of grafts; Waldie Abercrombie, best single genus of cactus; John Akers, best single genus of succulents; Mrs. Gertrude Beahm, best commercial exhibit; Charles Krueger, best miniature landscape; Billy and Nadine Beam, best junior exhibit; Billy Olin, best collection of cactus by a junior.

• • •

New director of the Desert botanical garden, sponsored by Arizona Cactus and Native Flora society of Phoenix, is Charles B. Fleming. The administration building closed May 15 for the summer, but will reopen in October. The grounds in Papago park will be open to the public continuously.

Close to 4,000 visitors were entertained from dedication day, January 21, 1940 to May 15. Forty-three states, Australia, England, Canada, Mexico, Alaska and Hawaii were represented.

• • •

The Cactus and Succulent club of Chicago has boosted its membership to about two dozen hobbyists. Organized in December 1939 by G. L. D'Aston, the group is now headed by Frank Kranz, president; Mrs. Cornelia Hunter, vice-president; Mrs. Rae Osgood, treasurer; and Thomas Koranda, secretary.

DESERT FLORA

• Here is a carefully selected list of textbooks for those who desire a more intimate knowledge of the flowering shrubs and cacti of the desert region.

DESERT WILDFLOWERS, Edmund C. Jaeger. A perfect handbook for those who would become better acquainted with desert flora. Illustrated with accurate pen sketches. 314 pages and index \$3.50

SUCCULENTS FOR THE AMATEUR, edited by Scott E. Haselton. Beautifully illustrated handbook for collectors and students, paper \$1.50, cloth \$2.00

CACTUS AND ITS HOME, Forrest Shreve. A readable book for cacti and succulent hobbyists. Illustrated. 195 pages \$1.50

DESERT CACTI, A. T. Helm. New edition of a unique booklet, illustrated with sketches 50c

CACTI FOR THE AMATEUR, S. E. Haselton. By a ranking cacti authority. Color illustrations. Paper cover \$1.00
Board cover \$1.50

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Desert Crafts Shop

636 State St.

El Centro, California

Here are the Rules for the Five-Acre Tracts . . .

Desert Magazine readers who have been waiting more than two years for detailed information as to how they may obtain cabinsites under the Izac Five-Acre-Tract law, passed by congress June 1, 1938, will be gratified to know that the regulations have now been completed.

Since much of the public domain which will be available for lease or sale to Americans under this law is in the desert Southwest, the full text of Circular No. 1470, signed by Secretary Ickes June 10, is published herewith.

This law differs from the long established homestead and desert claim acts in the fact that with the exception of business sites, the five-acre tracts to be leased or sold by the government under this enactment are not intended to provide a livelihood for the occupant—but are primarily for home, recreational and health purposes.

Application forms and such further information as is available may be obtained from all U. S. land offices after July 27. No applications will be received before that date.

LEASE OR SALE OF TRACTS, NOT EXCEEDING FIVE ACRES, FOR HOME, CABIN, CAMP, HEALTH, CONVALESCENT, RECREATIONAL OR BUSINESS SITES.

UNITED STATES
DEPARTMENT OF THE INTERIOR

General Land Office
Washington

Sec. 257. 1 *Statutory authority; lands which may be leased or sold.* The act of June 1, 1938 (52 Stat. 609; 43 U. S. C. 683a), authorizes the Secretary of the Interior, in his discretion, to lease or sell to any person who is the head of a family, or who has arrived at the age of 21 years, and is a citizen of the United States, or who has filed his declaration of intention to become such a citizen, as required by the naturalization laws, a tract of not exceeding five acres, in reasonably compact form, of any vacant, unreserved, surveyed public land, or surveyed public land withdrawn or reserved by the Secretary of the Interior for any purposes, or surveyed lands withdrawn by Executive Orders Numbered 6910 of November 26, 1934, and 6964 of February 5, 1935*, for classification, which the Secretary may classify as chiefly valuable as a home, cabin, camp, health, convalescent, recreational, or business site. The act is applicable to lands in such areas as Taylor grazing districts, but is not applicable to land in such reservations as national forests, national parks or national monuments. Neither is it applicable to the re-vested Oregon and California railroad or the re-conveyed Coos Bay wagon road grant lands, in Oregon. The lands can not be leased or sold until classified for such purpose. The act does not apply to Alaska.

257. 2 *Policy.* It is the policy of the Secretary of the Interior in the administration of the act of June 1, 1938 to promote the beneficial utilization of the public lands subject to the terms thereof, and at the same time to safeguard the public interest in the lands. To this end applications for sites will be considered in the light of their effect upon the conservation of natural resources and upon the welfare not only of the applicants themselves but of the communities in which they propose to settle.

*These orders affect all remaining public lands in the states known to contain public lands and prevent the lease, sale or other disposal of such lands, except as provided in the orders, or after proper classification.

Applications will not be allowed, for example, which would lead to private ownership or control of scenic attractions or water resources that should be kept open to public use. Settlement will not be permitted which would contribute toward making public charges of the settlers. Nor will isolated or scattered settlement be permitted which would impose heavy burdens upon state or local governments for roads, schools, and police, health, and fire protection. Types of settlement or business which might create "eyesores" along public highways and parkways will be guarded against.

Where the land applied for has been withdrawn or reserved by the Secretary of the Interior, the matter will be brought to the attention of the appropriate bureau head for report.

Since the land is not intended to be devoted to producing a living, unless allocated for business, the applicant must furnish satisfactory evidence of resources insuring financial responsibility adequate to maintain himself and family, if any, and successfully to carry out the undertaking for which he proposes to use the land.

In general, use of the land through term leases, rather than outright sale, will be favored under administrative procedure. The Secretary may offer on his own motion to sell or lease at any time, as well as upon individual application.

257. 3 *Definition of sites.* For purposes of administration the following types of sites are defined:

(a) A *home site* is a site suitable for a permanent, year-round residence for a single person or a family.

(b) A *cabin site* is a site suitable for a summer, week-end, or vacation residence.

(c) A *camp site* is a site suitable for temporary camping and for the erection of simple or temporary structures and shelters, such as tents, tent platforms, etc.

(d) A *health site* is a site suitable for the temporary or permanent residence of a single person or of a family for the prevention or cure of disease or illness.

(e) A *convalescent site* is a site suitable for residence of a single person or family for the purpose of recuperation from a disease or illness.

(f) A *recreational site* is a site chiefly suitable for non-commercial outdoor recreation.

(g) A *business site* is a site suitable for some form of commercial enterprise.

A single tract of five acres or less may be designated as one or more of the above types of sites. For example, a business site may also be a home site.

257. 4 *Execution and filing of application.* An application for lease under the act of June 1, 1938, must be filed on Form 4-775. All applications must be prepared with an original and three copies. The applicant must furnish the information required by that form. The application must be filed with the Register of the land office for the district within which the land is situated. If the land is in a state in which there is no district land office, the application must be filed in the General Land Office at Washington, D. C. Only the original application need be under oath.

Applications on Form 4-775 will be formally received on the 60th day from and after date of approval of these regulations (or the 61st day if such 60th day falls on Sunday), and not before, and preferential status will not be given to applications offered in advance of such 60th or 61st day, as the case may be.

257. 5 *Fee.* An application for lease must be accompanied by a filing fee of \$5, which will be carried as unearned pending action on the application. If the application is rejected, the fee will be returned.

257. 6 *Action on application by Register.* The Register, on receipt of an application for lease, will note its filing on the tract books of his office and assign a current serial number thereto. If it is not properly executed, or is not accompanied by the required fee, or is otherwise irregular, he will reject it. The applicant will have the usual right of appeal. An application may be returned for correction of slight irregularities. The Register will not allow the application, but will forward the original application and copies thereof to the General Land Office with his semi-monthly returns.

257. 7 *No lease to issue before the land is classified.* No lease will be offered and no sale will be authorized until the land is classified by the secretary as coming within the provisions of the act and all else is found to be regular. Upon the receipt of the application and prescribed copies thereof in the General Land Office, and if the application appears to be regular, the General Land Office will, where the land applied for has been withdrawn or reserved by the Secretary, bring the application to the attention of the appropriate bureau head for report. Upon the receipt of a report from the bureau head under whose supervision the land withdrawn or reserved by the Secretary falls, that the allowance of the application is not incompatible with the purpose for which the land was withdrawn or reserved by the Secretary, the General Land Office will as to all such applications and all other applications filed under the act, proceed to have such studies and field examinations made through its own offices, or through the cooperation of other agencies, as will permit of proper action.

257. 8 *Occupancy; segregation of lands.* The filing of any application hereunder does not give the applicant the right to occupy, or settle upon, the land prior to the allowance of the application, but will segregate the land from other disposition under the public land laws subject to prior valid rights.

257. 9 *Issuance of lease.* If a lease is authorized, it will be prepared in quadruplicate on Form 4-776. The proposed lease will be transmitted by the General Land Office to the district land office, for execution by the applicant. The terms, covenants and stipulations which will be inserted in the lease are shown by the lease form. When the proposed lease is properly executed and returned to the Gen-

eral Land Office, it will be transmitted with appropriate recommendation to the Secretary of the Interior for consideration.

257.10 Term of lease. A lease will not be issued for a period of more than 5 years, unless the character of the venture justifies a longer period.

257.11 Lease rental. Each lessee must pay the annual rental, in advance, to the proper district land office, or to the Commissioner of the General Land Office if the land is in a state in which there is no district land office. The amount of the rental will be determined by the Secretary of the Interior.

257.12 Sale. If sale is authorized by the Secretary of the Interior, the applicant will be allowed 30 days from service of notice to deposit the amount of the purchase price, which will be fixed by the Secretary of the Interior and which will not be less than \$1.25 per acre, and the cost of survey. If a deposit is not made within the time allowed, the application will be rejected. An application for sale should be made on Form 4-775, appropriately modified.

257.13 Publication and posting. After deposit of purchase price has been made in those cases where sale has been authorized by the Secretary, publication and posting of notice of the application will be required. If duly made, and no protest is filed, cash certificate will be issued, to be followed by patent. Publication will be made at the expense of the applicant. Where a daily paper is designated the notice should be published in the Wednesday issue for 5 consecutive weeks; if weekly, in 5 consecutive issues; if semi-weekly or tri-weekly, in any of the issues for 5 consecutive weeks on the same day each week.

The notice will be posted in the district land office, or if there is no district land office, in the General Land Office, during the period of publication.

Publication and posting will not be required in connection with an application for lease.

257.14 Minerals. Any deposits of coal, oil, gas or other minerals subject to the leasing laws, in the lands patented or leased under the terms of this law, may be disposed of to any qualified person under applicable laws and regulations in force at the time of such disposal. No provision is made at this time to prospect for, mine, or remove the other kinds of minerals that may be found in such lands, and until rules and regulations have been issued, such reserved deposits will not be subject to prospecting or disposition.

257.15 Timber. A lessee will not be permitted to cut timber for the purpose of clearing the land, or to make improvements, without first submitting to the Commissioner of the General Land Office a statement of his plans and until after permission to cut the timber has been granted. Each such request will be the subject of a field examination, if necessary and action on the request will follow.

257.16 Rectangular tracts. The official township plats ordinarily provide the basis for descriptions of tracts, in compact form, in units of 5, 2½, or 1¼ acres. Where a tract, not exceeding five acres, can be conformed to legal subdivisions of the survey, no additional official survey will ordinarily be made by the Government.*

257.17 Supplemental plats. Where a tract is situated in the fractional portion of a sec-

tional lotting, a supplemental plat may be required in order to afford a suitable description. The plat will be prepared at the time of the approval of the application.

257.18 Irregular tracts. Where the rectangular form does not make the most desirable plan for development, a tract irregular in form may be applied for, not in excess of five acres. A metes-and-bounds description** will be required in the application, sufficiently complete to identify the location, boundary and area of the tract, which will be regarded as defining its maximum limits.

257.19 Tracts on unsurveyed land. Unsurveyed public lands are not subject to sale or lease under the provisions of the act. Should an application be filed for land over which the rectangular system of surveys has not been extended, the Register will reject it. The applicant will have the usual right of appeal. Where the site desired is on unsurveyed lands, request may be made for the survey of such lands under the rectangular system of surveys. Such request should be filed with the Public Survey Office of the state in which the lands are situated, or with the General Land Office if they are not within an organized surveying district. The description must be sufficiently complete to identify the location, boundary and area of the land. There should also be given the approximate description or location of the land by section, township and range.

GENERAL LAND OFFICE
Los Angeles, California

June 19, 1940

Mr. Randall Henderson, Editor,
The Desert Magazine,
El Centro, California

Dear Sir:

We have your letter of June 18, 1940 relative to the five-acre tract act.

We have no literature covering this type of entry as yet, but look for a supply of printed circulars in the near future. No applications will be accepted at the land office until on and after July 27, 1940.

None of the public lands have been classified as available under this act, and it is our understanding that each entry will be classified separately when application is filed. No application blanks have been supplied at this time.

If you care to write us again a little later, we shall be pleased to mail you whatever information we have at that time.

Very respectfully,

PAUL B. WITMER,
Register.

A person who requests the extension of the rectangular system of surveys over an unsurveyed area does not, by making such request, acquire preferential right to apply for the land under this act upon the completion of the survey and the official filing of the plat. After the survey is completed and the official township plat is placed of record, the surveyed area will be subject to the provisions of the act and applications may then be filed.

257.20 Cost of special official survey of an irregular tract. Where a special official survey is required of an irregular tract for the purpose of patent description, the applicant will be required to make an advance payment to the Register of the proper district land office, or to the Commissioner of the General Land Office if the land is in a state in which there is no district land office, equal to the estimated cost of executing the survey, before the Gen-

eral Land Office will undertake the field work in connection therewith. The cost will be prorated if there is a group of contiguous or closely associated tracts to be surveyed at any one time, and credit for such payment will be followed when final settlement is made preceding the issuance of patent.

257.21 Cooperation with other agencies. All applications will be considered in the light of the land use programs of the Federal Government and of local planning agencies.

257.22 Renewal of lease; preference rights. Upon the filing of an application for the renewal of a lease, not more than six months or less than sixty days prior to its expiration, the lessee, in the discretion of the secretary, will be accorded the preference right to a new lease, upon such terms and for such duration as may be fixed by the secretary, if the terms of the lease have been complied with and the secretary shall determine that a new lease should be granted. On the filing of an application for the renewal of a lease, the register will promptly forward the same by special letter to the General Land Office. A lessee who is entitled to a renewal lease will be accorded a preference right to purchase the land after the expiration of the lease, if the secretary, in his discretion, authorizes the sale of the land and an application to purchase is seasonably filed.

257.23 Assignment of lease and subletting. The lessee will not be permitted to assign the lease, or any interest therein, nor to sublet any portion of the leased premises, without the approval of the Secretary of the Interior. A proposed assignment must be supported by a showing that the assignee has the qualifications required of an applicant and that he agrees to be bound by the provisions of the lease.

257.24 Cancellation of lease. A lease will be subject to cancellation by the Secretary of the Interior for failure of the lessee to make any required payment of annual rental within the time prescribed, or for stipulations of the lease, or of any regulations issued under the act, where such default has continued for 30 days after written notice thereof. Upon cancellation by the Secretary the lease will terminate and be of no further force or effect.

257.25 Purchase, lease, restrictions. No person shall be permitted to purchase or lease more than one tract under the provisions of this act, except upon a showing of good faith and reasons satisfactory to the Secretary, and then only in the discretion of the Secretary. When more than one tract is applied for under the provisions of this act by one and the same person, each such application must be complete in itself, be upon the prescribed form, be accompanied by the prescribed filing fee, and otherwise be in accordance with all of the applicable regulations issued under the act, and a showing of necessity in the premises. Only one tract, not exceeding five acres, may be embraced in any one application filed under the act; and, in each application filed under the act to purchase or lease more than one tract, the applicant filing the same must list, by land office and serial numbers, all prior applications filed by such person under the act, or, if this is not practicable, must describe the place where (district land office, or General Land Office, as the case may be), and when all such applications were filed by such applicant.

(Sgd) FRED W. JOHNSON,
Commissioner.

APPROVED: June 10, 1940.

(Sgd) Harold L. Ickes,
Secretary of the Interior.

(These regulations are issued under authority of 52 Stat. 609; 43 U.S.C. 682a.)

*The dimensions of a five-acre unit are substantially 5.00 chains by 10.00 chains (330 feet by 660 feet).

**The direction and length of the connecting line from the initial point on the boundary to the nearest public-land survey corner, and the direction and length of each boundary course.

Gems and Minerals

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

—ARTHUR L. EATON, Editor—

NEW FOSSIL FOREST FOUND IN OREGON LAVA FIELD

Phil F. Brogan reports in the Portland Oregonian discovery of a lava cast forest on the south slope of the Newberry volcano of central Oregon, near Surveyors' ice cave, on the Devil's Horn road. The discovery was made by Forrest Lane, recreation guard at Newberry crater, and Arthur Quirin, Paulina peak lookout.

It is believed that the casts were caused centuries ago by a lava flow high up on the slope of Newberry volcano, moving down through a stand of pine trees.

There is a similar forest of casts north of the Newberry crater rim called the North Paulina field. In places the molten rock splashed against upright trees creating casts 14 feet high. In the case of fallen logs, tunnels were formed, some of them measuring one hundred feet length. The original trees were burned away, but the casts bear impressions of bark, and bits of charcoal are much in evidence.

Only a preliminary study of the South Paulina field has been made up to date. Dr. Edwin T. Hodge, Oregon state college geologist, states that the North Paulina field of casts is the most spectacular of its kind in western America.

NEW CALIFORNIA STATE MINING BULLETIN ISSUED

California division of mines, department of natural resources, under the direction of Walter W. Bradley, state mineralogist, in June released the January, 1940, issue of California Journal of Mines and Geology, being Chapter 1 of State Mineralogist's Report XXXVI. This issue contains a report on Current Mining Activities in Southern California covering a survey of Imperial, Inyo, Kern, Los Angeles Mono, Riverside, San Bernardino and San Diego counties, both as to metal and nonmetallic mining activities, by W. B. Tucker and R. J. Sampson of the Los Angeles field district.

There are two special articles, "Notes on Beryl, with a Qualitative Analysis for Beryllium," by George L. Gray, mineral technologist of the division of mines, and an outline of the work being done by the U. S. bureau of mines in gathering data on the strategic mineral resources of the country entitled "Strategic Minerals Investigations Procedure followed by the U. S. Bureau of Mines." This clearly sets forth what the owners of deposits of such minerals as antimony, chromium, manganese, mercury, nickel, tin and tungsten should do in order that such resources may become available in case of emergency.

Current notes of the geologic branch give an outline of Part 1 of the new bulletin 118, "Geologic Formations and Economic Development of the Oil and Gas Fields of California," now in press.

The usual notes on statistics, laboratory and library complete the number. Price 60c postpaid, plus 2c sales tax to residents of California. All publications of the division of mines are for sale at the San Francisco, Los Angeles and Sacramento offices.

Misnamed Minerals

Lapis Lazuli

True lapis lazuli is heterogeneous in character. The deep blue is usually lazurite, a feldsparlike mineral related to sodalite, of about the same chemical formula as feldspar, but containing sodium sulphide in addition. It has been shown to contain also iron, amphibole, feldspar, scapolite etc. The highly colored varieties of lapis lazuli are much esteemed as gems. The hardness is about 5.5 and specific gravity about 2.38.

Dumortierite, one of the chief substitutes for lapis lazuli, is a basic aluminum borosilicate. Its greater hardness of 7, and greater gravity of 2.66 are very distinctive. Also its blue color is usually much lighter and poorer than that of the true stone. Many other stones are sold as lapis lazuli, but most of them are offered with some qualifying name attached.

GOLD FROM OCEAN SANDS

Robert D. May and Jerry Tetreault are placer mining the beach sands in the vicinity of Crescent City, California. They have successfully tried out a machine invented by Tetreault involving a new process for washing with a hydraulic pump and a combination herringbone and strap washer. Gasoline is used for power.

A ton of sand yields about two dollars worth of gold, besides appreciable quantities of platinum, garnet, zircon, chromium, magnetite and titanium. A magnet removes the magnetite iron in early stages of the process, so as not to interfere with segregating the other minerals. Zircon is one of the most valuable materials recovered from the sand. It is used in the manufacture of abrasives.

These minerals are washed down Klamath and neighboring rivers from the mountains and appear in the black sand of the beaches of Del Norte and other counties. They are so finely pulverized that they will sift through chamois skin. Mercury is used to recover the gold.

Robert D. May is a former resident of El Centro, California. Jerry Tetreault says that he is a "dyed in the wool" inventor and prospector.

FOSSIL CORAL

At some time, probably during Miocene or Pliocene ages, a great reef of coral was formed off the coast of northern California. The reef, now in fossil form, lies deep in the ocean, beyond the reach of all ordinary waves. Hard winter storms tear off pieces and bring them, along with some fossil shells, to the beaches near Crescent City and Eureka.

The summer beaches show very few fossils, but persons who live along that part of the coast find good picking after a winter storm. This material is used locally to make decorative borders for flower beds, etc. It is common geological knowledge that, since Mesozoic times, these coral beds may have extended as far north as the coast of Alaska.

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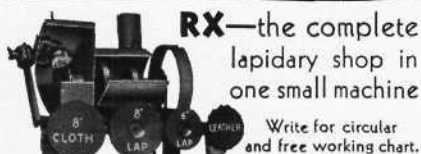
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Collector's Code

At a recent meeting of the Gem Collectors club of Seattle, Washington, the following field code was presented by N. A. Nelson and Bertha G. Brown, members of a special committee, and approved by the organization:

1. I shall when possible gain consent from owners before collecting on private property.
2. I shall always express appreciation for courtesies extended by owners of mineral property — and other helpful persons.
3. I shall always leave gates, through which I pass, closed or open, just as I find them.
4. I shall not interfere with equipment or property at unguarded mines or quarries, shall not trespass on closed areas and I shall bear in mind the great possibility of danger.
5. I shall refrain from the destruction of specimen material. It may be of no interest to me but it might be of value to others, and I shall bear in mind we are not owners but trustees of these treasures of nature.
6. I shall hold sacred the confidence of other persons, regarding mineral finds and fields, if this is their wish.
7. I shall ask permission of owners before handling their specimens.
8. I shall, when in foreign fields, live up to the ethics practiced by the collectors of that locality.
9. I shall, when collecting on public domain or in public parks, obey the regulations and laws governing such area, and will lend my effort to make such regulations and laws effective.
10. I shall, at all times, obey the Golden Rule—"Do unto others as you would have others do unto you."

Cogitations . . .

Of a Rockhound

By LOUISE EATON

● Didja ever consider how things in this life get compensated for? F'r instance, seems as though if folks has to work pretty hard when they's kids, duties sorta lightens up as they gets older. Also visyversa. An then look at the desert an at the country what has trees. If you has beautiful trees and fernz you gotta take lots of rain 'n cloudy weather. If you wanta hunt rocks there, you digs and scratches after em. On the other hand, the desert keeps its rocks lyin' loose just waitin' to be pickt up. There's not many trees or much shade, but there shure is plenty of sunshine, and the hills is nice and visible, not obscured by landscape.

● Mountain streams is a lot like human beins. They rushes along fast, impatient at all obstacles, and boiled up at interruptions. They does what they has to, like turnin' mill wheels and fillin' dams, but they does it under compulsion. After all this hurryin', when they get near the end of their ways they slows down, offerin' no more resistance —and if they has any brains they probably wonders why they wus in such a hurry to get there anyway.

● Rockhouns is just about the honestest people ther is. They'd no more think uv takin the other fella's specimens than as if the rocks was locked up in the Kentuck place wher Uncle Sam guards his gold. Every rockhoun knows his own specimens most bethern he does his own childurn, an each rockhoun does such individual work polishin that he don't need no trademark.

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AMONG THE

ROCK HUNTERS

Members of the Long Beach mineralogical society motored to Elizabeth lake during the week end of June 30. They were especially interested in the rare earth minerals found in that region, particularly the Martinez formation which consists of Eocene sediments.

Rockhounds are starting a chain letter headed "Rock Club." If the chain remains unbroken each participant eventually will receive 27 specimens.

Under the direction of Frank L. Evans of Prescott, Arizona, a plant has been installed four miles south of Payson for the quarrying, cutting and polishing of pink granite for ornamental building purposes.

On a recent trip to Topaz mountain in Utah, a party of collectors picked up flawless specimens of white topaz on the road in Juab county. The largest specimen was 3/8 inch in diameter. Members of the party were Mr. and Mrs. James Juhl, Mr. and Mrs. Frank Bunn, Mr. and Mrs. Frank Beckwith, and Frank Beckwith Sr.

Kern county Mineral society at Bakersfield is planning to incorporate under California state laws.

New officers elected at the May meeting of the Southwest Mineralogists are: Harold E. Eales, president; C. S. Standridge, vice president; Mrs. Jean Lippett, secretary; Mrs. Pearl Arnold, corresponding secretary and J. W. Collins, treasurer. Directors are John Akers, former president, Albert Hake, Mrs. Gladys Eales, Mrs. Hager, Gilbert Arnold, Fred Mason, Sam Taylor, Charles Herman and Dr. McKibbin. The May 31st meeting of the society was addressed by Victor Arcienega, instructor of mineralogy at Manual Arts high school.

Franklin G. McIntosh of Beverly Hills, California, whose collection of American gems is said to be one of the finest privately owned in the United States, died of cerebral hemorrhage in June. He was a charter member of the Pasadena society and active in collecting until his death. He became interested in collecting many years ago when on a trip to Death Valley with John Hilton.

BIRTHSTONES

August—Sardonyx

Sardonyx is well known as a name, but little known as a stone. The gem often sold as sardonyx is either sard or carnelian, two variations in color of the same quartz mineral. The color, often due to hematite iron, is a shade of Indian red.

Sardonyx, a true onyx, is now quite rare, and seldom found as a mineral or sold as a gem stone. It is formed generally of two layers of either sard or carnelian, with a layer of snow white silica between. The white band in the middle, in true sardonyx, is often composed of numerous thin white layers. In times past, the chief use of sardonyx was in the manufacture of hand carved cameos.

Other gems recognized as August birthstones are peridot and moonstone.

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GRAN QUIVIRA

best descriptive story about the historical landmark shown in the accompanying photograph. Mrs. Best's winning manuscript is printed on this page.

Helen Wetherill Best of Farmington, New Mexico, won the prize offered by the Desert Magazine in June for the identification and

here at that time buried considerable treasure and then escaped. Fortune-hunters excavated the ruins frequently until the national park service took charge.

The pueblo originally contained 22 terraced houses with their accompanying kivas, and the Indians evidently irrigated their garden plots.

The area of the monument is 610 acres, and a resident custodian is on duty here.

Weather

FROM PHOENIX BUREAU

Temperatures—	Degrees
Mean for month	88.9
Normal for June	84.5
High on June 19	115.0
Low on June 8	66.0
Rain—	Inches
Total for month	Trace
Normal for June	0.07
Weather—	
Days clear	20
Days partly cloudy	6
Days cloudy	4

J. M. LANNING, Meteorologist.

FROM YUMA BUREAU

Temperatures—	Degrees
Mean for month	88.0
Normal for June	84.7
High on June 13	115.0
Low on June 7	61.0
Rain—	Inches
Total for month	Trace
71-year average for June	0.02
Weather—	
Days clear	28
Days partly cloudy	1
Days cloudy	1
Sunshine 97 percent (415 hours of sunshine out of possible 428 hours).	

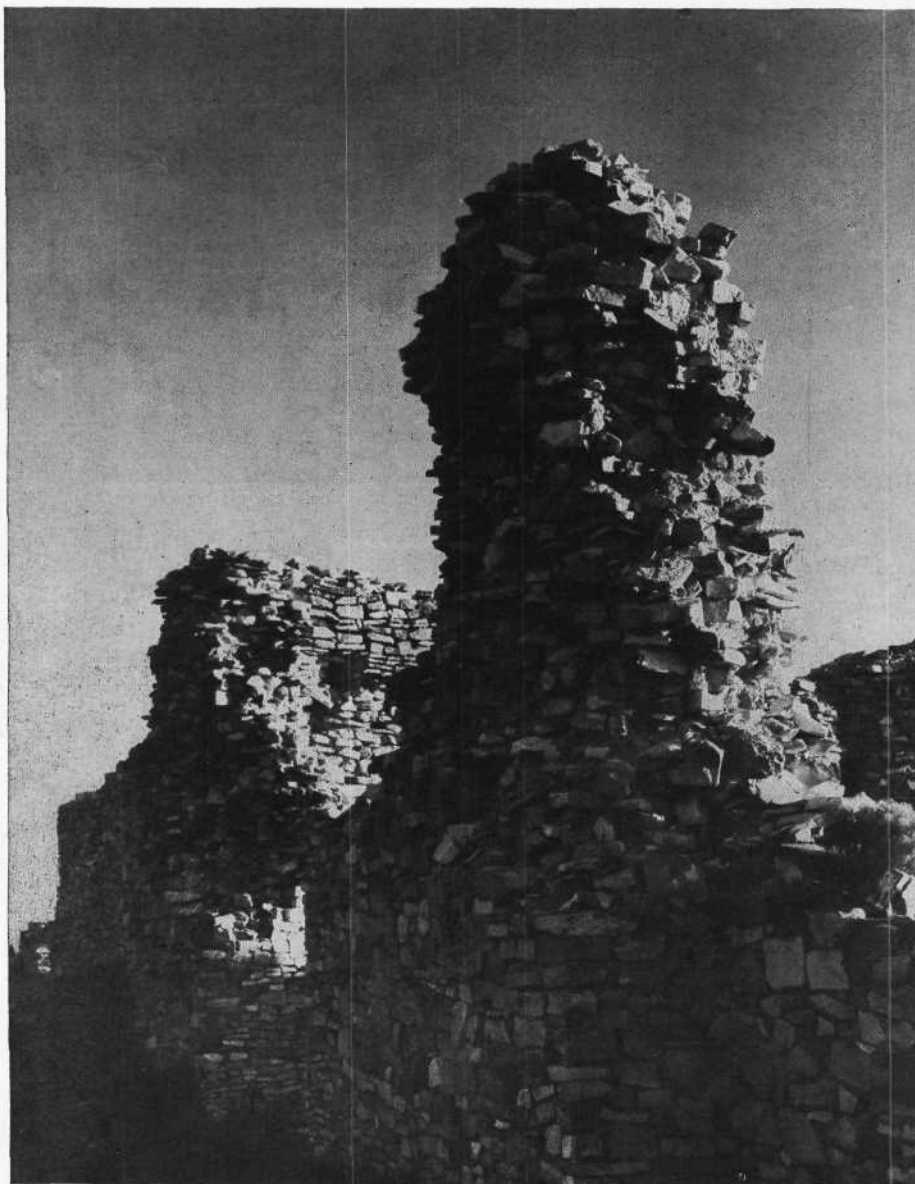
Colorado river—June discharge at Grand Canyon 1,542,000 acre feet. Release from Boulder dam 560,000 acre feet. Estimated storage June 30 behind Boulder dam 24,130,000 acre feet.

JAMES H. GORDON, Meteorologist.

TRUE OR FALSE ANSWERS

Questions on page 29.

- 1—False. Geronimo died on the government reservation at Fort Sill, Oklahoma, February 17, 1909.
- 2—True.
- 3—True. Cactus wrens often nest in the Cholla.
- 4—True.
- 5—False. Death Valley is a national monument.
- 6—True.
- 7—False. Carson City is the capital of Nevada.
- 8—False. The north rim of Grand canyon is higher.
- 9—True.
- 10—True.
- 11—True.
- 12—False. Bill Williams was a "mountain man."
- 13—False. Ephedra was used as a healing beverage, not a narcotic.
- 14—False. Carlsbad caverns were discovered by Jim White in 1901.
- 15—True.
- 16—False. Petrified wood is produced by the infiltration of water containing dissolved mineral matter.
- 17—True.
- 18—False. The willow blossom is pink and white.
- 19—False. Sunset crater is a volcanic cavity.
- 20—True.



By HELEN WETHERILL BEST

Almost in the exact center of the state of New Mexico is the Gran Quivira national monument. It is also a state monument. Motorists reach this historic landmark by traveling south from Mountainair 26 miles over State Highway 15.

These ruins include the ancient Indian pueblo of Quivira and the Franciscan mission which was started in 1627 by Fray Francisco de Acevedo. The ruins seen today are of a larger monastery which was erected several years later, probably about 1649.

According to legend a rich treasure was to be found at Gran Quivira and Coronado and his followers came here to seek it about 1541.

Since the ruins were made a national

monument in November, 1909, the debris has been cleared away from the old mission and enough excavation done to show the main outline of the rooms and corridors of the monastery which flanked the church.

The Spanish padre Francisco de Acevedo was a regular visitor at the original mission for nearly 20 years. Later when the large church was built resident priests were stationed here.

According to one historical version the Indian pueblo was abandoned in the 1670s due to the constant raiding of nomad Indians, mainly the Apaches. Other historians say the church remained active until the Indian uprising of 1860. According to legend two priests on duty

Bathing Beach in Nevada

Who can identify this place?



Prize Contest Announcement

Here's one of the newest landmarks on the desert — somewhere in Nevada. Not many motorists have visited this inviting beach to date—but the roads and camping facilities are being improved, and sooner or later it will be a popular all-year-round mecca for tourists from all over the west.

This is a spot every Desert Magazine reader will want to know more about, and so a prize of \$5.00 is offered for the identification and best descriptive story of not over 500 words describing this

place. The manuscript should give name, location, mileages, condition of roads, facilities—and historical background if there is any history connected with it.

Entries in this contest must reach the Desert Magazine office not later than August 20, and the winning manuscript will be published in the October number. The picture was taken in September, 1939, and there may be added improvements at this point since that date. If so, they should be mentioned.

WILL PROVIDE WATER FOR 70,000 FARM FAMILIES

Current construction program of the United States bureau of reclamation will serve more than 9,000,000 people in 16 western states. Bureau announcement says approximately 2,500,000 acres of new land will be made available for more than 70,000 farm families. Nearly 3,500,000 acres now in cultivation will be supplied with supplemental water.

MORE PATROLMEN TO BE TRAINED FOR BORDER

Training schools to provide 800 new border patrolmen along the Mexican and Canadian boundaries have been set up by the United States government. Details of 100 recruits will be trained at a time,

expansion of the force to be completed in eight months. Autogiro planes will be used in Los Angeles, El Paso and San Antonio districts.

CHICAGO MEN TO OPERATE PAINTED DESERT INN

Painted Desert Inn, beautiful pueblo-style structure completed by the U. S. Park service in the Petrified forest national monument in Arizona nearly two years ago, is to be operated by Standard Concessions, Inc., of Chicago, according to the announcement of Secretary Ickes. Under the lease the company's earnings in excess of 6 percent net on its capital investment will be divided 53% to the operator and 47% to the government.

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GUIDES

DEATH VALLEY, A GUIDE. New publication of Federal Writers Project. Very complete and beautifully illustrated — \$1.00; cloth \$1.75

WHERE SHALL WE GO, A Guide to the Desert. William Mason and James Carling. 17 trips in Southern California desert out of Palm Springs with maps and mileage. Brief description flora and fauna 50c

GRAND CANYON COUNTRY, M. R. Tillotson and Frank J. Taylor. A thoroughly accurate handbook of information covering geology, wildlife, history and recreation. 108 pages \$1.00

DAYS IN THE PAINTED DESERT and the San Francisco mountains, a guide, by Harold S. Colton and Frank C. Baxter. Maps, flora, fauna, geology and archaeology. 113 pages \$1.00

GUIDE TO SOUTHWESTERN NATIONAL MONUMENTS. Authoritative guide to the 26 Southwest Monuments, including personnel, location, area and facilities. Summary of history and archaeological work. Map and 29 excellent photos 30c

CARTOON GUIDE OF CALIFORNIA, Reg Manning. Accurate and informative. Cartoon map. 138 pages \$1.00

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CARTOON GUIDE OF THE BOULDER DAM COUNTRY, Reg Manning. Map. 50 pages 50c

CARTOON GUIDE OF NEW MEXICO, T. M. Pearce, with illustrations by James Hall. 108 pages of amusement about this fascinating state. Map \$1.00

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INDIAN TRIBES OF THE SOUTHWEST, Mrs. W. M. Smith. A vivid useful handbook on the desert tribes. 160 pages \$1.50

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HOPI GIRL, Mrs. W. M. Smith. An intimate book of Hopi family life, customs, rituals as revealed through the life story of Polamana. 273 pages \$1.50

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CALIFORNIA DESERTS, Edmund Jaeger. Complete information on Colorado and Mojave deserts. 209 pages, illustrated \$2.00

BORN OF THE DESERT, C. R. Rockwood. Story of Imperial Valley's conquest 50c

THE DESERT, John C. Van Dyke. New edition of a desert classic which has never been equalled for description of the mystery and color of the desert. 33 photos by J. Smeaton Chase. Cloth bound, 257 pages \$3.00

BOOKS OF THE SOUTHWEST, Mary Tucker. 105 page bibliography. Paper bound 75c

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DESERT OF THE PALMS, Don Admiral. Scenic wonders of the Palm Springs region. 56 pages 50c

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BOOKS

Of Yesterday and Today

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

WHEN CORONADO SOUGHT THE FABLED RICHES OF QUIVIRA

Four hundred years ago the brilliant company of Francisco Vasquez de Coronado rode north from Compostela in Mexico seeking the golden cities of Cibola. Their bitter disappointment in finding only peaceful mud villages in New Mexico was turned into renewed hope at the luring and fanciful tales of their Indian guide, who described the rich land of his people in Quivira to the north.

It is in tracing the route of this secondary expedition to Quivira that Paul A. Jones in his book CORONADO AND QUIVIRA has contributed a new chapter to Southwest history. First published in 1927 by the Lyons Publishing company of Lyons, Kansas, the present 1937 edition includes a second part devoted to the research conducted by the author and several other contemporary historians which has produced new information on the Coronado Entrada.

The march of the Conquistadores into New Mexico and their excursions into Arizona and the Staked Plains of Texas have been well defined by previous historians. But the route taken by Coronado and his small group of picked men to seek Quivira, while his army remained in New Mexico, had been vague and disputed. The discovery in 1927 of a prehistoric village in central Kansas bearing evidences of having been Quiviran, and of Spanish relics in other localities led the author to establish what he believes to be the actual routes to and from the Quiviran villages.

Paul Jones, editor and publisher, historian and archaeologist, has made the first part of his book readable especially for the layman who is interested in the historical background of the Southwest but to whom a mass of specific records, footnotes and bibliography is a formidable barrier. He has used a flowing narrative style, no doubt inspired by the journals of Pedro de Castaneda and Captain Juan Jaramillo, upon whose accounts he has largely relied.

The second section will be of interest to the student of history, in that it contains accounts of recent research, sources and supplementary information. End page maps, 65 illustrations, 242 pages.

The DESERT MAGAZINE

HERE ARE THE ANSWERS TO A PROSPECTOR'S QUESTIONS

Since prospecting has been an important vocation of mankind since that day when stone-age man first went out into the hills in search of a type of rock which would lend itself best to the making of crude tools, it hardly is possible that all the knowledge accumulated during that long period in human history could be combined in one volume. And yet M. W. Bernewitz, engineer and journalist with a world-wide experience in mining, has compiled an amazingly complete book on this subject.

His **HANDBOOK FOR PROSPECTORS**, published by the McGraw-Hill Book company in 1926, and brought out in revised editions again in 1931 and 1935, answers literally thousands of the most important questions in this field.

The subject matter ranges all the way from first aid for the isolated prospector, to the proper method of handling and using explosives. Mining laws in the United States and many of the foreign countries are summarized, an elementary study of geology is given, markets and price are discussed, and a very large part of the book devoted to the occurrence and identification of metallic and non-metallic ores. The book is illustrated with photographs and pen sketches and the appendix includes a complete glossary of mining terms.

It is a book for both the novice and the experienced mining man, since it carries many tables of information which not even an engineer would attempt to carry around in his head. 362 pages and index. \$3.00.

THERE ARE ALSO "PROBLEM CHILDREN" ON HOPI MESA

Dr. Wayne Dennis lived with the Hopi Indians through two summers, making an intensive study of their family life, and then wrote **THE HOPI CHILD**, which has recently come from the press of the A. Appleton-Century company, New York.

Dr. Dennis is assistant professor of psychology at the University of Virginia, and while his approach to the study of Hopi children is scientific, he has created a book which is thoroughly readable for all who are interested in the Indians and their home life.

Insofar as natural endowment is concerned, Hopi children are not much different from other children, Dr. Dennis concludes. There are problem children at Hotevilla, as there are in every other American town. The Hopi are a peace-loving people—but the youngsters will fight, the same as normal schoolboys everywhere.

It is only in the adult years that the Hopi acquires the philosophy that it is undignified to engage in physical combat. However, when the defense of their

homes is involved, these strange tribesmen will go to war as fiercely as any other members of the human family.

The book gives an unusually clear insight into many phases of the community life of the Hopi mesas. \$2.50.

TRIBAL BELIEFS OF NAVAJO PRESENTED IN NEW BOOK

Navajo beliefs and tribal customs are presented with more than usual authenticity in Franc Johnson Newcomb's new book **NAVAJO OMENS AND TA-**

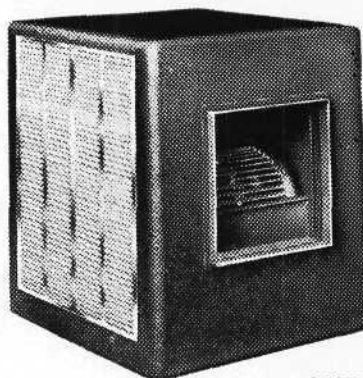
BOOS, just off the Rydall Press at Santa Fe, New Mexico.

The author is the wife of Arthur Newcomb, trader and friend of the Indians, and through intimate association with the Navajo she has acquired a sympathetic and understanding knowledge of his customs and traditions. She has dedicated her book to Hosteen Klah, who until his death, was regarded as foremost among the tribal medicine men.

It is a 79-page book, 8x12, with attractive format.



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Desert Place Names

Magazine is indebted to the research work done by the late Will C. Barnes, author of "Arizona Place Names;" to Betty Toulouse of New Mexico, to Margaret Hussmann of Nevada and Hugh F. O'Neil of Utah.

ARIZONA

BILL WILLIAMS MOUNTAIN

Coconino county
Elev. 9264 feet. About 6 miles southeast of Williams on A. T. & S. F. rr. According to James the Havasupai Indians call this Hue-ga-woo-la or Bear mountain. Named for Bill Williams, famous scout, guide and hunter, but when or by whom not established. Mentioned by all early explorers and appears on most early maps. Whipple (Dec. 28, 1853) wrote: "Southwest we saw Bill Williams mountain where the stream of the same name is said to rise." Coues says "Old Bill Williams was the noted character of unsavory repute with whom Fremont had his disastrous experience in the San Juan mountains in 1848." Farish gives Mike Burns as his authority for saying the Apache-Mojaves called the mountain Jock-ha-we-ha, meaning "covered with cedar." On April 30, 1857 Ives camped at the foot of the mountain and called it by this name.

CUNNINGHAM PASS Yuma county

On south side of Butler valley in Harcuvar mountains. Barnes quotes a letter from Mrs. J. B. Martin of Salome: "After James Cunningham, who built a stone house here about 1885-1886. Located a group of claims near what was later 'The Critic' mine. Was a sailor in his younger days. A great friend of the Indians, who however ambushed and killed him in Bells pass. It is claimed that later the Indians said they killed him by mistake."

CALIFORNIA

UBEHEBE CRATER Inyo county

In northern Death Valley at the end of a road 38.5 miles from junction with California highway 190. Derived from Indian word meaning "big basket in the rock." Death Valley Guide, prepared by W.P.A. federal writers project says the crater "is an inverted cone, half a mile in diameter at the top, 800 feet deep, and 450 feet in diameter at the bottom. This is an explosion pit, or explosion crater, that did not build a large cone; there are several smaller craters of the same kind in the vicinity. The volcanic action probably occurred within the last 1000 years."

DARWIN

Inyo county
Elev. 4749 feet; pop. 100. On a mesa above Darwin wash. The wash named in 1860 by Dr. Darwin French determined the name of the town that sprang up when lead and silver were discovered in

1875. At the peak of the boom, says Death Valley guide prepared by the federal writers project, 1500 people were living here. Darwin has had several booms since then but today not more than 75 houses are left in the old mining town sitting silently in the sun. There is no water here. In 1875 a 12-mile pipe line was built to springs in the Coso mountains but when the pipe became old it leaked so much that no water reached the town. Water is now hauled from Darwin falls 8 miles away.

NEW MEXICO

TORRANCE COUNTY

Named for General Torrance of Pennsylvania, first president of the New Mexico Central rr, who had much to do with improvement of the Estancia valley, most important section of Torrance county. One of the last counties to be created in the state, Torrance was established by legislative act of February 2, 1905. It is now the center of one of the largest bean farming areas in New Mexico. Originally the land was used for grazing, under grant to Don Bartolome Baca following his petition in 1819. After change in government the land was deeded to Antonio Sandoval December 15, 1845 and by this change of title the land changed hands twice before 1878. Heirs of Baca, ignorant of the fact that the property "had been mistakenly granted to Sandoval," sold their interests in good faith to Don Manuel Antonio Otero in 1874. Trouble developed from conflicting claims. In a gunfight near Estancia springs in 1880 Otero was killed. In 1901 both Baca and Sandoval grants were rejected, the land was thrown open to homesteaders and farmers. Directed by General Torrance, the New Mexico Central railroad started in 1902 to build a line from Santa Fe to Sweetwater, Texas, but the line was never continued beyond Torrance county.

UTAH

HOLDEN

Millard county
Elev. 5113. Settled 1854. Named in honor of Elijah E. Holden, early settler and member of the Mormon battalion, said to have frozen to death in the mountains nearby.

MEXICAN HAT

San Juan county
Derived its name from a balanced boulder resembling a Mexican sombrero. The "hat" is more than 60 feet in diameter, 12 feet thick and weight 2500 tons. It rests on a pedestal 200 feet above the valley floor.

Mines and Mining . .

Manganese, indispensable in the manufacture of highgrade steel, is most important among all strategic minerals. Domestic production of manganese in the United States amounts to only 5 or 6 per cent of the nation's requirements. This is why the federal bureau of mines is making every possible effort to develop an adequate supply from American mines. Ten properties in Arizona are under detailed examination by government engineers. Research workers are trying to perfect processes to make recovery of the metal commercially feasible from lowgrade deposits. Nevada output of manganese is increasing. Tin, antimony, nickel, chromite, tungsten and mercury are other items on the strategic minerals list scarce in this country.

Globe, Arizona . . .

From old dumps in the Chrysotile district asbestos is shipped via highway 60 to rail loading point at Globe. Mining men say that a vast amount of material thrown away in earlier days can now be treated and handled at a profit.

Goldfield, Nevada . . .

War demand for quicksilver with development of Warm springs cinnabar field has created a new desert mining town, christened Mercury Center. Inhabitants of the new town are producers and workers mining mercury ore.

Kingman, Arizona . . .

Schedule at the Williams tungsten mine 72 miles southeast of here calls for early completion of the new 100-ton concentrator. Ore was accumulated for start of operations in July. Forty-five men are employed. A 1,000-foot tunnel is being driven at a vertical depth of 220 feet, to cut the main vein.

Golconda, Nevada . . .

With \$60,000 dividend in June, Getchell mine, inc., has distributed \$1,050,000 profits to stockholders since its first dividend in August 1938. Exploration is under way beyond the main workings.

Caliente, Nevada . . .

Alonzo Machay and associates of Salt Lake City have leased with \$125,000 option 14 claims covering a gold strike made by Irvine Bauer in the Comet district. The Bauer find was responsible for a stampede to the district when it was reported assays ran as high as \$3,000 to the ton. Immediate development of the property is one of the conditions of the agreement.

Mojave, California . . .

Tin has been found in the gold mine of the Caliente Rainbow company in Kern county, according to C. M. Hart, superintendent. Hart said he had found trouble in amalgamating gold from the mine and analysis disclosed the presence of tin caused the difficulty. Assay showed the refined metal contained 48.2 percent tin; 31.6 gold and 13.6 silver. Price of tin has advanced 12 cents a pound in the past six months.

Ajo, Arizona . . .

In the Quijota mining district, 50 miles east of here along the Tucson highway, a gold strike is reported with ore running as high as \$34,209 to the ton, according to R. M. Hines, Quijota postmaster. Prospector Bill Coplen is credited with the discovery. Mining men who have visited Coplen's claim say his find "bears promise and merits exploration." Other discoveries have been reported from time to time in this district, but as one Arizona editor writes, "no considerable permanence of very rich gold occurrence seems to be authenticated as yet."

Albuquerque, New Mexico . . .

New Mexico mines are busy, production is stepping up, if present scale of operations continues mineral output for the current year may double the figure for 1939, which was \$18,988,622. Payrolls are higher than in any recent year and Chino's big smelter at Hurley is turning out ten million pounds of blister copper monthly. Union Potash and chemical company has a \$1,500,000 program to produce 2000 tons a day.

Washington, D. C. . . .

Bill authorizing the federal reconstruction finance corporation to make loans not exceeding \$20,000 for development of strategic minerals has been passed by the senate and sent to the house of representatives for action. Corporations, individuals and partnerships would be eligible for these loans, under terms of legislation sponsored by senator Pat McCarran of Nevada.

Sez Hard Rock Shorty of Death Valley . . .

By LON GARRISON



Hard Rock finished reading the latest copy of the Inferno News Empire, folded it up and tossed it aside drearily.

"Ho hum," he sighed. "The things they print as news nowadays! Chink Walters had a tooth yanked—bet it wasn't a wisdom tooth! The ladies down to the First Asbestos Episcopal church had a basket sociable. It ain't rained for three year. There was a article on how to make hens lay more eggs. But it was the one about auto racin' that was the worst. Why these tenderfeet drivin' cars nowadays don't know nothin' about racin.' I'd like to've saw some of 'em in one o' the World Championship Desert Cross Country Marathons we usta have in here."

Hard Rock began to take an interest in his subject and sat up a bit to demonstrate better.

"Back when cars was new an' roads wasn't much better we usta run them marathons ever' year, an' Mister! There was a race! Begun here, run over to Darwin, on down to Loco, cross to Chuckawaller Holler, then over to Fried Egg canyon an' up Eight Ball crick to Inferno again. Two hunnerd an' 37 an' fourteen hunnerths miles—not countin' some short cuts I knowed about. It took real drivin.' I helt the champeenship for 10 year right up 'til I had a big augerment with the judges, an' after that I quit

drivin'. Then the race got so punk they quit havin' it.

"Last race I was in I got in trouble right away. Got stuck in the sand on one o' my short cuts, an' by the time I got out they was all ahead o' me. I lit out after 'em, an' one at a time started catchin' up an' passin' 'em. I got by all of 'em but one, an' all the way up Eight Ball crick I was right on his tail. Figgered I'd pass 'im on that straight stretch just outside o' town.

"I pulled up alongside, shoved on around an' headed for home like the Old Lady was after me. I was doin' so good I got careless. The guy I'd just passed was pushin' me close an' I was feedin' the buggy all the gas she'd take, an' we was only about a hunnerd yards from pay dirt. I looked up to wave at the Mayor as I whizzed past, an' just then I hit a little sandy spot. I started skiddin', slid sideways, an' quick as a wink was turned clean around. Yes sir—the other guy couldn't pass an' he couldn't stop. So I had a head-on collision with the car that was follerin' me. He hit so hard he shoved me right on acrosst the line—the winner! Yes sir—I won fair an' square, but after the judges got through I was so disgusted I quit racin'. They said that when I won I'd been goin backwards an' they plumb disqualified me!"



By RANDALL HENDERSON

I'VE been reading the regulations governing the administration of the new Five-Acre homestead law, printed on another page of this Desert Magazine.

As far as the rules go, I feel that Secretary Ickes and his assistants in the department of interior have set up ample safeguards, both for the public domain, and for the individuals who will want to take advantage of this opportunity to acquire cabinsites on desert and mountain.

The law leaves wide discretionary powers in the hands of the Secretary—and that probably is necessary. It remains to be seen how effectively U.S. Land Office officials will operate in carrying on their responsibility. The success or failure of the measure will depend very largely on the caliber of the field men whose duty it is to investigate the applicants and classify the lands.

One of the wisest provisions in the department order, in my opinion, is the stipulation that in most cases the land must be leased for five years before it can be purchased. All kinds of people will be making applications for these sites—and that five-year lease will be a sort of probationary period to determine—(1) if the occupant really wants the tract, and (2) if Uncle Sam really wants him as a permanent tenant.

One point should be kept clearly in mind by those who desire to acquire land under this law. These five-acre tracts are designed primarily as homesites—and not as a source of livelihood. They are for those who can afford the luxury of a little cottage on the desert or in the mountains which will yield no return except the mental and physical vigor that comes from fresh air and sunshine, and escape from clanging traffic and prattling neighbors.

* * *

My friend Harry Oliver the humorist was telling me the other day about a desert prospector who was so lazy he put popcorn in his flapjack batter, so the things would flip themselves over.

* * *

A New York woman wrote to the Phoenix chamber of commerce saying she was looking for a "safe place to build a refuge for my children in case of war." She wondered if Grand Canyon would be a good spot.

I don't know what the secretary of the chamber of commerce told her, but I have no doubt he gave her ample assurances. I can think of a thousand places in the desert region where the whole population of New York city would be as safe against Hitler's bombs as they would be at the north pole—and a lot more comfortable.

The danger of German bombs in New York city is very

remote, in my opinion, but I would like to suggest to this jittery mother that it would be a good idea to bring her kiddies out to the Grand Canyon anyway. The city—any city—is an atrocious place in which to raise youngsters.

Folks who become engulfed in the artificial environment of a metropolis, without frequent contact with the good earth as God created it, become terribly distorted in their thinking. Their lives are so wholly governed by man-made rules and gadgets and distractions that they get the idea that man created the earth and all that is on it. They are so submerged in the froth of our man-made civilization that they completely lose sight of the realities of their existence.

The unhappiest people on earth are those who have lost, or never acquired the art of enjoying their own companionship—and that is what the big city does to folks.

* * *

Congratulations are due this month to Newton B. Drury on his appointment as National park service director. He is a Californian with a fine record in the service of park development within his own state. No branch of the federal government has a finer type of personnel or higher morale than the park administration, and I am sure there will be no let-down while Newton Drury remains at the head of the organization.

* * *

Friends in Palm Springs tell me that hundreds of veteran Washingtonians in Palm canyon, which were swept by fire last spring, are growing new fronds and that practically all of them will live. As far as I am concerned, that is more important news than the invention of a new gadget which will eliminate the static in my radio. Those palms have been providing food and shelter and beauty for the human race for hundreds of years—and will resume that role again as soon as they have recovered from the fire. About 98 percent of that which comes to me through the radio has neither beauty nor utility.

* * *

A few days ago I met a woman who doesn't like the desert—and she was very frank about it. "If I had my way," she exclaimed, "I would blindfold all westbound motorists at El Paso and keep them blindfolded until they reached Banning, California."

No, I didn't argue with the lady. It probably is a good thing some of the folks feel that way about it. Otherwise this desert would soon become so cluttered up with human beings it wouldn't be any fun to live here. One of the charming things about this desert region is that we have lots of elbow room—and I hope it will always be that way.

Dear Mr. Henderson:

I wish you'd print this part of my letter for the other long-suffering writers whose work appears in DESERT. We like to hear from your readers and know that they have appreciated our writing. We don't mind leaving other work to answer questions and give prices and addresses as to where Indian material may be secured.

BUT we do think that if a reader wants an answer, said reader should include a self-addressed and stamped envelope. Getting stamps enough to take care of important letters is a task when one lives in the wilds 20 miles from the postoffice, and the roads are blocked with snow for weeks at a time.

I feel safe in saying that out of 100 letters received asking for information, etc., not five writers are thoughtful enough to send a stamped envelope for reply.

Otherwise, I am in a very good humor, thank you.

MARGARET SMITH.

Following is a portion of a letter received by H. S. Keithley of Phoenix, Arizona, from his friend Rudolph A. Forestier, Prunvaux "les Auvents" par Boigneville, Seine et Oise, France. Obviously, this was written before the invasion of France:

Dear friend:

I must tell you that I have just received lately the two magazines, one the Arizona Highways and the other, The Desert. Oh, thank you very much, old friend. I am mighty thankful for your kindness and I must tell you that I enjoyed them immensely. . . . Now I understand so well why you take your car and spend your time in the desert. Well, "desert" is not exactly the word, as it seems so full of vegetation and all kinds of life. How I would enjoy to go with you. Your country reminds me of all my preferred books of childhood about Indians, Apaches, etc.

RUDOLPH A. FORESTIER.

Azusa, California

Dear Sir:

It was my privilege to visit Grand Canyon during November, 1909. I contacted Capt. Hance, whom Dr. Lockwood wrote about in your July number, a few minutes before en-training for Williams.

He was talking with several men and laid a five-dollar bill on the table and said: "Will anybody cover that to say that more than 20 people will arrive on this afternoon's train?"

There was no response. Then he said: "Well, I am game. Will anybody cover it that less than 20 people will come?"

There were no takers either way. The picture on page 16 looks exactly as I remember him.

CHAS. H. EDWARDS.

San Diego, California

Desert Magazine:

Enclosed is check for the renewal of your magazine for 1941. Our family has been a subscriber since January and we do not intend to stop until you do.

I have to thank your "Desert Quiz" for the enclosed check. At a recent meeting of those interested in the desert we had, for entertainment, a questionnaire composed of a set of your Quizzes. The prize was a one-year subscription to the Desert Magazine, given by our host, Mr. Baylor Brooks. I was fortunate enough to win the prize.

I would like to say that for an evening's entertainment, whether there be a prize or not, a set of your Desert Quizzes hits the spot.

JIM LUCE, S. D. S.
(Sand Dune Sage)

LETTERS

Portland, Oregon

Gentlemen:

Ever since my husband and I "discovered" your fine Desert Magazine we eagerly await each number, and cannot find the right words to express our mutual enjoyment of it. I particularly like the articles dealing with stone collecting.

We had the good fortune to visit Bryce, Grand Canyon, Zion and Boulder dam in June '38, and we hope to make the trip again this summer. Throughout our wanderings over the West we have come to love the southern Utah and northern Arizona region best. Its beauty is equal even to our own lovely Northwest.

I feel, though, I have a small bone to pick with you in connection with the short article concerning American buffalo, in your April number. You gave a listing of the states wherein they still are found, but failed to mention our state of Oregon where we can boast of a good 14 head. I verified these figures from the U. S. Biological survey and the Oregon state game commission before taking you to task. Recently our Washington park in Portland traded two bison to Balboa park, San Diego, for some other animals and birds we did not have.

May we wish you every success for your grand magazine. I wish we had the opportunity to visit more of those interesting spots you write about.

MRS. DAN JENSEN.

Thanks, Mrs. Jensen, for the correction. We took our buffalo data from a reprint of a government report—and evidently there was an omission somewhere along the line.

—R. H.

Upland, California

Dear Mr. Henderson:

Enclosed is one dollar for copies of the Desert Magazine for July, August, September and October, 1938. Our copies for these months have disappeared, and they do not seem to have the homing instinct. We want to keep a complete file.

Aside from the general pleasure we get out of the Desert Magazine, Mr. Hawthorne uses the material found in them in making his scout trips into the desert more interesting for the boys.

May I take this opportunity to say we have followed the development and growth of your magazine from the time the possibility of it was suggested by the late Harry Carr in his column "The Lancer" in the Los Angeles Times, and then through the joy of reality when the first issue came and with continued pleasure as each ensuing number appeared.

INEZ J. HAWTHORNE.

Dear Sirs: Minneapolis, Kansas

Yes, the desert seems to be the only peaceful place left in the world. I was thinking of this on our last mineral field trip. Redrock canyon was so peaceful. We sat in the shade of trees along the small stream and talked about the war, and among other things the Desert Magazine. Most of our members are globe trotters and travelers. We have all been on trips nearly everywhere in the United States, Canada and Mexico. The dreamy peaceful articles in your wonderful magazine are good for the soul.

HENRY K. WARD.

Dear Henderson:

Just received my new copy of THE DESERT, and darned if it didn't start me lovin' my own little old Hole here all over again.

You see, sometimes I get an onery streak and get to thinking this place is mighty hot and uncomfortable and then something like your magazine happens to me and it gets to be the swellest place in the world once more. Right now — due to your influence — the sun is only friendly and the quiet and peace of the desert is something this bombastic world might well envy me. Me and Hairy Lou (some folks think he is just a tarantula but he really is a grand pal also) and Gila Bill (a temperamental old monster but a heap of good company) is right happy most of the time until my levis get to feeling like one of them electric pads on me.

June 23. Say, Mr. Henderson, can't you rush along another copy? Yesterday's has lost its magic and I'm hot again. One of them days when clouds hang low and no air and a man's disposition gets murky. But life must go on. This vale of tears still holds my love in spite of years of sand and heat and quarts of sweat. At least my heart is beating yet.

I guess for me there's no respite from torrid day and sleepless night, unless, perchance, a way I find to hie me to some cooler clime in whose brisk air such pep I'll store 'twill last me for a month or more when I return to work and sweat. Say! This darn heat will get me yet. In proof thereof—with body dripping, could I write such stuff were my mind not slipping?

I tell you if it doesn't rain these signs of a disordered brain with which I'm cluttering this page will get beyond the rhyming stage and take on some malignant form that cannot be assuaged by storm. If such a dire catastrophe should come to pass—ah woe is me—I know the form 'twill take I bet—I'LL LEARN TO LIKE TO WORK AND SWEAT! ! Could anything be more depraved than that? But look! I'm saved! I'm saved! Again I'm shamed for my complaining, believe it or not — it's really raining. And I can't type either but I got to quit trying to now and go bring Hairy Lou and Gila Bill into the shack. It's been so long since they seen rain I'm afraid the shock might stun 'em.

Thanks for a swell magazine and hurry along the next issue.

ARIZONA IKE.

Indian Springs, Nevada

My dear Mr. Henderson:

I am sending you a copy of the poem "The Call of the Wild" by Robert W. Service.

It was the last verse of this poem, reading "They have cradled you in custom," etc. that was printed on the first page of your July issue with an inquiry from W. H. Burtis as to the name of the author. I have copied the entire poem for Mr. Burtis' information, and will appreciate your sending it to him.

TIM HARNEDY.

Thanks, Tim from both Mr. Burtis and the Desert Magazine.

— R. H.

Desert Center, California

Desert Magazine:

Seven miles west and seven miles south of Desert Center, California, I have found the lost Pegleg mine. I have a lot of gold. Come and see me.

J. C. HILL.

Friend Hill: There ain't no justice. Steve Ragsdale and I have been prowling over that Orocopia range for years, and never found a color. And now you come along and find a million dollar mine right under our noses. More power to you!

— R. H.



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