

THE

Desert

M A G A Z I N E



OCTOBER, 1939

25 CENTS

LETTERS

Hollenbeck Home,
Los Angeles, California

Dear Mr. Henderson:

We had never seen a copy of "Desert Magazine" until three weeks ago—then a friend found one of February 1939 in a wastepaper truck—and brought it to us. We polished it and found it a jewel.

In addition to being 93 and blind I have a broken bone and live in a wheelchair. My sister who is 84 takes care of me. She has not time to read . . . So we have five readers, who read such books as Longstreth's "Laurentians," all by Shackleton, "Land of Little Rain," Mary Austin, etc. With our books we have traveled almost all civilized lands and some uncivilized. You may imagine how the "Desert" appealed to us.

We found one current "Desert" issue, August, visited nearly every second hand magazine shop in Los Angeles and finally were rewarded with December 1937, July '38 and May '39. For some we paid fifty cents a copy. They were worth it! But we exhausted the supply.

Fifty years ago I roamed over much of the wild land around San Diego and Tiajuana for Philadelphia "Times" and "Press."

My sister retired after 30 years as head cashier at Hotel del Coronado, with the advent of automobiles, coached thousands of guests (El Centro bound) as to the "jump" of sidewinders.

ESTELLE THOMSON.

By Adelle Thomson.

Phoenix, Arizona

Dear Sir:

Since writing you last night I have read the article on Ehrenberg in the December 1938 issue by Woodward and Widman. It is an excellent article and shows good research and preparation, however there is one point I would like to mention in which this article errs. The town was founded by my Grandfather Michael Goldwater and named by him after his very good friend Herman Ehrenberg.

Mike and his son Morris stopped at Smith's place in Dos Palmas the night Ehrenberg's body was found and decided not to risk a similar fate by stopping there for the night and moved on. My grandfather had already established a business at La Paz but because of the distance that that town lay from the ever changing river channel he was looking for a new site where the cost of unloading from the steamers would not be so great.

You see at La Paz freight had to be unloaded by stevedores, transported the distance from the boats over the marshy land to the town and then loaded again on wagons. The site of Ehrenberg offered a place that the steamers could be unloaded directly onto the wagons because of the high bluff there that permanently determined the river channel. Mike had the town laid out and plats drawn and it wasn't long until Ehrenberg was a busy little station. There are a few of these plats around but they are very hard to find as I have found out in over ten years intensive search for one.

Ehrenberg was never called Mineral City. There was another settlement of that name

as is shown on many old maps of the period.

This was all told me by my uncle Morris Goldwater who passed away this year at the age of 87. He came to La Paz when he was only 14 years old and returned to live permanently in this state a few years later. He had lived in Arizona 72 years of his life.

The business that my grandfather started on the Colorado in 1860 is still in operation being run now by my brother and myself. It is I believe one of the oldest businesses in this country from the standpoint of its having been in the same family for so long.

The old adobe buildings that are left were our store which served as the post office; saloon, freight station and city hall. The family lived in back of this building and a wall or two still stands of the dwelling.

I have many many old letters taken from the post office there and old books of the freight company and petitions for new post offices, etc.

BARRY M. GOLDWATER.

Thanks, Mr. Goldwater. You've given us some information that isn't in the books, and we are glad to pass it along to our readers and preserve it as a part of the permanent record of the Southwest.

— R. H.

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Death Valley Jct., Calif.

My Dear Sirs:—

Enclosed find 50 cents for which please send me a couple of the September issue of your splendid wide-awake Desert Magazine.

Please be sure to give me the September issue, because it certainly has a lot to interest us Death Valley-ites. That is a splendid article by Cora Keagle, and then, too a good reproduction of the Natural Bridge; and also of the Old Timers—Borax Smith, Frank Tilton and Ed Stiles. . . . Frank is still working every day, in the carpenter shop, at the T. & T. R. R. car shops here. He's a prince if there ever was one — Also, Ed Stiles is a dandy fellow, living as you perhaps know, on his ranch two miles east of the city of San Bernardino.

Kind regards to you and your Staff—Also complimenting Cora Keagle on her splendid article.

RILEY SHRUM.

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La Jolla, California

Dear Randall:

I wish you to know that we have had fun following the "Desert Quiz." I have managed to keep up an average of 17 answers. That is, if you will concede that the answer to Question No. 3 in the August issue is "Padres" and not "Prehistoric Indians."

The watermelon is botanically known as *Citrullus vulgaris* and is a native of tropical Africa. It was introduced into India centuries ago and there obtained its Sanskrit name, *Citrullus*. It has no name in the ancient Greek and Latin languages, nor is any mention made of its being grown in the Mediterranean countries before the Christian Era. It is said to have reached China about the 10th century, A. D.

All authorities seem in doubt as to the original introduction of the watermelon into the United States. There is no evidence from the varieties of watermelon now grown that it reached this continent from the Mediterranean region. In all probability it was introduced into Mexico and South America during, or very soon after the Spanish conquests; either directly from Africa, or from India or China by way of the Philippine trade route. Therefore, it seems logical that during the 17th and 18th centuries the watermelon would be rather widely distributed throughout the desert regions of the southwest by the Spanish missionaries and explorers. *No es verdad?*

GUY L. FLEMING.

La Canada, Calif.

Dear Sir:

Now I want my money back,
I couldn't go to bed;
When I had it figured out
I was standing on my head.

(See picture, page 18, Sept. issue.)

Yes, we turned the dinosaur tracks up-sidedown. Toney the pressman says it is all his fault — and his alibi is that the dinosaurs lived so long ago he had forgotten what their tracks looked like. I guess we should apologize for the error—but the truth is we were rather flattered by the huge pile of mail we received calling our attention to it. Readers of the DM surely do know their dinosaurs.

—R. H.

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Explorers Club
New York City

Editor Desert:

In England a kit fox is known as a swift fox. It may be that in some localities a desert fox is called a swift but in most localities a desert swift is also a lizard. Genus *Sceloporus*, the pine lizards, with the name locally applied to any lizard that moves swiftly.

This difference of opinion cut my Sagedom to a score of 19. However I am checking with my friends at the American Museum of Natural History.

J. ALLAN DUNN.

You are right. In different desert localities both the kit fox and the pine lizard are called "swift." Score yourself a perfect 20, and thanks for the correction. Desert Magazine's only alibi is that its Quiz editor lives in a desert sector where the kit fox is common and the pine lizard unknown.

—R. H.

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Riverside, California

Dear Sir:

I take this opportunity to make a few general comments on the "Desert Magazine." I have a complete file of the publication including the issue for November, 1937. Your offer of one dollar for that number is no temptation to me to break the file.

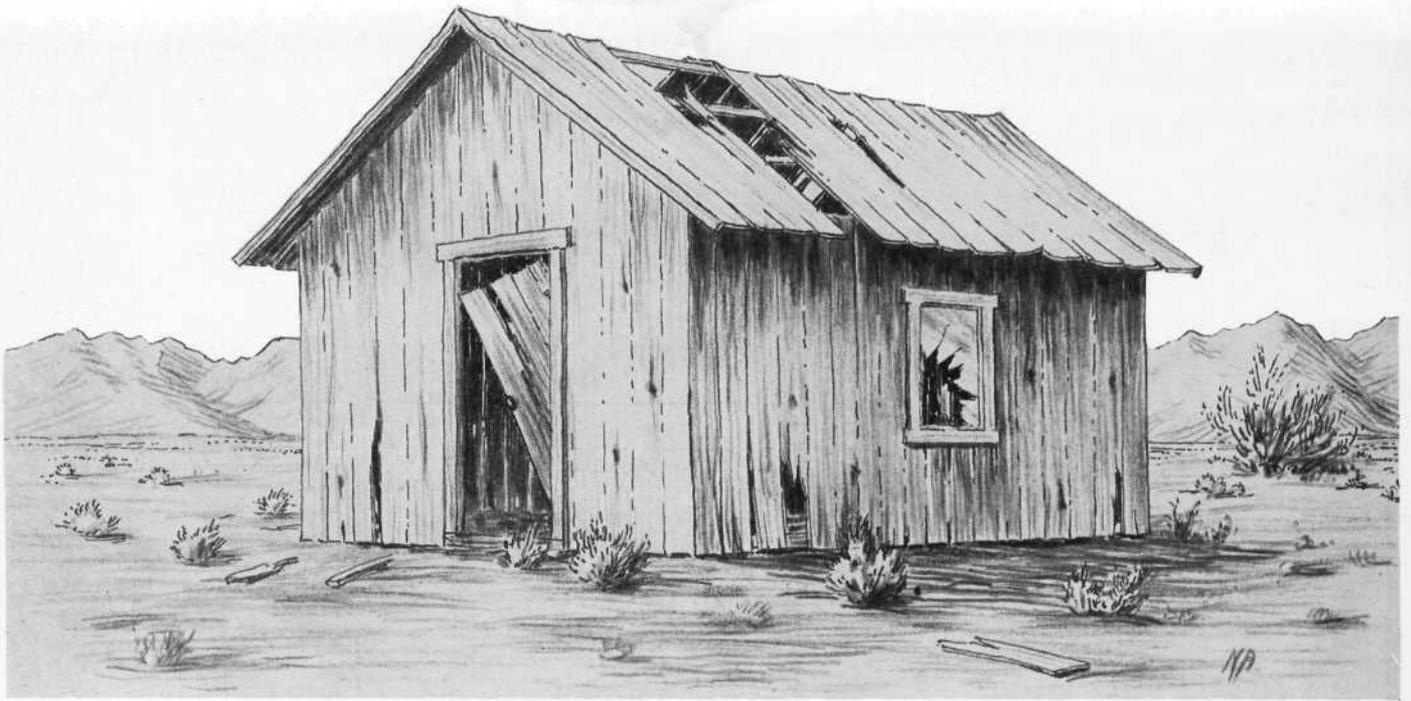
I like the editorial policy of making the magazine a publication dealing with many things in a thoroughly readable style. The "Letters" and "Just Between You and Me" departments give fine personal touch to say nothing of their value to the editorial staff and to contributors as a means of learning what the readers want (or don't want). I believe the Landmarks contest and Desert Quiz give the right amount of novelty and help a lot to create interest and excite curiosity.

I would like to see more articles from the outer fringes of the desert—Oregon, Idaho, Wyoming, Colorado, Texas, Mexico, *o dondequiera*—and the subject matter may cover anthropology, archaeology, ethnology, geology, geography, mineralogy, botany, ornithology, zoology (provided the authors are not too technical), history, tradition and folklore, Indians, trappers, prospectors, freighters, stage-drivers, cowmen, outlaws, Mexicans, all tied in in relationship to the desert.

I was disappointed not to find a new plant with its picture, its common English and Spanish (or Indian) names and its technical title in the July number, but the articles by Charles Kelley, Leo McClatchy and others were fine and, as usual, John Hilton did a dandy job.

Sincere wishes for long-continued success.

W. I. ROBERTSON.



Desert Shanty

BY DORIS PRIESTLEY
 Pomona, California
 SKETCH BY NORTON ALLEN

Cold, star-filled night, deep pulsing desert day
 Have left you humbled. Still you bravely lift
 Your lonely, empty walls of sombre grey,
 To guide some wanderer through the sandy drift.

You wait in vain the safe return of one
 Who dreamed of home, and built his flaming fires

Upon your hearth, whose vision's woof was spun
 To clothe the tumult of his fine desires!

Back to the shifting soil on which you stand
 Return once more! Your sorrowing vigil cease!
 For you the silent, moving, changing sand
 Will build a shrine and bring eternal peace!

INDIAN BOWL

BY ANN BUELL STARK
 Seattle, Washington

How patiently have old, brown hands
 With wet clay wrought to form this bowl;
 And painted it with glowing hues,—
 A chalice holding desert's soul.

VACATION DREAMS

BY ANNA E. FALLS
 Ganado, Arizona

I'd like to be a burro,
 A ragged, shagged burro,
 A vagabonding burro,
 Just dozing in the sun.
 Now, wouldn't that be fun?

I'd never comb my hair, sir;
 Nor brush the coat I wear, sir;
 What I didn't know, ne'er care, sir;
 Undisturbed by fame or fad
 Now wouldn't I be glad?

I'd ape no arts nor isms;
 Wail no foreign feuds nor schisms;
 Bothered not by crowns nor chrisms,
 While I ambled through the sand.
 Wouldn't days like that be grand?

I'd browse among the sages—
 Not the kind that write on pages—
 And I'd drowse for hours and ages,
 Where there's neither work nor worry,
 And no need to ever hurry.

Oh, I'd like to be a burro,
 A happy care-free burro,
 A lazy lop-eared burro,
 Just a roamin' here and there.
 That's the life I'd like to share.

BONDAGE

BY MRS. O. C. BARNES
 Los Angeles, California

I'd heard and read of the desert waste,
 And often I'd wondered why
 There could be room for so fearful a place
 Beneath so gorgeous a sky.

But now that I know this barren land
 This "desert of death," so to speak
 I regret the day that I cast my lot
 With the milling throng on the street.

DESERT MAGIC

BY BESSIE M. MOORE
 Las Vegas, New Mexico

Out where the Desert Spirit dwells
 Mother of Fate there weaves her spells;
 Threads that are fine, and soft, and grey
 Tell of the desert dawn of day.
 Threads that are gleaming, row on row,
 Woven in noonday's golden glow.
 There's crimson blaze of sunset ray
 That marks the close of desert day.
 And last of all a velvet bar,
 Where shines a single, silver star,
 Makes up the web that holds me here
 A willing captive year on year.

CREED OF THE DESERT

BY JUNE LE MERT PAXTON

"Now some folk say the snake's
 a curse,
 But human venom can be worse."
 At least, so says Sidewinder Sam
 Who worries not, nor gives a—rap.

THE DESERT RESTS

BY ALICE D. SCHOELLERMAN
 Pomona, California

So like a tired old man, who in his day
 Of strength and fabrication wrought with care
 His own bright world, and quaffed the cup
 of play,

The desert sits alone in summer's chair,
 Rocking the time away, dreaming of things
 So dear, so sweet; remembering the bells
 Of Joshua trees, the golden cups, the wings
 Of birds and butterflies that fanned the wells
 Of honey where the bees sucked eagerly;
 Remembering the poppies' dazzling gleams
 The lupines' restful blue, the meagrely
 Supplied, though ardent, lovers' whispered
 dreams.

The desert, resting, waits for God to bring
 Strength for the fleeting loveliness of Spring!

DESERT SCENE

BY EVA CARPENTER IVERSEN
 Encinitas, California

I saw a swift dart through the sage—
 A black, black widow's abode—
 A chipmunk raised his bushy tail
 And sailed across the road.

A raven fed beside the way—
 A rabbit scurried by—
 A bird flew into a holly bush—
 A grey hawk floated high.

The mountains raised their hoary heads—
 The sinks lay far below—
 The valleys were clad in shimmering heat—
 The peaks wore bonnets of snow.

A miner passed with his burros and packs.
 He was tall, and very thin.
 The lady who rode by my side exclaimed;
 "Why! That is Seldom Seen Slim."

When Merina Lujan was a little girl she climbed the steep slopes of Taos peak with her grandfather. When they reached the summit, bleeding and exhausted, he said: "Never mind, little grandddaughter. The air up here is good. It belongs to the gods, and to breathe their air one must make a sacrifice." Today Merina is regarded by many critics as the top ranking Indian artist of America. But in climbing the long steep slope to fame she learned how true were the words spoken by her grandfather.

She Breathed the Air of the Gods

By HELEN SHIELD SPEAKER

IN a little cottage near the end of a narrow street that winds beside the rippling waters of Acequia Madre in Santa Fe, New Mexico, lives dark-eyed Merina Lujan Hopkins. The art world knows her by her Indian name, Pop Chalee.

Merina is a daughter of the Pueblo of Taos—a daughter of whom her tribesmen are proud, for she is regarded by many critics as the foremost Indian painter in America today.

Also, Merina thinks very highly of her people. "The Taos Indians are fighters," she will tell you. "Was it not in Taos that the revolt of 1680 was born?"

Despite her admiration for the fighting prowess of her ancestors Merina is a peaceable person. If you follow the path to the little home almost hidden behind tall hollyhocks and flowering vines, probably you will be greeted at the door by a small girl with laughing eyes and long black braids that reach below her waist.

If you make the mistake of inquiring, as many have asked, "Is your mother at home?" you will be informed by the laughing young lady that she is the mother of the household. Her friendliness will put you quickly at ease.

Artists and distinguished visitors from all parts of the world come to this modest

home in historic Santa Fe. Within a two-week period last summer Pop Chalee entertained a prominent New York publisher, a well known Indian lecturer, 10 German editors visiting this country on a world tour, two Jewish artists from Palestine and a celebrated French painter.

She was the first Indian painter included in America's "Who's Who," and one of the few American Indians who have had their work exhibited in Europe. Her paintings are displayed this year at the San Francisco and New York fairs, and are hung permanently in the Russell Sage foundation in New York and the Stanford Museum of Fine Arts in Palo Alto.

What is the secret of this Indian girl's rapid rise in the art world at an age when many artists of talent are struggling for bare recognition?

Merina answers the question by re-

peating an old Indian proverb. "A road is given you," she quotes, "and you must follow regardless of all else."

Then she turns and looks at the distant mountains, her eyes darkening with emotion.

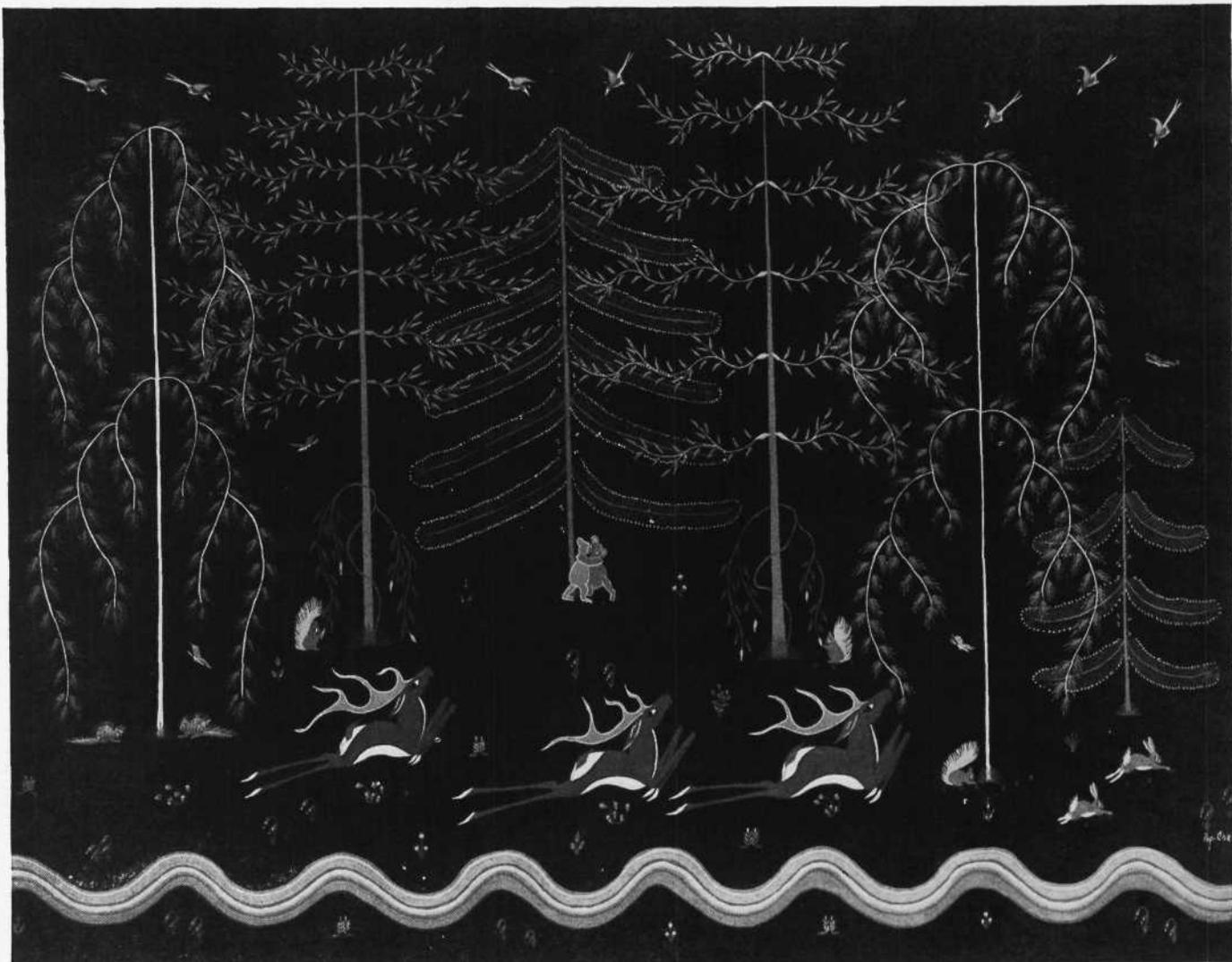
"The path up to the top of Taos mountain is much steeper and rockier than these slopes near Santa Fe," she says. "Often I used to climb Taos peak with my *thleetuo* (grandfather). By the time we reached the summit my arms and legs would be scratched and bleeding and my fine buckskin boots soiled and torn."

"'Never mind,' my grandfather would say. 'The air up here is good. It belongs to the gods, and to breathe their air one must make a sacrifice.'"

It was many years before Merina understood the full truth of her grandfather's teaching as it applies to everything in life. They were years spent in the pro-



Merina Lujan Hopkins, known in the art world by her Indian name, Pop Chalee. Photograph by Kellogg Studios.



saic and difficult task of raising a family while trying at the same time to carry on her art work and carve out a career for herself.

Merina Lujan was born at Taos Pueblo. She was the daughter of Joseph Lujan, beloved ambassador of the Taos tribe. A widely traveled and highly intelligent man, he spoke six languages and for many years was interpreter for John Collier, now commissioner of Indian affairs. Merina's uncle, Tony Lujan, married Mabel Dodge, the writer.

In the Tewa language of the Taos Indians Pop Chalee means Blue Flower. The name was given her by her grandfather. Blue lake is the sacred lake of the Taos, and it was from the delicate mountain flower that grows only in the higher altitude of the Sangre de Cristo mountains that the name was derived. The name, Merina, was given by her mother. Today she uses the Indian Pop Chalee only in her professional work.

As a child Merina roamed the fields and mountain meadows where her companions were the animals she now depicts so gracefully on canvas. There she developed a deep love and understanding of animal nature, but it was many years

Following the traditional method of her Indian ancestors, Pop Chalee does all of her work in two dimensions only. Her gay little bears and graceful deer are a delight to art collectors. This photograph of one of her water colors was made by Wyatt Davis of Santa Fe.

before her talent for re-creating her animal friends in artist's colors was discovered.

She lived for several years at Salt Lake City and there she met and married Otis Hopkins, her Anglo-American husband and there her two children, Jack, aged 14, and Betty, 12, were born. She was known in Salt Lake as a talented Indian girl who could sing and dance and lecture. No one, least of all herself, suspected her talent for painting during that period.

Then the Hopkins family moved to Santa Fe—and Merina met Dorothy Dunn, the teacher who was to recast the Indian girl in a new role. In 1933 Miss Dunn was placed at the head of the newly created department of Fine and Applied Arts in the Indian school at Santa Fe.

Merina wanted to learn to paint—and she enrolled in the school. Her children were now of school age and she accompanied them to the campus each day. Miss Dunn quickly saw the natural talent in this vivacious young Indian mother, and set to work to encourage and develop it.

How well she succeeded is attested by the fact that in less than two years the paintings of Pop Chalee were being exhibited on both sides of the American continent. John D. Rockefeller, Jr., so admired her work he sent her a large order of personal greeting cards to be hand-painted.

Although she has been schooled by American teachers and has lived the greater part of her life with the white race, she has retained her inherent racial integrity, and the cultural outlook of the Indian.

She is proud of her Indian blood and has a deep love and respect for her race, particularly the Pueblo people of the Southwest. She is keenly interested in the problem of the present day—the problem of adjustment between the religion and

customs of her people and the white man's civilization.

"The Indian is an artist by nature," says Merina. "The men and women of my race are at their best in creative work, whether it be the weaving of a blanket, the molding of pottery or the painting of pictures.

"We can learn many things from the white man—but our art will remain true only if it is the expression of our own cultural legacy. The greatest service the white man can render the Indian is to preserve and encourage the creative ability inherent in our race.

"Indian art is the only truly native art in America," she points out. "It is pure because we do not study models. The Indian race possesses an instinctive sense of balance, harmony and design — but each Indian has his own individual approach and reproduces his own concept.

"For instance, no two of the 175 Indian pupils at the Santa Fe Indian school draw horses alike. Life and vitality show in every animal, but each differs markedly from the others.

"We work in two dimensions only, as our ancestors did—never in three. And we use opaque water colors because they are the nearest to the ancient Indian mineral and organic pigments. However, we experiment in color, design and subject matter—and that is the reason Indian art is such a vital living thing today."

One of Merina's best known water colors is her copy of an Indian Skin painting, one of the few known to exist. Originally these skins were hidden in the kivas of the pueblos where no white person was ever allowed to see them.

Probably she is best known for her delightful animal paintings. These are in demand among discriminating collectors. No other artist paints animals with the delicate grace and joyous rhythm of Pop Chalee. Her gay little bears and fleeing deer sparkle with animation. She has illustrated several books for children and recently completed the illustrations for "My Mother's House," a story of Indian life to be published by the Viking press.

Animals are as much a part of this artist's life as her own children. Her home at times takes on the appearance of a private zoo. Her pets have included Horace, the turtle, who lived beneath a hollyhock plant and ambled contentedly from kitchen to living room, Lobo the police dog, Jeepers-Creepers the black chicken who follows Merina from room to room like a devoted dog, a chipmunk and a rabbit. If others come Merina immediately adopts them.

But she never allows her pets or her art work to interfere with the devoted

TRUE OR FALSE

Just for variation, the Desert Magazine staff has prepared a "True or False" test to take the place of the "Desert Quiz" this month. We hope our thousands of "Quiz" fans will find this set of problems no less entertaining and informative than those which have appeared in previous issues. This is a rather severe test of your acquaintance with the desert. If you can answer 10 of them correctly you are a well informed student of the desert. A score of 15 makes you eligible for the fraternity of dyed-in-the-wool "desert rats," and if you solve more than 15 you will be entitled to the honorary degree of S. D. S.—Sand Dune Sage. The answers are on page 32.

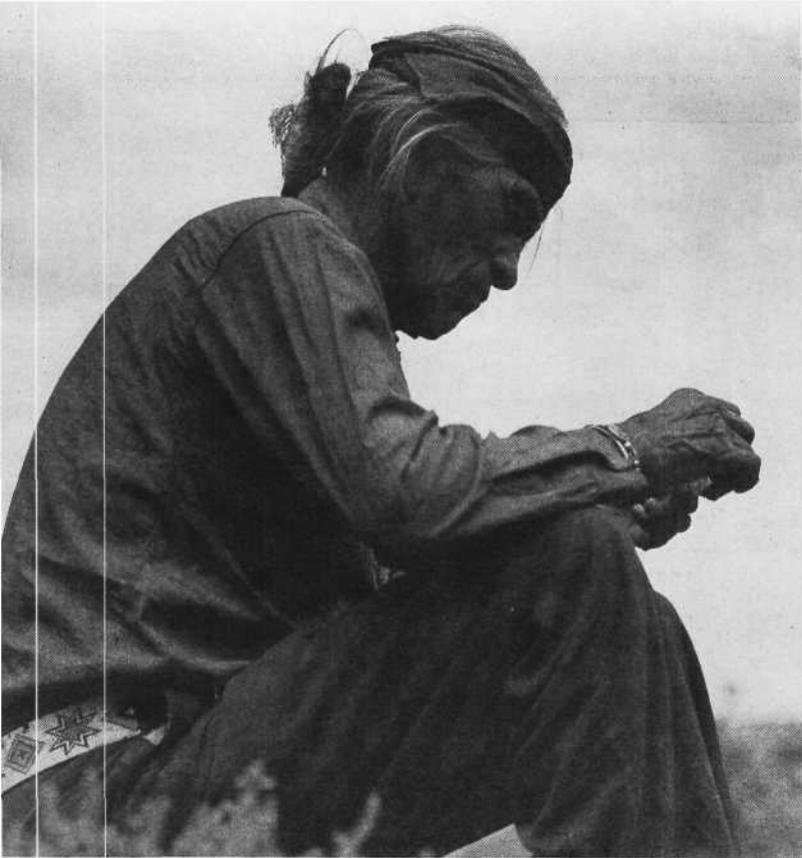
- 1—The tragic Oatman family massacre in 1851 occurred at Oatman, Arizona.
True..... False.....
- 2—The soldiers who accompanied Juan Bautista de Anza on his trek from Tubac to Monterey in 1775-76 wore armor plate of metal.
True..... False.....
- 3—Salton Sea, California, would soon evaporate and become a dry lake if it were not fed by drainage water from the Imperial Irrigation district.
True..... False.....
- 4—Pimeria is the name of a grass that grows in Southern Arizona.
True..... False.....
- 5—The State flower of Arizona is the Saguaro.
True..... False.....
- 6—The Navajo silversmiths learned their craft from the Mexican.
True..... False.....
- 7—A rattlesnake adds a new button to its rattle every year of its life.
True..... False.....
- 8—Shiva's temple is in Bryce canyon, Utah. True..... False.....
- 9—The Smoki people of Prescott use only non-venomous snakes in their annual ritual. True..... False.....
- 10—Desert mistletoe never grows on mesquite trees. True..... False.....
- 11—Largest tributary of the Colorado river below Boulder dam is the Bill Williams river. True..... False.....
- 12—The sand in the White Sands national monument of New Mexico is composed mostly of gypsum. True..... False.....
- 13—The state university of Nevada is at Reno. True..... False.....
- 14—The most famous Boothill cemetery in the Southwest is located at Tombstone, Arizona. True..... False.....
- 15—The "Lost City" of Nevada derived its name from the fact that it is now buried beneath the waters of Lake Mead. True..... False.....
- 16—The Bisnaga or barrel cactus often grows to a height of 12 feet or more.
True..... False.....
- 17—The color of the blossoms on a Palo Verde tree is yellow.
True..... False.....
- 18—The highest mountain immediately adjacent to Death Valley, California is Telescope peak. True..... False.....
- 19—There are just 29 native palms growing today in the oasis at Twentynine Palms, California. True..... False.....
- 20—Desert Indians in Southern California formerly used a crude boomerang to capture rabbits. True..... False.....

care she gives to her children. With the help of Betty and Jack she does her own housework, preparing three meals a day, doing her ironing, and finding time to sew, quilt and keep up her dancing. She even took a course in aviation.

Visitors at the Inter-Tribal Ceremonial at Gallup each year find Merina dressed in a white doeskin robe, her arms and fingers heavy with turquoise and silver, a string of wampum entwined in her long black braids, and wearing the distinctive

white boots of the Taos women. Or she may be dancing around an Indian campfire to the throb of Indian drums as part of the Ceremonial program.

According to an old tribal legend, the Indian "breathes the spirit of the Sun, the Stars and the Earth unto himself." And that perhaps is the explanation for the fascinating personality of this Indian girl, for she not only breathes the spirit of the Sun, the Stars and the Earth, but the spirit of joy and eternal youth.



Ayoo'nalh nezi, Navajo Medicine man. Photograph by Milton Jack Snow.

If you are one of those who regard the Navajo religion as mere savage superstition and the medicine men as a clan of fakirs, you may be more tolerant after you read the following story. The Navajo creed has this in common with all other religions — Faith is its cornerstone. Medicine men generally are reluctant to discuss their religious beliefs with the aliens of another race but Ayoo'nalh nezi is an unusually intelligent Indian—and his friendship for the author of the accompanying article has made possible one of the most informative features ever printed in the Desert Magazine.

By RICHARD F. VAN VALKENBURGH

AS I followed a dim trail that wound through a forest of juniper and piñon deep in the Navajo reservation near Canyon del Muerto my senses caught the rhythmic beat of primitive music.

Somewhere near at hand the tribesmen were holding a ceremonial dance—and that was the goal of my lone journey into this remote desert wilderness. Through the mysterious "wireless" of Navajoland I had learned that on this night the Indians were to hold the Fire dance of the Top-of-the-Mountain chant. I wanted to witness this dance, but more particularly I wanted to become acquainted with Ayoo'nalh nezi, famed medicine man, who, perhaps better than any other among all the Navajo, knew every line and symbol of this greatest of all healing ceremonies.

A few moments later I glimpsed the flicker of firelight through the dark branches, and then I came upon the scene—such a picture as no mere words can portray. Hundreds of silent intent Indians were seated on the ground in a little clearing in the forest. Beyond, the dancers were performing their sacred rites while the air vibrated with the rhythmic chant of a little group of medicine men singing to the accompaniment of buffalo-hide rattles. The air was scented with the pungent odor of burning juniper. The smoke burned my

Born to be a Navajo Medicine Man

nostrils, but the Indians were too intent on the ceremony to share my discomfort.

Apparently I was the only white man present, and I squatted on the ground unobtrusively with the family of Tachiini nezh. No word was exchanged. I preferred to look on and ask no questions. Far into the night I sat with my Indian friends and as the ceremony continued I was transported to another and more ancient world in which my own ancestors perhaps played the roles of medicine men in a kindred ritual.

My spell was broken by the gentle pressure of a hand on my arm. As I turned, a Navajo lad whispered softly: "My grandfather wishes you to come up with the medicine men. He wishes to speak to you."

We pressed through the colorful assembly of Navajo until we came to the chanting medicine men. Following the example of my guide I squatted in a vacant place in the circle of chanters. When the shifting firelight cast a bright shaft our way, I saw that I was seated beside Ayoo'nalh nezi.

An old Navajo woman came out of the darkness carrying food. She laid on the ground before us barbecued mutton ribs, fat discs of Navajo fried bread, and a pot of steaming coffee. Ayoo'nalh nezi stopped chanting and laid down his rattle, then turned to me and said: "We are surprised to see a lone white man in this remote place. Eat, my friend! Then you shall stay by my side and see every dance."

Thus began my friendship with Ayoo'nalh nezi. In the intervening years we have spent many hours together, hours that were of increasing interest to me as my knowledge of his language improved and we came to know each other better.

Ayoo'nalh nezi knows the ways of the white man better than a majority of the elders in his tribe. Twenty-five years ago he was one of the best silversmiths among the Navajo, and was a member of a little band of Indians taken to the World's Fair in San Francisco to exhibit the craftsmanship of the red man. More recently he has been making a series of water-color replicas of the sand-paintings in the beautiful mountain chant under the direction of Arthur Woodward, for the Los Angeles museum. He is a highly intelligent Indian, loved and respected by his own tribesmen and his Anglo-American acquaintances.

A few weeks ago I sat on a sheepskin in Ayoo'nalh nezi's summer hogan in the pineclad mountains northwest of Ft. Defiance, Arizona. We had arrived in the early morning after witnessing the Red Ant chant at Hosteen Frank's hogan near Crystal, New Mexico. A bright fire in the center of the floor in the hogan brought comfort from the chill morning air.

Bah, the wife of Ayoo'nalh nezi was sitting on the floor on the opposite side of the hogan kneading dough for the morning meal.

Here was an opportunity to ask the old medicine man some questions that had long been in my mind. I wanted to know about his youth, and how he became a medicine man, and how he felt about his own and the white man's religion.

"Why do you ask?" he questioned. "What in the life of an old Navajo would you care to know? My life has been very simple compared with that of your people. I know about your achievements. I learned about your flying automobiles, your iron boats that float, your wagons that run with lightning — I saw these things when I was in San Francisco.

"Your people in some magic way have learned to harness nature. The talking box on your desk at Ft. Defiance that

brings strange words and chants through the air is magic. Many old-men's-lives-ago our Holy People were able to talk through the air, but we earth people never have learned the secret. I want nothing to do with these iron talkers. Some of our medicine men say they steal the good things out of the air and make the Navajo gods angry, and that is the reason we have been having so much trouble lately."

"When you speak of the gods, whom do you mean, Grandfather?" I asked.

"We Navajo believe in a supreme power, not a supreme being. We call it *Etnit*. Our gods—Talking god, House god, Fire god, Changing woman and White Shell woman are all children of *Etnit*. We do not fear the things of nature—lightning, the bears, the rattlesnakes, the whirlwinds. It is the power of *Etnit* back of them that is capable of bringing harm. One feels it, knows it is

present, but cannot see it. This universal power can be beneficial to man—or dangerous to him. Medicine men are the mediums through which this power can be utilized by the Navajo for good, and for protection against evil. Through prayers and offerings of turquoise, white shell, mother-of-pearl and jet, the power of *Etnit* can be enlisted to bring beauty to physical things, and to the mind.

"When a Navajo sends for a medicine man he must have faith. He must believe that we medicine men are the mediums through whom *Etnit* restores health and drives out evil. For over 50 years I have been healing Navajo who were sick in mind and body, and I know the power of religion."

"How did you become a medicine man, Grandfather?" I asked.

"I was born in the fall of the year 69 years ago. My mother's father was Chalisani, the Earth and Awl chant singer. He was one of the greatest of all Navajo medicine men. When I was old enough to talk, I started memorizing the sacred prayers and stories. Chalisani told my mother I was born to be a medicine man for I was a thoughtful boy and remembered what he told me.

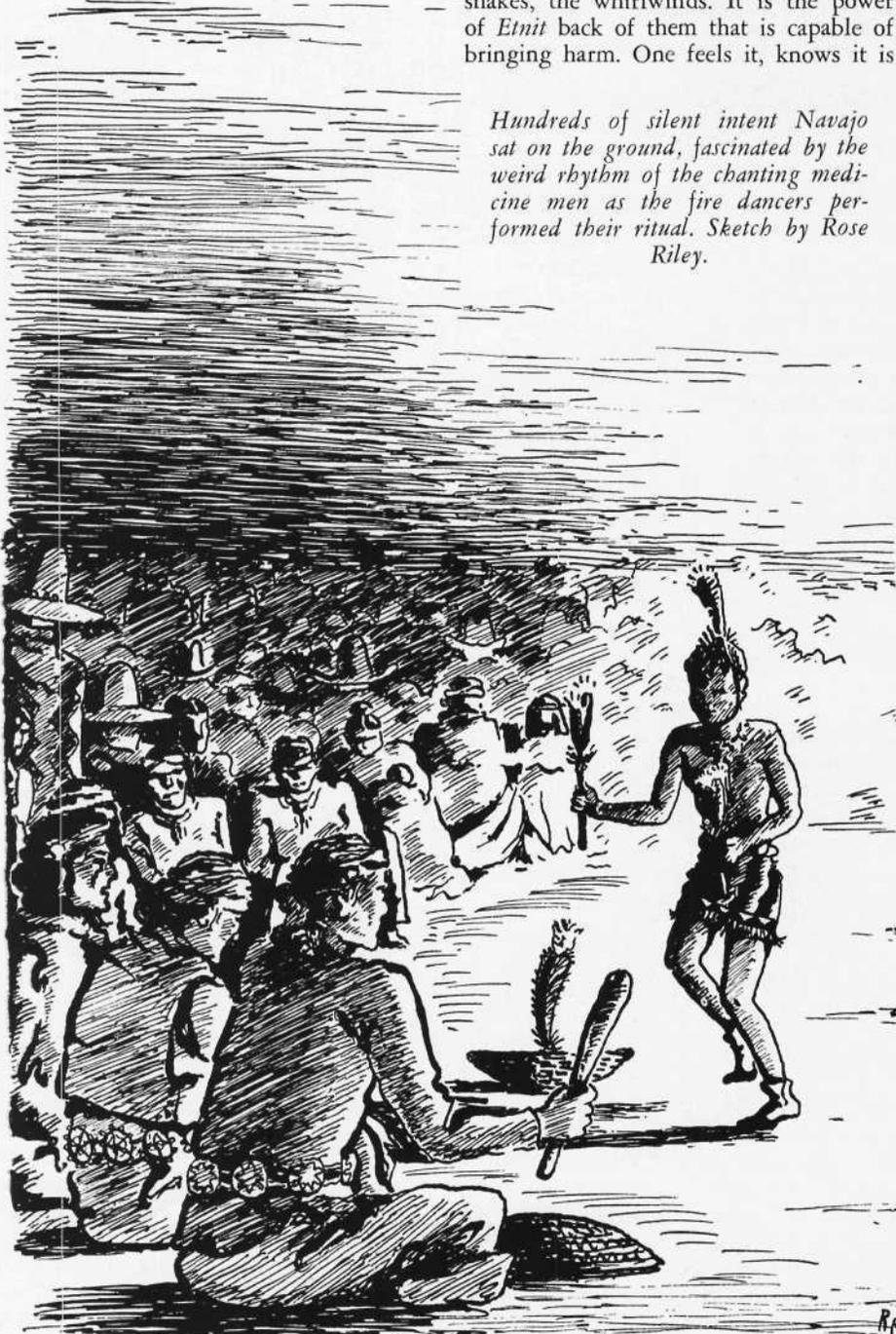
"When I had seen 12 harvests pass, Chalisani started to train me to conduct the Life chant. I was sent out to collect the sacred feathers of the mountain blue bird and the yellow warbler. I learned to gather the herbs and plants necessary for healing, and to make prayer sticks. Then I began to memorize the songs and assist in the ceremonies.

"One afternoon, at the season when the Navajo country was turning from green to gold and the dry leaves were flying in the wind, my grandfather and I were following the old trail between Canyon de Chelly and Lying-Down-Star butte. In those days the butte was sacred and we rode there to gather medicine and pray. Later Chee Dodge built his ranch home there and after that the place was no longer sacred. That is the way of the Navajo. Common use destroys the sacredness of a place.

"The trail led through a dense pine forest. We came upon a bear sitting in a pine tree. Upon seeing him Chalisani led me under a nearby tree and we sat down on a log. For some time we sat there silent. I know now that my grandfather was praying. After a while he spoke, telling me the story of the Girl-Who-Changed-into-a-Bear. Then he told me the sacred and secret name of the bear.

"I was young and had all of the Navajo's traditional fear of the bear. When grandfather had told me the story he approached the tree in which the bear was sitting and untied his sacred buckskin bag and scattered corn pollen on the

Hundreds of silent intent Navajo sat on the ground, fascinated by the weird rhythm of the chanting medicine men as the fire dancers performed their ritual. Sketch by Rose Riley.



ground as he prayed to himself. Corn pollen is used to invoke the blessing of the gods.

"He climbed the tree and went out on the limb toward the bear. The animal looked in Chalisani's eyes and growled. Chalisani looked the bear in the eye and called him by his secret name. Then he took a rope from his belt and without fear put it around the bear's neck and led him down the tree. The bear followed like a tame animal.

"When they reached the ground Chalisani again opened his pollen bag. He touched the bear's tongue with the tip of his tongue. Then he touched the top of his head, and tossed the remaining pollen toward the heavens as he said:

I am Changing Woman's elder son.

To escape the evil of the Bear People

I am the dew sprinkler.

Bear, today your heart shall not live.

Bear, today your thoughts shall not live.

The gates open.

Bear, go on your way.

"The bear understood him and when Chalisani took the rope from his neck ambled off into a thicket of mountain oaks.

"That was when I learned the power that comes from knowing the power prayers, and having faith that they will work. Also, it was important to know the secret name of the Bear People. That gave him power over them. That is why the Navajo never tell each other their secret names. To do so might enable a witch or evil person to gain power over them.

"When I grew older I used the magic my grandfather had taught me in dealing with bears. Therefore, I do not fear the Bear People as do many Navajo. But even with the power and knowledge the Navajo religion has given me there is one problem I cannot solve."

"What is that, grandfather? Perhaps I may help you," I suggested.

"No, Hosteen Tsoh, my problem is too big for any white man or Navajo to remedy," answered Ayoo'nalh nezi.

"My people will pass from the earth as the snow melts on the ground. The Navajo believes that human life has three parts. First is the physical body, second the spirit or breath of life, and third the invisible ghost that hovers in and around the body.

"When a Navajo dies a natural death from old age the body slowly disintegrates and disappears. Nothing remains behind. But when death comes by violence or sickness in the prime of life the ghostly power remains on earth, hovering near the corpse. That is what the Navajo fears. He calls it *Tchindiis*.



Summer hogan of Ayoo'nalh nezi in the mountains near Ft. Defiance, Arizona.

"The old people have taught us that the life of the Navajo world will be 12-old-men's-lives, or near 1000 years. We are now in the ninth-old-man's-life."

"But grandfather," I asked. "Is there no way your world may be prolonged?"

"Yes, there is one way our people can be saved. That is by the preservation of old Navajo customs and religion. But look about you, and you will see what makes me sad. The Navajo way of life is being changed by the white man. Our children go to your schools and hospitals. Soon they forget their Indian religion, or laugh at it. When a Navajo forgets his religion he ceases to be a Navajo. Some Navajo even marry whites. We old people know this is wrong. We have been taught that the Navajo are the best people on earth. We should never mix our blood with that of the white race."

Notwithstanding his gloomy forebodings, Ayoo'nalh nezi is a true and loyal friend of his white neighbors and of the big chiefs at Washington. In these troubled days when the Navajo faces the necessity of reducing his stock to save an over-grazed range, Navajo leaders like Ayoo'nalh nezi are rendering a fine service in the interest of peace and harmony. In this venerable and respected old medicine man the young hot-bloods see an example of patience and attempted understanding.

Ayoo'nalh nezi has been told that the white father at Washington wants to extend to the Indians the right to worship as they please. He wants to believe this is true because it will be evidence that the

white man, after all, wants to perpetuate the Navajo nation.

There is a glimmer of hope here. Perhaps, after all, Ayoo'nalh nezi's children and grandchildren in cooperation with enlightened leaders among the white people will find themselves at the end of their twelve-old-men's-lives entering a new era in which the best traditions of both races will be combined to bring about a brighter future.

Sez Hard Rock Shorty of ... Death Valley

By LON GARRISON

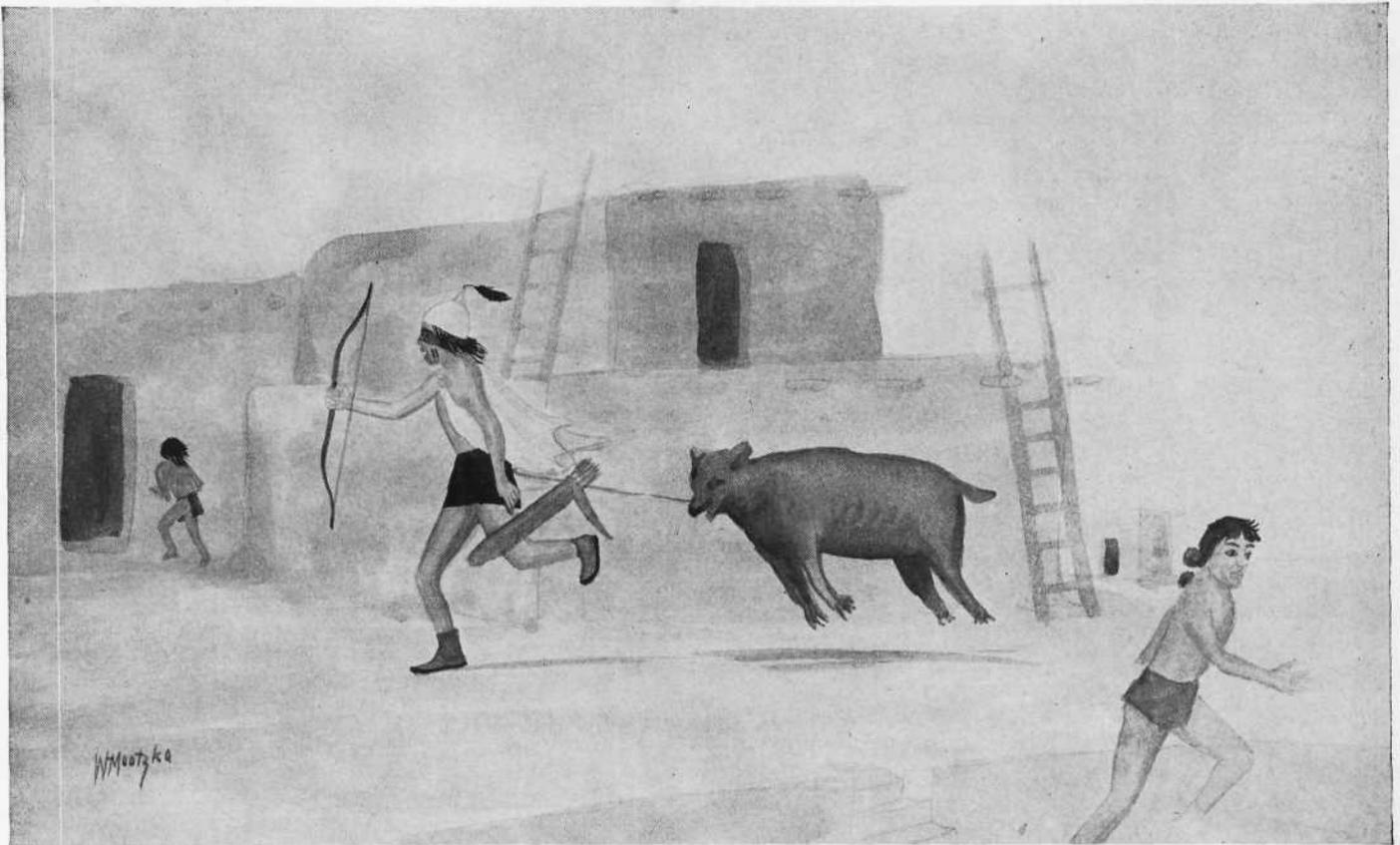


"**W**CE skatin'? Say Mister, I'm the ice skatin' champion o' Death Valley! I got medals an' scars to prove it too."

Hard Rock Shorty leaned back against the porch rail, calculated the shade, and proceeded about his athletic prowess.

"Yes sir! Right back here in the Panamints we used to go skatin' ever' winter. Had hockey games too on some o' the pools — built dams an' made 'em big enough. 'Long in January an' February it was pretty good, an' one winter when it was real cold, them ho springs over by Furnace creek froze over an' we skated on them too. It was over there I had a accident that stopped me from skatin' for good.

"The Death Valley Demons was playin' hockey against the Darwin Monkeys, an' with the score tied at 24 apiece, an' five seconds to go, I really cuts loose. I skates circles around ever' body, an' just as the final whistle blowed, I plunks in the winnin' basket. But I got a little off balance doin' it, sizzlin' a-long like a blue streak, an' one o' them Monkeys tripped me. I hit the ice so hard that I busted through it. An' do you know down below the ice the water in them springs was still so hot I blamed near scalded to death before they got me out o' there. Yes, that's how I got all them scars on my legs. Burnt me so bad I had to quit skatin'."



The Pookong and the Bear

(A Hopi Legend)

The traditional little imps of Hopi folklore are the Pookonghoya. They were the Peck's bad boys of the Hopi mesas in the period of long ago. These little mischief-makers appear frequently in Hopi fireside legends, and the Indian children follow their adventures with the same interest that white children devote to their comic page heroes in the Sunday newspaper supplement. This tale of a Pookong prank is another of the legends told to Harry James by old Chief Tewaquaptewa.

As told to HARRY C. JAMES

Illustration by W. Mootzka, Hopi Artist

YEARS ago the people living on Second Mesa were troubled with a great bear that at one time killed seven of the people.

The Chief of Mishongnovi decided to ask the aid of Pookonghoya in killing the bear. To please the little war-god he made a bow of very hard wood and two arrows, one feathered with parrot feathers and the other with the feathers of a blue-bird. He also fashioned out of buckskin a ball which he stuffed with cotton. As a gift to the Spider Woman who, as you know, was the grandmother of Pookonghoya, he made a special bahos.

The two were highly pleased with their gifts and Pookonghoya, taking with him a stick to hit the ball, went at once to find the bear.

As he was coming around a huge rock he saw the creature in the distance. It stood up on its hind legs, holding out its paws. Pookonghoya sat down and waited for the animal to come closer, and when it was very close he shot an arrow into its throat. The bear fell and the little war-god dashed up and hit it with his ball-stick so that it died at once.

When he saw the bear was dead he suddenly had an idea. He would play a joke on the people and on his grandmother, Spider Woman. He carefully skinned the bear so that the

hide was like a great bag. He filled the skin with dry grass and carefully sewed up the opening so that it looked just like a live bear. Then he tied a rope to the bear's neck, wrapping the end around his waist.

When he got close to the village he dropped the bear hide and started to run, the stuffed creature bounding along behind him at the rope's end. When it hit a rock it would bound into the air as if it were chasing him with great leaps. Pookonghoya ran faster and faster, screaming: "A bear is chasing me!"

The people were frightened and ran to the tops of their houses, saying: "A great bear is chasing Pookonghoya!" And some one ran to the Spider Woman and told her: "A bear is chasing your grandchild!"

The grandmother ran into her kiva, the Pookonghoya after her. As he caught up with her he threw the bear on top of her. She was so frightened she fainted dead away.

When she woke up Pookonghoya laughed at her and showed her the bear. As she was wise and Pookonghoya's grandmother, she said: "You are naughty! You have scared me." Then she spanked him very hard.

The Chief and the people of Second Mesa were very happy. They could go to their fields again without being frightened by the bear.



Chalcedony specimens from the Saddle mountains area

Carnelian in Saddle Mountains

This month John Hilton takes the gem and mineral collectors into a little known field in Arizona where he found chalcedony in many shades, ranging from deep carnelian to white. In the spring of the year this is also a gorgeous spot for botanists and those who love to camp in the wildflower areas. The accompanying map is accurate, but if you forget to take the map along and get lost—as John did—you will find some big-hearted Arizonans at the store at Wintersburg to direct you to the proper locality.

By JOHN W. HILTON

"TURN left at an abandoned mill and follow the rocky road to the foot of the mountains."

One of my rock-collecting friends had scribbled these directions on the back of a business card to aid me in finding a little known field in the Saddle mountains north of Hassayampa, Arizona, where pretty specimens of carnelian and other forms of chalcedony were to be found.

My companion was William McNutt, and we were making this exploratory trip out into the Hassayampa desert in the hope of finding a gem area of special interest to Desert Magazine readers.

But something was wrong. According

to our speedometer we had covered the necessary mileage—but there was no mill in sight. We continued along the road, then unexpectedly, we found an abandoned windmill. Perhaps that was the "mill" our friend had mentioned.

So we took the dim trail that led off through the sage toward some low hills in the distance. Soon we came to a fork, but we stayed on the route that appeared to lead toward the hills. Then there was another fork, and another, and we realized we merely were following wood-cutter trails. The hills were close at hand now and it was plain they were not the right formation for the kind of gem material we were seeking.

We back-tracked to the main road and continued along the route that leads toward Salome — the little town made famous by Dick Wick Hall and his frog that never learned to swim.

A water tank and windmill and a flag-pole appeared on the horizon, and when we reached the little settlement we learned we were in Wintersburg. There was a general store, a garage and a schoolhouse — also some friendly Arizonans.

We soon learned that the folks at the store were readers of the Desert Magazine—and when we told them we were gathering material for an article to appear in the magazine they were especial-



ly courteous, and offered to give any aid they could.

I started to ask about an abandoned mill which was to be our guidepost in locating the gem field, but was interrupted by a shout from Mac. "Isn't this what we are looking for?" he exclaimed. He was standing beside a small cactus garden, and sure enough, it was strewn with fine pieces of carnelian, sard and pink and white chalcedony in the form we call "desert roses."

N. L. Kentch, the storekeeper knew the exact location from which these specimens came. While we were eating our lunch we noticed a fine collection of Indian relics in the store, and were told there were Indian caves, burial grounds, petroglyphs and even small rock forts in this region — also a number of well defined Indian trails. Kentch's grand-

This general view of Saddle mountains will make it easy for those visiting the area to locate the gem field.

daughter had won a prize in a recent hobby show for a collection of arrowheads she had gathered in this desert area.

The old mill we were seeking was nine miles further along the road, we were told. Later when we arrived there we discovered there was a 10-mile error in the directions that had been given to us previously. This is an allowable error, however, when one is following verbal directions. Once in Death Valley I spent three fruitless days trying to locate an old mining claim. My guide was a man who asserted he had been over that part of the desert many times. Eventually we

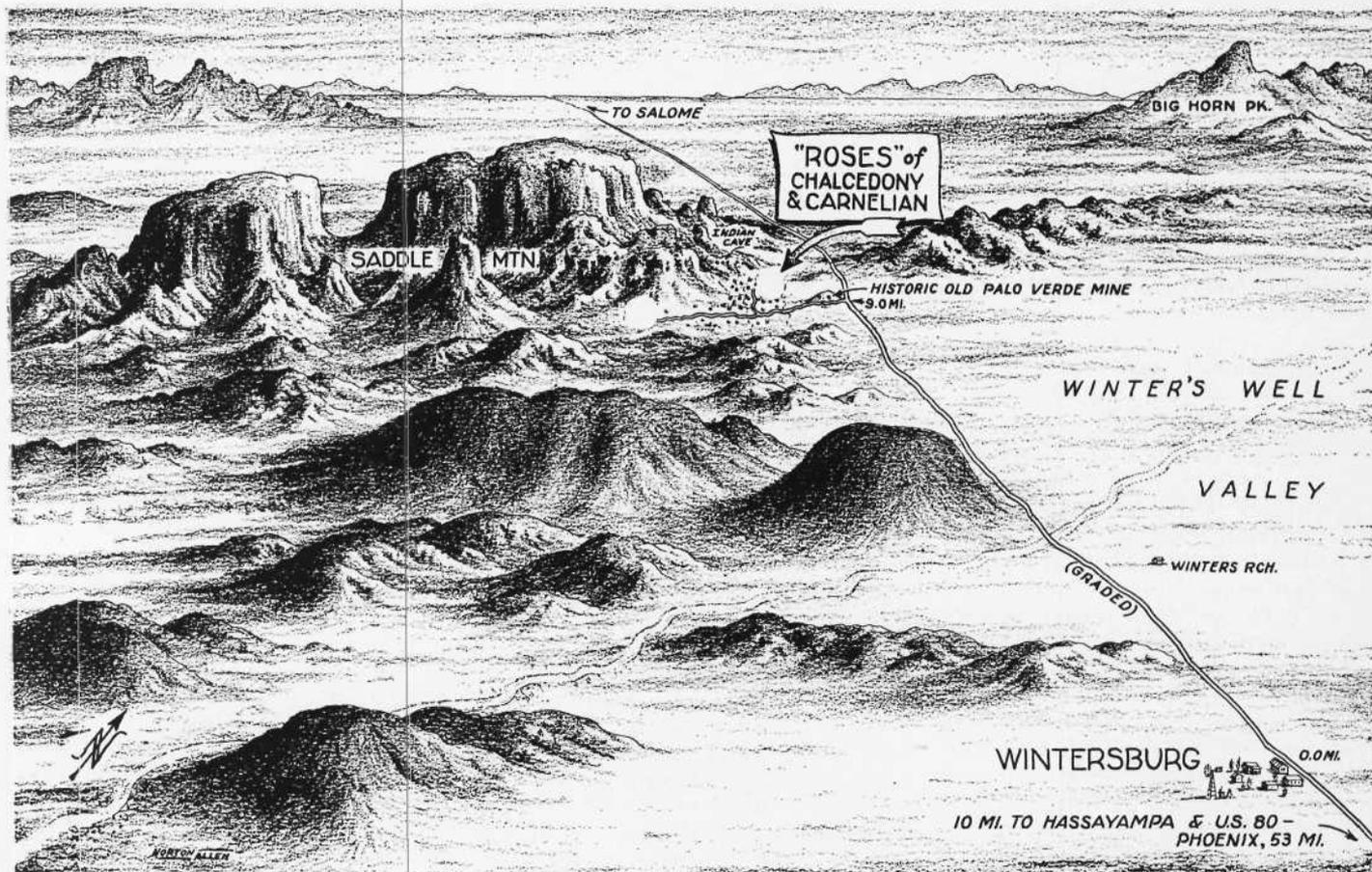
found the mine—at the end of a trail which ran in the opposite direction from which my guide thought it should be.

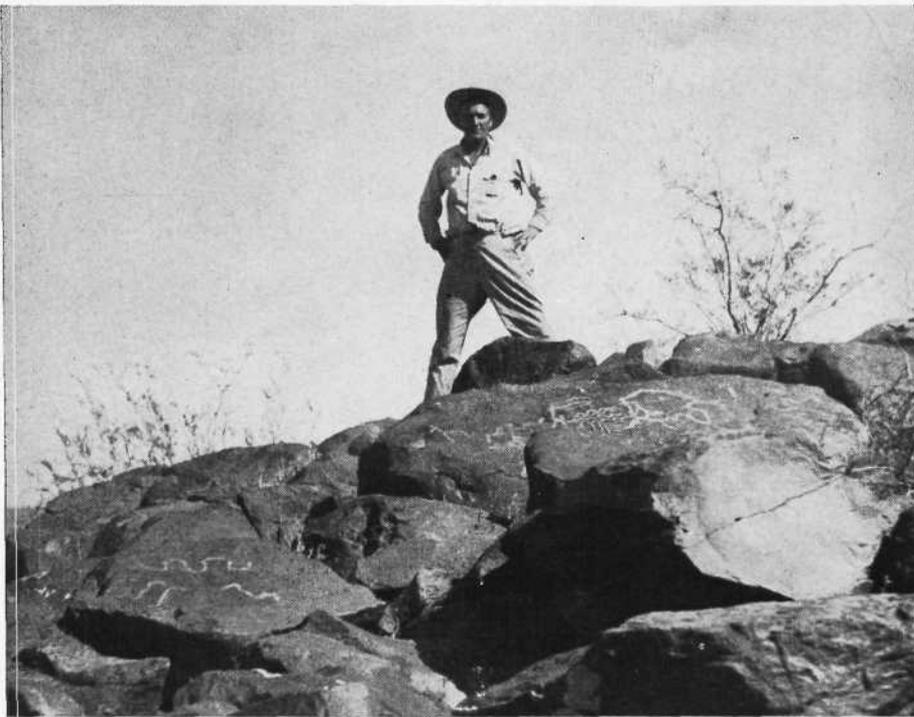
Those who have tried to follow verbal directions on the desert will appreciate the time and effort required in preparation of the maps Norton Allen draws so graphically for the Desert Magazine.

One of the men at the store volunteered to accompany us to the gem field. As we continued along the road our guide pointed out evidence of former Indian camps in a number of places.

Near the summit of a low pass we came to the millsite we had been seeking. There was little left except the concrete foundations of an old stamp mill and some broken glass scattered in the brush.

This was once called Midway City and was a flourishing mining camp with





William McNutt, who accompanied John Hilton to this gem field, finds Indian petroglyphs in the vicinity.

dance halls, saloons and a "boothill" cemetery. Cliffs that formerly echoed the rumble of machinery and the din of boisterous night lift now stand in a silence that is broken only by the chirp of a ground squirrel or the call of a distant coyote.

Slowly but surely the desert reclaims its own, and today the most conspicuous thing about Midway City is the scarcity of evidence that a boom mining camp ever existed here. Even the mine dumps were covered with wildflowers when I visited the spot. Here and there the hardy greasewood has taken root in the rock piles, and in time they will be completely obscured by the flora of the desert. Residents of the area know little about this old mining camp and I was able to get little definite information as to its history.

Collectors will find some colorful specimens in the old dumps. Sulphides, carbonates and silicates of copper are obtained, and we picked up some very fine samples of chrysocolla. They were too soft to cut and polish but had good color and would be welcome additions to the shelves of most collectors.

The old shafts are unfenced and should be carefully avoided. Amateur collectors often prove the truth of the old proverb "fools rush in where angels fear to tread." Most of these old mines are unsafe for exploration and no veteran mining man would think of entering them until a light blast has been discharged to shake down rock loosened by weathering during the years of abandonment.

The ground was so thickly covered

with wild poppies it was some time before I noticed that even in this old townsite the desert was strewn with agate. As we neared the hills both the poppies and the chalcedony roses became more plentiful. The alluvial fan that extends south and east from the mountains was a gleaming mass of yellow, occasionally punctuated with purple lupine and the softer colors of myriad other desert flowers.

Actually, the wildflowers, although beautiful in the extreme, were a drawback to gem collecting. The sun reflecting on the predominant yellow of the poppies was so intense as to make it

difficult to see the stones on the ground under them. The spring is a period of unusual beauty in this area, but the winter-time when small vegetation is sparse would be preferable for the collecting of gems.

At the base of one of the cliffs we found small caves which evidently had been used at some prehistoric time as shelters for Indians. In one of them were crude mortars in the rock floor, with the pestles still in place. Although a number of people know the location of this field, none have yet been greedy or thoughtless enough to remove the pestles. It is to be hoped that those who are directed to this spot by the Desert Magazine will be equally considerate. The pestles are very crude and would have little value away from the mortars where they belong.

Walking about the base of the mountain we found the entire area to be liberally sprinkled with good specimens, and I have no doubt that deeper in the hills chalcedony roses may be found in place. In some spots small geodes with hollow crystal centers are weathering out of the rock. One of these places produced the peculiar clam-shaped geode which causes so much speculation among geologists.

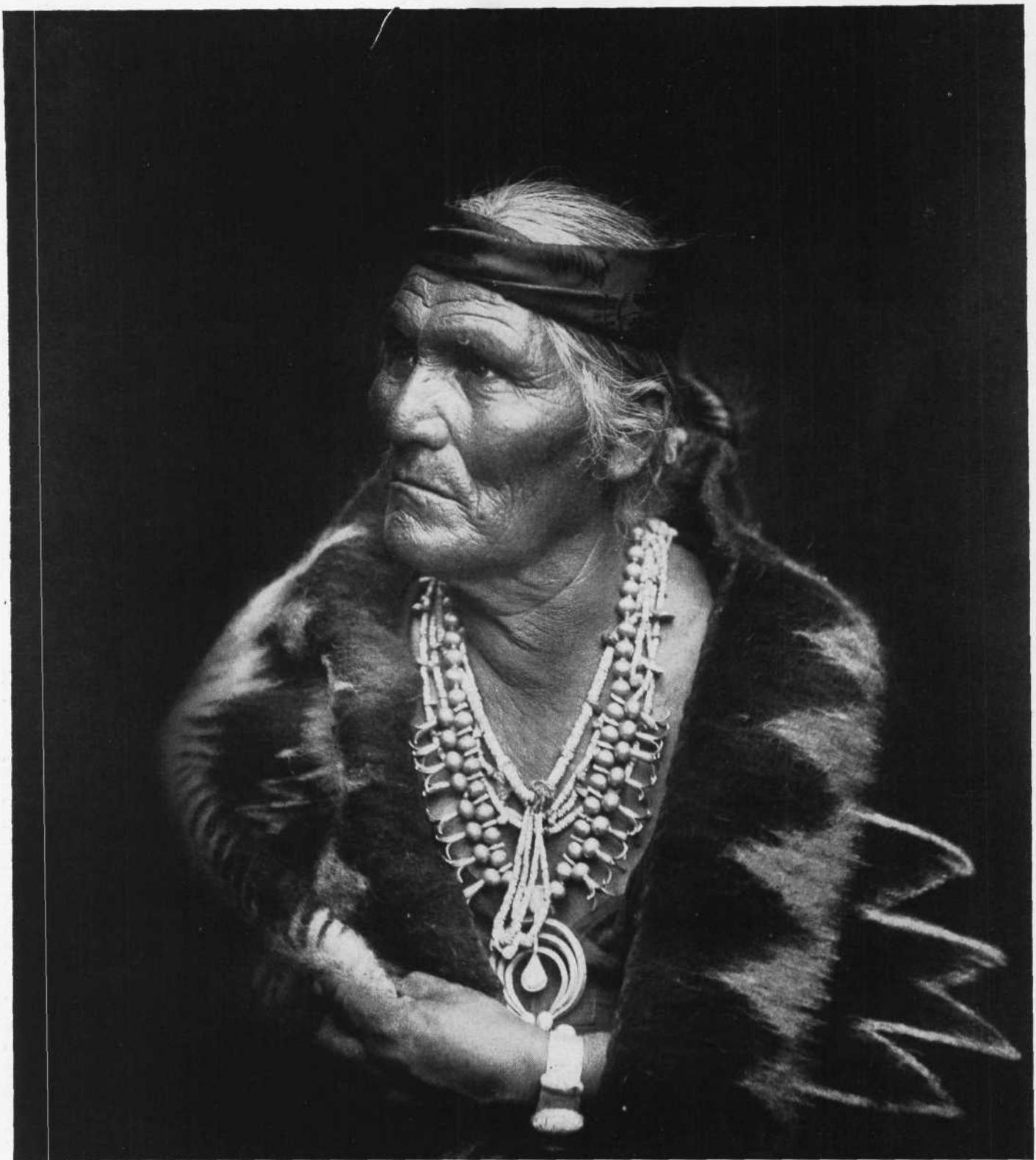
I have a theory regarding the formation of these geodes which is offered for what it is worth. Unlike an actual clam shell, these geodes have their thinnest edge at their widest point.

We know that the ordinary geode found in andesite flows is simply formed by the deposit and crystallization of minerals in the cavity formed by an air bubble in the lava in its molten state. I discovered one cold morning that if I suddenly inverted a slim bottle of honey, the bubble that rose to the other end was

Continued on page 23

Immediately below the arrow are the ancient Indian caves in Saddle mountains.





SECURITY

'Feel' of the Desert

By JOHN STEWART MacCLARY

Photograph by WM. M. PENNINGTON

INSTEAD of keeping his wealth in a safety deposit vault in the bank, the Navajo invests it in silver and turquoise jewelry to be worn on his person. When the white man needs a loan he pledges his securities—when the Navajo wants cash he pawns his jewelry. If it remains unredeemed after the stipulated period it may be sold by the licensed trader who made the loan.

Just as savings in the bank provide security against an emergency for the Anglo-American, the silver and gems owned by the Indian provide ready cash in time of need.



"Cathedral Town" on the Mojave

By CHAS. L. HEALD

FREIGHTERS and prospectors who crossed the arid Mojave desert a half century ago called the place Cathedral Town—but today it appears on the maps only as the "Pinnacles."

It is a well known landmark on that great waterless plain known as the Searles lake region. I had heard about the Pinnacles, and since they could be reached in a day's trip from Los Angeles I decided to see them for myself, and perhaps get some photographs.

We took the route through colorful Red Rock canyon to a point on the Mojave-Lone Pine highway. Three miles beyond Freeman junction we took the right turn toward Inyokern. Continuing in an easterly direction we passed the glistening white playa of China dry lake. It is said the lake bed sediment here is rich in quicksilver. Much money has been spent on processes and machinery for recovering this liquid metal but none of the attempts has met with success.

Beyond China lake a gently sloping alluvial plain ends abruptly against the jagged foothills of Argus range. Precipitous canyons and boulder strewn arroyos tell of the mighty force of the flood current that comes down these treeless slopes during infrequent cloudbursts.

Much of the world's supply of potash, borax and various sodium salts comes from this area.

As we glided down Salt Wells canyon toward the great white expanse of Searles dry lake we saw evidence of the

inland sea which once occupied this sink. Layers of white sediment deposited on the boulders are visible on both sides of the canyon.

The Searles basin includes an area of 60 square miles, and in the center of it is a playa of 12 square miles encrusted with a 70-foot layer of crystalline salts and brine. Here at Trona the American Potash & Chemical corporation produces potash salts, borax, boric acid, sodium sulfate and sodium carbonate.

Our first view of the Pinnacles was obtained as we approached the floor of the lake bed. From a distance of six or seven miles it was easy to understand why the name "Cathedral Town" had been given the little cluster of towers and spires rising from the comparatively level floor of the desert.

Viewed at close range, the pinnacles appear to be composed of a petrified sponge-like material. Actually, it is a form of limestone known as calcareous tufa.

Towering crags of limestone resembling overgrown stalagmites and ranging up to 100 feet in height, have brought many conjectures as to their formation. Some have thought they were built by living beings. Geologists studying the region later proved they were right, but the organisms which had built these monuments were much smaller than had been suspected. Cathedral Town is not a city built by man, either present or past. It is the handiwork of millions upon millions of microscopic bits of primitive

When the cool days come in October and Southern Californians feel the urge to load the bedroll in the jalopy and head for the great open spaces of the desert, here is an interesting trip into Mojave country. For those who know something about geology this trip will be doubly interesting—and for those who do not know but would like to learn, here is easy lesson No. 1.

plant life known as algae. They thrived in the placid waters of the lake which once existed here. The story as reconstructed by the men of science is as follows:

Thousands of years ago during the period known to geologists as the Pleistocene epoch, the northern part of the continent was covered by a great ice sheet. The Sierra Nevadas were also covered with great masses of snow and ice. The climate was much more humid than at present and as the ice age drew to a close, the waters from the melting Sierra glaciers flowed southward through Owens valley. Near the lower end of the valley their path was blocked by a great flow of black lava which had poured from the earth at an earlier period of volcanic activity. The water backed up behind this natural dam creating a large lake, a remnant of which is now known as Owens lake.

Water from the melting glaciers continued to flow down the valley until finally it poured over the top of the lava dam into the valley below. Continuing through Indian Wells valley the water was again impounded in a depression near the southwest end of the Argus range, the dry playa of which is now known as China lake. From here it flowed around the southern end of the Argus range to another large basin west of the Slate mountains. This body of water grew in size until finally it merged with the waters in the China lake area forming a single great lake which has been known as Searles lake. The present

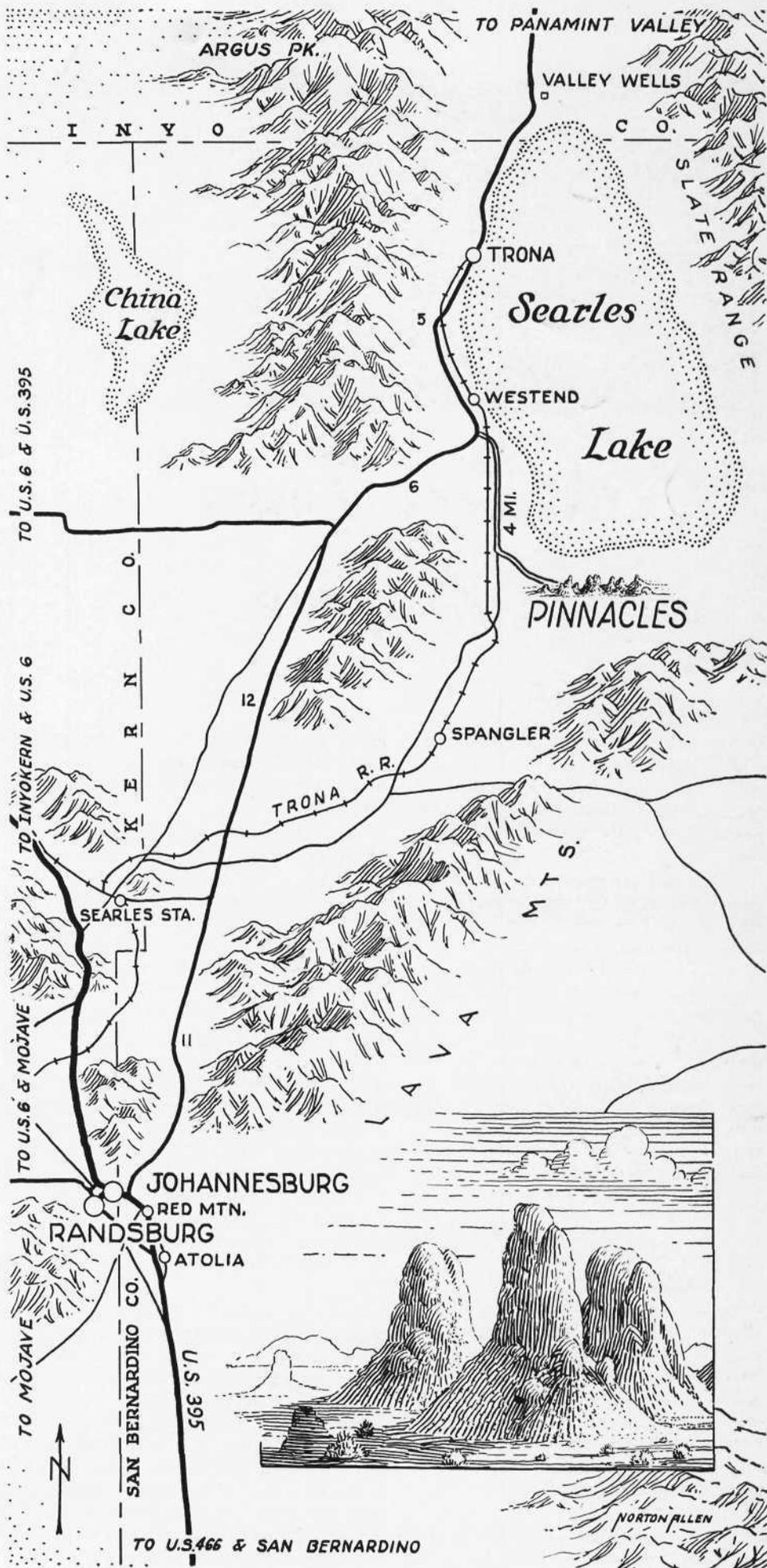
Searles dry lake, however, occupies only the floor of the basin west of the Slate range.

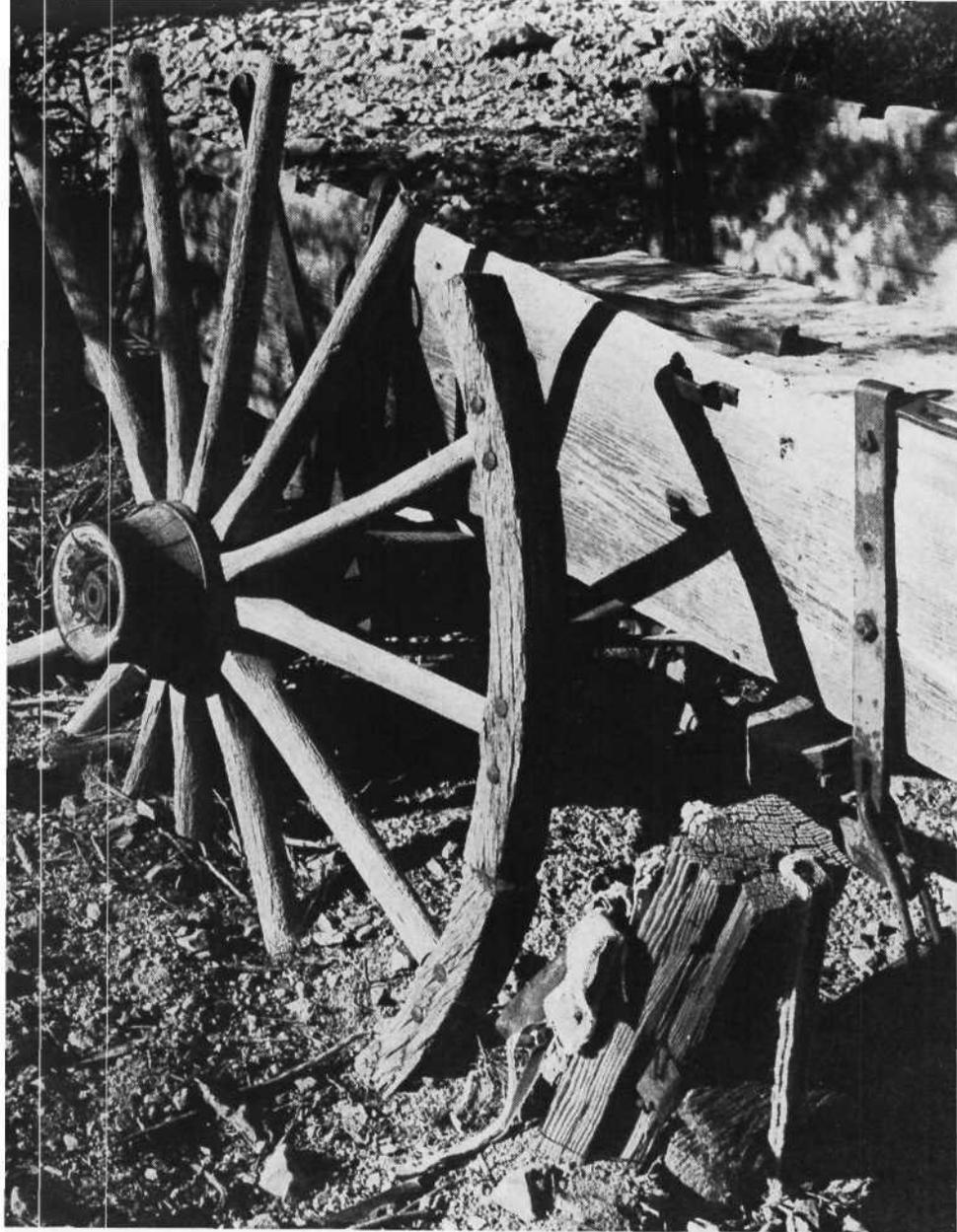
Searles lake once had a depth of over 600 feet. Overflowing at the southern end, the water swept around the tip of the Slate range forming another lake in Panamint valley. There is some doubt among geologists as to whether this lake ever overflowed into Death valley, although it is very possible that such was the case. If so, Death valley lake formed the fourth of this series of early Quaternary lakes. (Owens lake, Searles lake, Panamint lake, and Death valley lake). The main sources of water for Death valley lake, however, were the Mojave and Amargosa rivers. The Mojave river ran into Soda lake south of Baker, which on overflowing filled Silver lake and then continued north to the Amargosa river in turn emptying into Death valley. So much for the general early history of the chain of lakes.

Now let us witness the actual construction of Cathedral Town. Searles lake water was rich in calcium carbonate which had been leached from rocks by the inflowing water. The amount of calcium carbonate remaining in solution is dependent upon the amount of carbon dioxide present in the water. Anything decreasing the carbon dioxide content of the water will cause immediate precipitation of the calcium carbonate. Algae, under the influence of sunlight, are able to use carbon dioxide as a source of carbon for tissue building. The removal of carbon dioxide causes the precipitation of calcium carbonate about the algae. The presence of great colonies of algae precipitating limestone over a long period of time slowly gave rise to great accumulations of calcareous tufa. These deposits continued to grow toward the sunlight from the bottom of the lake as long as favorable conditions existed.

Change is an everlasting law of nature. The flow of water from the Sierra slowly diminished. Evaporation exceeded inflow. The chain of lakes became separated. Water no longer flowed from one to the other. Searles lake became a great expanse of glaring white alkali, covered the floor of the desert. Ages passed and the fluctuating climate poured water into the lake basin only to let it disappear again, each time adding to the depth of the white chemicals. Today, water covers the floor of the lake only after infrequent rains, and soon disappears by seepage and evaporation.

The accumulation of chemical sediment here is one of the country's richest sources of alkaline minerals. Overlooking this vast deposit of mineral matter stands Cathedral Town, a monument to the memory of a wide expanse of clear blue water which once occupied the basin.





Dust to Dust

By RUSS CLARK
1471 E. McKinley
Phoenix, Arizona

This picture was awarded first prize in the Desert Magazine photograph contest in August. Taken with a 9x12 cm. Voightland Avus with K2 filter at 9:00 a. m. Stop f22, 1/2 second. Defender XF Pan film.

Special Merit

In addition to the prize winners, the following entries were given special merit rating by the judges:

"Carrie" by Robert Gemmel, Ontario, California.

"After the Storm," by Wilton Carneal, Hollywood, California.

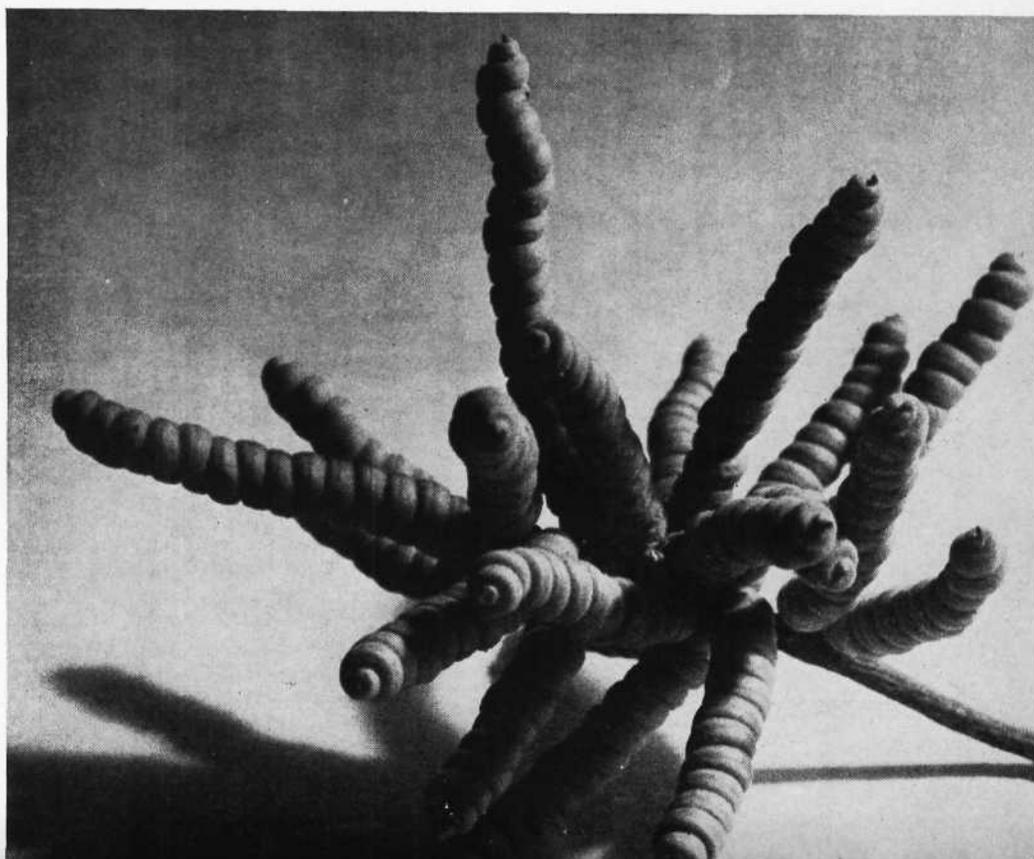
"Joshua Tree" by Helen Young, Delavan Lake, Wisconsin.

Screwbean

(Mesquite)

By ROBERT A. CARTTER
Trona, California

Awarded second prize in the August contest. Taken with Model B Exakta, distance two feet with extension tube. Exposure six seconds with shaded 60-watt bulb at f22.



What strange impulse caused the young artist-poet Everett Ruess to forsake the city where he had home and friends, and wander for months at a time along the lonely trails of the desert wilderness? This is an ever recurring question in the minds of those who have been following the vagabond journeys of this unusual young man. The answer is found in Everett's letters, written to family and friends. Following are some quotations from these letters. Two of them were written three years before Ruess mysteriously dropped from sight in southern Utah in 1934. The third was written a year later, and the last one four months before his disappearance. The original story of Everett's last trek was told by Hugh Lacy in the *Desert Magazine*, September, 1938.

'I Have Really Lived'

By EVERETT RUESS

I.

AS for my own life, it is working rather fortunately. These days away from the city have been the happiest of my life. It has all been a beautiful dream, sometimes tranquil, sometimes fantastic, and with enough pain and tragedy to make the delights possible by contrast. The whole dream has been filled with warm and cool but perfect colors, and with aesthetic contemplation, as I have jogged behind my little burro. A love for everyone and for everything has welled up, finding no outlet except in my art.

Music has been in my heart all the time, and poetry in my thoughts. Alone on the open desert, I have made up songs of wild, poignant rejoicing and transcendent melancholy. The world has seemed more beautiful to me than ever before. I have loved the red rocks, the twisted trees, the red sand blowing in the wind, the slow sunny clouds crossing the sky, the shafts of moonlight on my bed at night. I have seemed to be at one with the world. I have rejoiced to set out, to be going somewhere, and I have felt a still sublimity, looking into the coals of my campfires, and seeing far beyond them. I have been happy in my work, and I have exulted in my play. I have really lived.

In the meantime, my burro and I, and a little dog, if I can find one, are going on and on, until, sooner or later, we reach the end of the horizon. (*Written to his friend Bill Jacobs of Hollywood.*)

II.

Those were great days at the Veit Ranch—idyllic days. There I seemed to feel the true spirit of delight, the exaltation, the sense of being more than man, lying in the long cool grass, or on a flat-topped rock, looking up at the exquisitely curved, cleanly-smooth aspen limbs, watching the slow clouds go by. I

would close my eyes and feel a coolness on my cheeks as the sun was covered, and then later the warmth of the sun on my eyelids. And always there was the soft rustling of aspen leaves, and a queer sense of remoteness, of feeling more beauty than I could ever portray or tell of. Have you ever felt that way?

Here is a picture of my caravan: My little dog Curly, Cynthia, Percival, and I. We have traveled far over mountains and deserts, through forests and canyons, seeing strange and beautiful things, having grim and glorious experiences, but none that would make me forget your hospitality and generosity in my time of need.

Best wishes for a happy Noel.

(*A first draft of this letter, from Los Angeles to ranch friends at Christmas, 1931, was found among Everett's papers. The parents of Everett would be happy to hear from those who received this letter, who are as yet unknown to them.*)

III.

Three or four years ago I came to the conclusion that for me, at least, the lone trail was the best, and the years that followed strengthened my belief.

It is not that I am unable to enjoy companionship or unable to adapt myself to other people. But I dislike to bring into play the aggressiveness of spirit which is necessary with an assertive companion, and I have found it easier and more adventurous to face situations alone. There is a splendid freedom in solitude, and after all it is for solitude that I go to the mountains and deserts, not for companionship. In solitude I can bare my soul to the mountains unabashed. I can work or think, act or recline, at any whim, and nothing stands between me and the wild.

Then, on occasion, I am grateful for what unusual and fine personalities I may encounter by chance, but I have learned not to look too avidly for them.



This picture of Everett Ruess with his dog Curly and one of his burros taken during his desert wanderings.

I delve into myself, into abstractions and ideas, trying to arrange the other things harmoniously, but after that, taking them as they come. (*Letter to a friend.*)

IV.

Viljamur Steffanson, the Arctic explorer, says that adventures are a sign of unpreparedness and incompetence. I think he is largely right, nevertheless I like adventure and enjoy taking chances when skill and fortitude play a part. If we never had any adventures, we should never know what stuff is in us. (*Letter to Mrs. Emily Ormond, May 2, 1934, from Kayenta, Arizona.*)

V.

(*Some treasured verses copied in the back of Everett's original Diary of Southwest Wanderings.*)

* * *

"A man is what he loves."—Ekhart.

* * *

"Better to face the goal beyond our scaling,
Rather than with our lowered banners trailing
To take the paths of safety leading home."
* * *

"In vain shall any lesser lights be burning
For us who glimpsed the vision from afar.
We shall go down the road of unreturning,
Broken and spent, but faithful to a star."



Lena Blue Corn, one of the most skilled of Hopi pottery makers, is the woman on the left.

—Photo by Frasher.

Lena Blue Corn *-- Potter of Hopiland*

This month Mrs. White Mountain Smith takes Desert Magazine readers into the home of one of the skilled pottery makers on the Hopi reservation. You will not only know more about one of the most ancient of Indian crafts when you have read this story, but you will also have a better understanding of the customs and traditions of these peace-loving tribesmen of the desert mesas.

By MRS. WHITE MOUNTAIN SMITH

THE noonday sun beat down on the ancient rock house at the foot of the Hopi First Mesa, where Lena Blue Corn, maker of pottery, lives. The hollyhocks drooped in the sun and a fat little dog thumped the hard earth with a friendly tail when the white woman stepped over him.

On the window ledge were dozens of tiny pieces of unbaked pottery drying in

readiness for the design to be applied. They were typical of the graceful bowls and symmetrical vases Lena turns out. I stopped to examine them. From the doorway came an amused chuckle.

"For Lions Club ladies to take back east as souvenirs!"

She greeted me with a warm hand-clasp. I had not seen Lena for two years. Together we entered the huge low ceilinged room, cool and dim, where generations of her forebears had been born, lived and died, each leaving its tithing of prayer sticks tucked securely among the age-old beams that supported the dirt roof. Unlike the Navajo, the Hopi and Tewa Indians have no dread of living in a house visited by death. Their people merely have gone on to join happy spirits in another world where there is no famine, no fight with the elements and no lack of water for the cornfields.

When my eyes were adjusted to the



Hopi pottery designs shown on this page are from the C. W. Douglas collection, Evergreen, Colorado, and are reproduced here through the courtesy of Denver Art Museum. All of these are designs used in the interior of bowls and have been greatly reduced in these reproductions. They are all of the more or less conventional bird designs.



watched her dig the soft grey clay from seams in the rocks half way up the trail leading to Walpi. With a short digging stick she pried the clay out and piled it in her shawl. When the shawl was full, she carried it to her house and carefully pounded and sifted it until it was free from bits of stone and shale. Then she placed it in a washtub and covered it with water where it would soak for at least 24 hours, sinking in a sodden mass to the bottom and clinging there while the surplus water was poured off. I knew, then, how the clay was secured and what had been done with it before she laid a mass of putty-like mud on a board and began to knead it as one would a batch of yeast bread.

dim light I saw that Lena was busy, as usual, making pottery which would go into white homes all over the nation, carrying the signature of this famous little brown artist, a small ear of corn with the husks half turned back from the grains.

The noonday meal was on the table, if a cloth spread in the center of the hard packed earthen floor could be called a table. The menu was the inevitable stew served in one of Lena's pottery bowls. A married daughter and two small visiting boys were dipping their rolls of *piki*, seining out the drowned bits of mutton and vegetables. Water was in tin cups and bits of crushed green herbs floated on the surface.

Lena explained that this was a mint which grew beside the rocks in moist places near the spring and with a little sugar made a cooling drink. Another bunch of greens lying on the table attracted my eye. Lena broke off a sprig and gave it to me. It had a mild peppery taste not unlike water cress. This herb, too, grows close beside the ancient water hole by her house and takes the place of salad in her menu. Lying tranquilly among the plates and cups and herbs was a sleepy yellow kitten, evidently the family pet. Its presence there on the table was as unnoticed as though Puss wore the cloak of invisibility!

I looked at the thick stone walls plastered with uncounted coats of whitewash during the years the house has been occupied, and I thought of the families who had lived there; of the hopes and the fears that had formed and ebbed away there under that roof. I thought of the sharp lookout former residents had kept for their Apache and Navajo enemies, and of how they must have slipped out through the low doorway and sped up the trail to safety when danger threatened, hiding their few treasures in the niches secreted in the house walls, a carelessly placed stone covering the opening. Now Lena Blue Corn lives there in unbroken peace. On the wide window

ledges she dries her pottery among the geraniums.

Close to the low ceiling hangs a row of at least 15 big dishpans, some of blue enamel and others of bright tan. With all my interest in the subject, I've never been able to fathom the Hopi woman's insatiable desire for dishpans. They are removed during state occasions such as a native Hopi wedding and used to hold the hand-ground meal with which the bride purchases her husband from his mother. Then they are polished again and hung in a row under the ancient rafters.

I pulled a three-legged stool close to Lena and watched her prepare to work a big bowl destined to hold a couple of gallons of peaches or shelled corn. I had gone with her two years before, and

When it was smooth and firm she took a handful of it and rolled it briskly between her smooth palms until it strung out into a rope about the size of a lead pencil. Then, using the bottom of a big gourd to hold her foundation she coiled that string of clay around and around in circles, shaping it with her fingers and patting it into place until the bottom of the bowl was smooth and symmetrical. Again and again she rolled more clay, applying layer after layer in circles above the foundation, smoothing and firming each layer until about a fourth of the bowl was finished. Then, because the clay was soft and would not hold its shape under the weight of greater height, she pushed it aside to harden while she polished some bowls and vases already finished and dried.

First she took a rough piece of stone and sanded away every uneven spot on the surface, and followed that operation with a smooth bit of petrified wood which she passed over every inch of the vessel at least a hundred times. My own wrists fairly ached watching her swift tireless motions. At last she was satisfied with the smoothness. Then she prepared a thin whitewash of white clay and water and with a cloth swab coated each vessel with this "slip." When fired this white coating burns into the soft apricot tint so dear to the connoisseur of Hopi pottery. Some of the vessels are coated with



a red "slip" and this turns out to be a brick color when fired.

With all the vases coated and ready to receive their design, they were turned upside down while Lena and I took ollas of her making and walked a few yards to the ancient water hole, sole source of Hopi water supply for many centuries. This pool is reached by going down 30 deep worn stone steps, trod by generations of water carriers. In recent years the government has erected a stone house over the pool. I shivered as I stood in the semi-gloom trying to look into the depth of that greenish water hole, sacred home of Hopi water gods. Lena stooped to dip her olla and murmured a word of supplication or thanksgiving to the gods as she lifted the filled vessel. As we climbed back out into the sunlight, I saw hundreds of *babos* or prayer sticks tucked in the crevices of the stone steps and roof. Bits of piñon and juniper twigs were tied together with cedar bark and each *babo* had its eagledown feather that stirred and waved in the faint breeze we made in passing. I was glad to get back into the sunlight again, but Lena stopped to say a few displeased words to a Navajo family just arrived with a wagon and four waterbarrels! She didn't think much of Navajo water thieves, she said.

Back in the cool old room we found the dinner cleared away and the other occupants scattered. The boys were outside in the shaded patio teasing the sleepy dog and the daughter had gone to see about her friend's sick baby. From a deer-skin bag hanging against the wall, Lena brought some dried flowers of the rabbit bush and crushed them between her fingers until they were well powdered. And from another bag she poured out bits of roasted and powdered piñon gum. Mixing these together in a rock mortar she blended them with watermelon seed oil and her paint was prepared. The brush took little labor. She peeled the fibre from a dried yucca leaf and chewed it into a flexible wisp.

Lena picked up a bowl about a foot high and perhaps 14 inches around. She eyed it intently for a moment and then placed three minute dots on the rim of it. Having thus divided her drawing space, without hesitation she made three conventionalized parrot feather designs that covered the entire surface, yet gave no impression of being crowded. It was one of the finest exhibitions of free hand drawing, without any pattern to follow, I have ever seen.

"To what clan do you belong, Blue Corn?" I asked her when she reached for another vase.

"Kachina. Our women have the right to use the parrot and parrot feather sym-

bols in any manner we wish on our pottery."

"What do you mean 'right'? Are the Hopi designs copyrighted or something?"

"Oh, no. But each clan has its own particular symbol and has the exclusive right to use that symbol. For instance the Cloud Clan has the Kachina design for its own and the Smoke Clan owns the cloud symbols, and that's the way it is. You see?"

I nodded, although I couldn't see why a member of the Cloud Clan couldn't draw a cloud if she wanted or why the Snake Clan didn't claim the winged serpent.

Lena was painting an eight-inch circle in the bottom of a *piki* plaque, resting her little finger lightly on the rim to guide her yucca brush. Inside the circle she drew two parrots facing each other. I have attempted to reproduce this drawing, using hours of labor and wasting uncounted sheets of drawing paper to accomplish what she did within 20 minutes. And she made no mistake in her work. There is no way to erase rabbit bush and piñon gum paint from a Hopi bowl. The afternoon passed while she swiftly and with little effort decorated the ashtrays for the Lions' bridge prizes, and I wove all sorts of mental pictures of the homes the little bits of pottery would eventually reach and what they would mean to the white people so casually using them.

Medicine Man Cures Child

When sunset came Lena began preparations for the evening meal. Her husband had gone to Winslow a hundred miles south in search of seasoned cottonwood roots out of which to carve little Kachina dolls he fashioned with such loving care. I walked toward the trail intending to see the sunset from Walpi gap, but a Hopi girl I had known before implored me to come in her house and look at her baby. It was sick, she said.

Inside the door an old Hopi grandmother sat on the floor with her bare feet outstretched while she tenderly swayed a carrying board held in her arms. Strapped fast to the board was a beautiful Indian child perhaps six months old, its great dark eyes dull with suffering and the little hands tightly clutched. It was wrapped in half a dozen blankets. I persuaded the grandmother to lay the board flat on the floor and I loosened the coverings. Outside of the paleness and apparent pain I could find nothing wrong. There was no fever and the pulse was weak but regular.

"What's the matter with your baby, Mary Eleen?"

"She had a convulsion last night and

we took her to the government hospital. They said she had congestion of the lungs and rubbed grease on her breast. I brought her home and she was dying. My mother ran out and got Bone Doctor (an aged medicine man who seemingly performs miracles among the Hopi). He felt my baby all over and said that her neck was wrong. He gave it a quick twist and we could hear a little 'snap'. Then pretty soon she began to breath easier and you see she is going to live!" The old fellow, wrinkled and withered, came in just then and explained that a vertebra was out of place in the baby's neck, caused by a jolt or fall.

I gave the little mother the oranges I had in my car and told her to keep the child strapped to the board but not to let grandmother smother it with all those blankets. It was too late to see the sunset so I watched some boys corral their sheep and goats for the night and then scramble up the steep trail to their suppers. An old man rode by, perched on top of an immense load of wood which almost hid the tiny burro carrying it.

Early next morning I went to the house and Lena was placing the painted pottery upside down on a smooth foundation of rocks. In the center of the rock she laid a little fire of shredded cedar bark and bits of dry wood. She built a sturdy oval-shaped cover of thick slabs of sheep manure over the pottery and just before placing the top one she lighted the fire inside. These slabs were eight or 10 inches square and perhaps six inches thick and had been cut from the floor of an old sheep corral used for decades as the night enclosure for the flocks. As the fire burned and a hole appeared in the oven Lena applied another slab, all the time moving quietly and talking in a whisper to me. If we made a loud noise while the pottery baked the spirit of the bowls would be angry and break them before they were fired.

When evening came the kiln had been reduced to a heap of flaky ashes tumbled around the pots. After they were cooled Lena brought them out and wiped away all traces of the ashes. The designs stood out sharp and clear, etched against the creamy background, and no more beautiful or perfect craftsmanship could be found among the Tewa or Hopi potters. Since old Nampeyo has passed the age where she can shape and paint Hopi bowls I think *E Quat-che*, Lena Blue Corn, is the finest of all potters among the women in Hopiland. There is a big demand for her work, and it can always be distinguished by its perfect contour and design. If there is any doubt, turn it upside down and look for the tiny ear of corn with its turned-back husks.

They are odd-looking things—those "Indian war clubs" of sandstone that the rock-hounds dig out of the floor of the desert. They are commonly called sand-spikes, and they have no value except as specimens—but they give the scientific fraternity a headache. No one has yet found a satisfactory theory as to their origin. Here is the story of a collector who after 20 years of study admits that "only the Lord knows for sure how these things were created."

Mystery Rock of the Desert

By MacDONALD WHITE

OF all the freakish geological growths that occur in nature, none is more interesting to the collector or more baffling to the scientist than the sand-spike concretions found in limited areas of the Colorado and Mojave deserts. H. W. Pierce, rock collector of Laguna Beach, California, was one of the first discoverers of these curious formations that are shaped like an ancient mace—a ball from the base of which projects a tapering stem. Specimens dug from the age-old beds of fine "hour glass" sand range from a half inch to nearly a yard in length.

Rock collecting has become something more than a hobby for Pierce. By his own admission, it's his finest pastime. What's more, he gets a kick out of it. Mr. and Mrs. Pierce manage to keep busy tending their ocean-front apartments during the summer season. But when winter comes—plus the glorious sunny days of fall and spring—that's when they go traveling in their trailer to the deserts or anywhere their fancy leads them. They believe in cramming in a lot of here-and-there fun in their lives.

But everywhere they go, Pierce's experienced eyes are on the look-out for unusual rocks. His collection now includes specimens gathered from all over the world, too many thousands to count. But his special interest is sand-spikes.

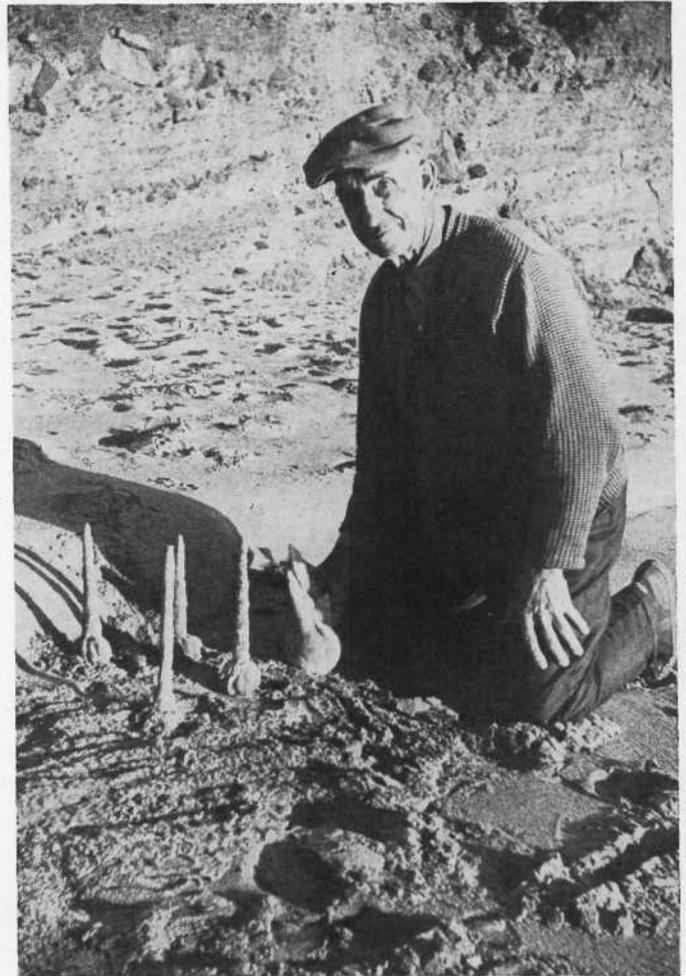
Glassed-in display cases line the walls of the Pierce living room. Visitors are welcome, if genuinely interested. Yet nothing is for sale. At home, during rainy spells, he studies his rocks with the same warm pleasure that other men read magazines and books. It's his form of relaxation.

"Each specimen recalls a different association with interesting people and places," he said. "And I could tell a thrilling story about each rock."

Pierce likes to speculate about sand-spikes.

What caused these oddities to grow in such curious, uniform shapes? Why are they found in this one locality, and no other place in the world? Did they grow from scratch, where they are found, in the sand? Or were they washed into position by waves or tides? Scientists would like to know the answers to these questions. But the origin of sand-spikes remains a mystery.

Theories have been advanced, and as quickly discarded.



H. W. Pierce finds sand-spikes by digging in the sand in certain places on the Mojave and Colorado river deserts of Southern California.

The baffling feature of sand-spikes is that they combine two common formations—the spherical grouping of calcite crystals in the ball, and the radiating cylindrical structure, the stem. Separately, the formations can be explained from studies of other concretions. But the combination is unique, hence mystifying.

Sand-spikes were first brought to the attention of scientists about 20 years ago. The first specimens found were lying exposed on a sandy terrain that had once been the old Quaternary (Lake Cahuilla) shore line. Later diggings on the grounds uncovered abundant clusters of sand-spikes at different levels.

According to Pierce, sand-spikes are always found lying horizontal in the sand and usually in clusters of similar shapes or sizes. Short specimens are found together, and long ones together. He has found about 30 different kinds in single formations or in compound groups, with as many as 20 grown together.

He has dug more than 500 sand-spikes from one location near the Mexican border, and generously donated many of them to universities and museums throughout the country. Ninety out of 100 of them, he says, are found pointing in a westerly direction when taken from their beds. Why? He doesn't know.

The heads of sand-spikes are built up of numerous spheroidal concretions all grown together and slightly flattened. Splitting a sand-spike reveals the horizontal bedding planes of stratification which penetrate the entire structure. Treated

in a dilute solution of hydrochloric acid, sand-spikes are shown to contain about 30 per cent sand (mostly quartz) and 70 per cent calcite. This estimate is determined by weighing the remaining residue of insoluble sand. Held momentarily under an ultra violet ray lamp, then removed, sand-spikes will phosphoresce for a few seconds.

Are sand-spikes stalactites? That was the theory originally advanced by Dr. H. W. Nichols, following a preliminary study of five specimens sent to him for examination more than 20 years ago. Were they made by hand, by artisans of some past civilization? Were they originally a desert plant that toppled over in the wind and eventually became solidified—always pointing in the same direction? To this query Pierce's reply is: "Do winds always blow in the same direction?"

Did sand-spikes grow from a molecule, or from material precipitated in harmonious proportions around a nucleus, such as a fossilized animal? Or maybe, like Topsy, they "just grew"—a few thousand or million years ago. (Or is there a plan for everything?)

These and many other theories have been proposed by scientists in an attempt to explain the origin of sand-spikes. Other types of concretions can be explained, yes, but not sand-spikes. According to Pierce, its combined spherical and drumstick structure defies all the known rules. And all the theories, apparently, can be refuted. Thus the mystery of sand-spikes remains secure.

Pierce tells a story of an ambitious young graduate of an eastern university who had heard about sand-spikes and decided to use them as a subject for his master's thesis. He would be the first to pry this truth from silent nature—he

believed! But after weeks of intensive research the enthusiastic young geologist finally abandoned his studies. He came to Pierce for advice.

"Does *anybody* know definitely the origin of sand-spikes?" he asked wistfully.

Pierce, who has been collecting odd geological freaks for half a century, framed his answer with seasoned honesty.

"Yes," he said. "But only the Lord knows for sure—and He won't tell!"

Two Years Old---and Growing Rapidly

With this issue, the Desert Magazine completes its second year of publication. Starting with 662 charter subscribers in November, 1937, the list has grown steadily until today 10,000 copies are being issued monthly—with an estimated 40,000 readers. For those who are keeping a file of the magazine for reference purposes a complete index of Volume 2 is printed in the back of this number. A similar index was carried in Volume 1 a year ago. If you will glance through this index you will appreciate more fully the wide scope of informative material carried in the Desert Magazine, and the importance of preserving your copies each month. A limited number of back issues are still available for those who wish to complete their files.



Here are a few of the "spikes" in Pierce's collection at Laguna Beach, California.

Carnelian in Saddle Mountains . . .

Continued from page 12

exactly the shape of the geodes I describe here. The thin knife edge which points down gives the bubble a distinct stream-lined appearance.

It is quite possible then that the lava had about the same viscosity as cold honey, explaining the distinctive and unusual shape of the geode later formed in the bubble cavity. I have noted that these geodes when found in place always have the thin edge down.

Certainly this is a more plausible theory than that such geodes are the crystallized centers of fossil clams. They really are not the shape of clams, and had there been fossils present the extreme heat of the molten magma would have destroyed their identity.

The gem stones found on this trip were carnelian (shades running from pale salmon to deep orange red), sard (a darker variety ranging from reddish tan to a deep caramel brown), pink chalcedony and the ordinary white and cream colored chalcedony usually found in "desert roses." The size of the stones found here is small, but the carnelian cuts into a rather fine gem and is comparable with that from many of the famous locations of the world.

The sard is not so popular a stone today because of its rather somber color, but it has a historic and talismanic background found in the record of few other gems. It undoubtedly would be listed among the first five gems of the ancients. Many museums today have fine specimens of signets and seals of sard, produced by the craftsmen of the ancient world. Some beautiful intaglios were from this dark brown gem.

A mineral collection hardly is complete without a specimen of sard and I have no knowledge of any locality on the desert I can recommend as highly as Saddle Mountains for securing this stone.

The pink chalcedony found here is somewhat different from any I have seen from other localities. Some pieces actually are the color of pale rose quartz with the fine creamy texture characteristic of chalcedony. Other specimens show a slight violet or amethystine tint, making them a distinctive type of chalcedony. A fine descriptive name for it would be "orchid stone." Its color and fluted edges in the rough remind one of that flower.

I have returned to the Saddle mountains once since my original visit there, but still did not have time to cover the area as well as I would have liked. It is a grand place for collectors and one could go there and camp for weeks without having a dull moment. Sooner or later I am going to return there, both to paint and to prospect.

The Desert Trading Post

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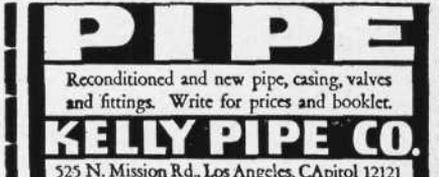
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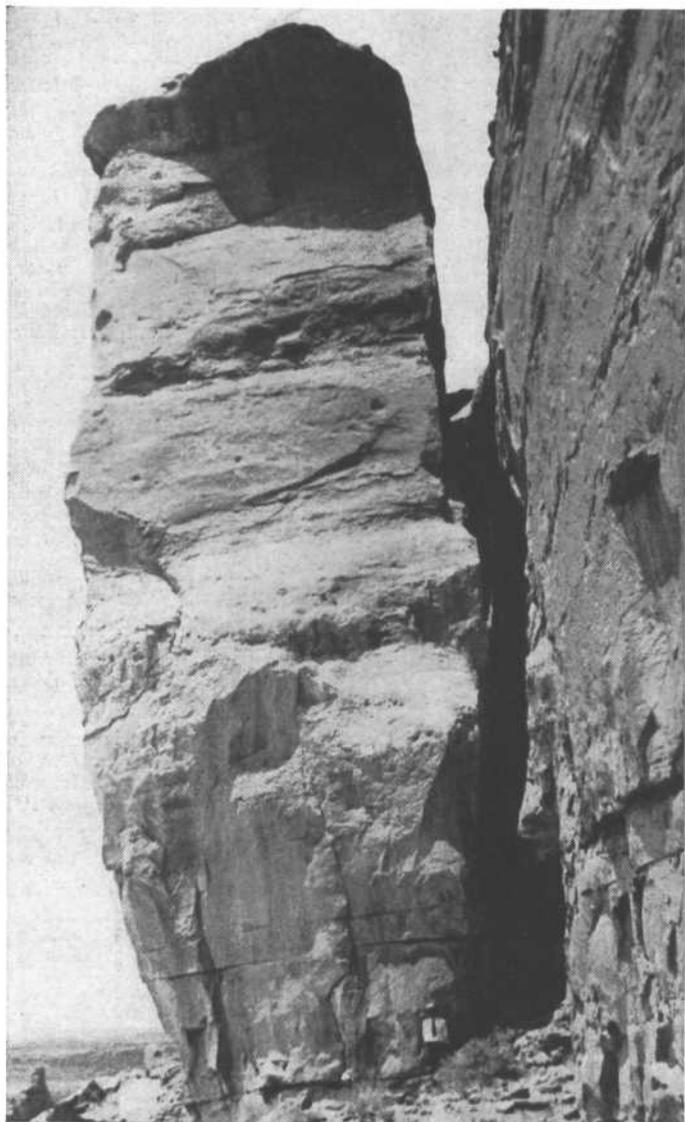
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'THREATENING ROCK'

Winner of the \$5.00 prize offered by the Desert Magazine in August for the identification and most accurate description of the rock pictured below was J. L. Patterson of Farmington, New Mexico. Many entries were received in this Landmark contest and all of them were of such merit that the judges spent many hours reading and comparing them point by point before the final selection was made. The winning story appears on this page.



By J. L. PATTERSON

THE Landmark pictured in the August issue of Desert Magazine is Threatening Rock, in Chaco canyon national monument, in northwestern New Mexico.

Chaco canyon is 64 miles north of U. S. Highway 66 at Thoreau, and 65 miles south of Aztec over State Highways 55 and 56. The junction points are well marked.

This huge rock towers above the walls of ancient Pueblo Bonito, the great communal dwelling which was built during the 10th and 11th centuries by the peaceful agricultural people who lived in Chaco canyon in those days but had disappeared long before the Spaniards penetrated the Southwest.

The Navajo Indians call the spot *Sa-ba-ohn-nei* (*tsé biya-*

hani ábi) meaning "the place where the cliff is braced from beneath" referring to the walls and timbers placed under the rock by the Bonito people to prevent, or at least delay its fall.

A study of these primitive Indian engineering methods leads to the conclusion that their efforts were well directed and perhaps helped serve the purpose intended.

The cliffs of Chaco canyon are of sandstone with the harder strata near the top and the softer at the bottom. Rain, wind and blowing sand erode the softer strata and eventually they weather away allowing a part of the canyon wall to fall.

When the ancient Bonitans saw that this huge rock threatened to destroy their pueblo they set about to halt the erosion and avert its impending fall. Upon a carefully built platform, consisting of wedge-shaped layers of sand alternating with layers of rock and adobe mortar, were built walls that reached up to the overhang on the rock face shielding the soft lower strata and preventing its erosion.

Threatening Rock is an immense wedge of sandstone 97 feet high and 140 feet long and about 34 feet wide, its weight being estimated at between 25,000 and 30,000 tons. From time to time, in recent years, fear has been expressed that the rock was about to fall. The great mass of fallen fragments and drifted sand between the rock and the cliff wall collected moisture and, in freezing, exerted great pressure behind the rock. In 1936 when the national park service removed this debris an old Indian legend was recalled.

The Navajo say that many centuries ago a vast treasure was placed in this crevice to appease an angry goddess who threatened to topple the rock over the village. As long as this ransom was undisturbed the rock would stand but should it be removed the rock would fall. When the workmen cleaned out the debris behind the rock no treasure was found. The Indians believe that it has recently been stolen and that the fall of the rock is imminent. This belief seems justified by park service reports which show a slow but steady movement of the rock.

Since 1935 when the U. S. park service began measuring the movement of Threatening Rock the gap between it and the sandstone massif from which it was originally broken has increased nearly four inches. During the 13 months from June 1938 to July 1939 the "fall" was approximately two inches, indicating that it is moving with increased momentum. These measurements were taken at the top where a permanent gauge has been installed.

The distance between the rock and the cliff is from two to four feet at the bottom and from five to 12 feet at the top, according to the point of measurement.

'THREATENING ROCK' PRESENTS PROBLEM TO PARK SERVICE

Plans being made by the U. S. park service to keep "Threatening Rock" from falling are disclosed in the following extracts from a recent report by James B. Hamilton, associate engineer in the service.

In past geologic ages, "Threatening Rock" was a part of the cliff which walls in Chaco canyon. For unknown millenniums it has been slowly separating from the cliff behind it, until now it is some five feet from the cliff at its top, and two feet at the ground level. This tilting indicates that the base may extend some 50 feet underground.

It is certain that Threatening Rock looked considerably more menacing to the Bonitans than it does to us, because it probably towered 15 or 20 feet higher than now. The walls and terrace they built in front of it, and the sand and soil that have blown in, have reduced its apparent height. Even so, when viewed from a short distance up the canyon, it seems

about to fall on the ruins of Pueblo Bonito.

Immediately to the west of the rock against the base of the cliff, is a mass of angular boulders. There is evidence that at one time the rock extended 50 feet or more to the west, and that this portion of the rock fell. Excavations indicate that in falling it crushed some small structures built against the cliff. Possibly it killed people living in them.

Whether by example of this rock fall, or by others along the canyon; or simply because it looked as if it would fall, the ancients expended a great deal of effort to keep it propped up. Exploratory digging in front of it showed that they built up at its base enough material to fill a room with a ceiling height of 16 feet, width of 32 feet and a length of 180 feet—a room bigger than many moving-picture halls. Picture doing that with no tools as we know them today, and no power except that of human muscles.

Were they unduly alarmed? We can say now that they were prematurely alarmed. But we know the rock is falling. Its top is moving toward the ruins—about an inch a year for the last four years.

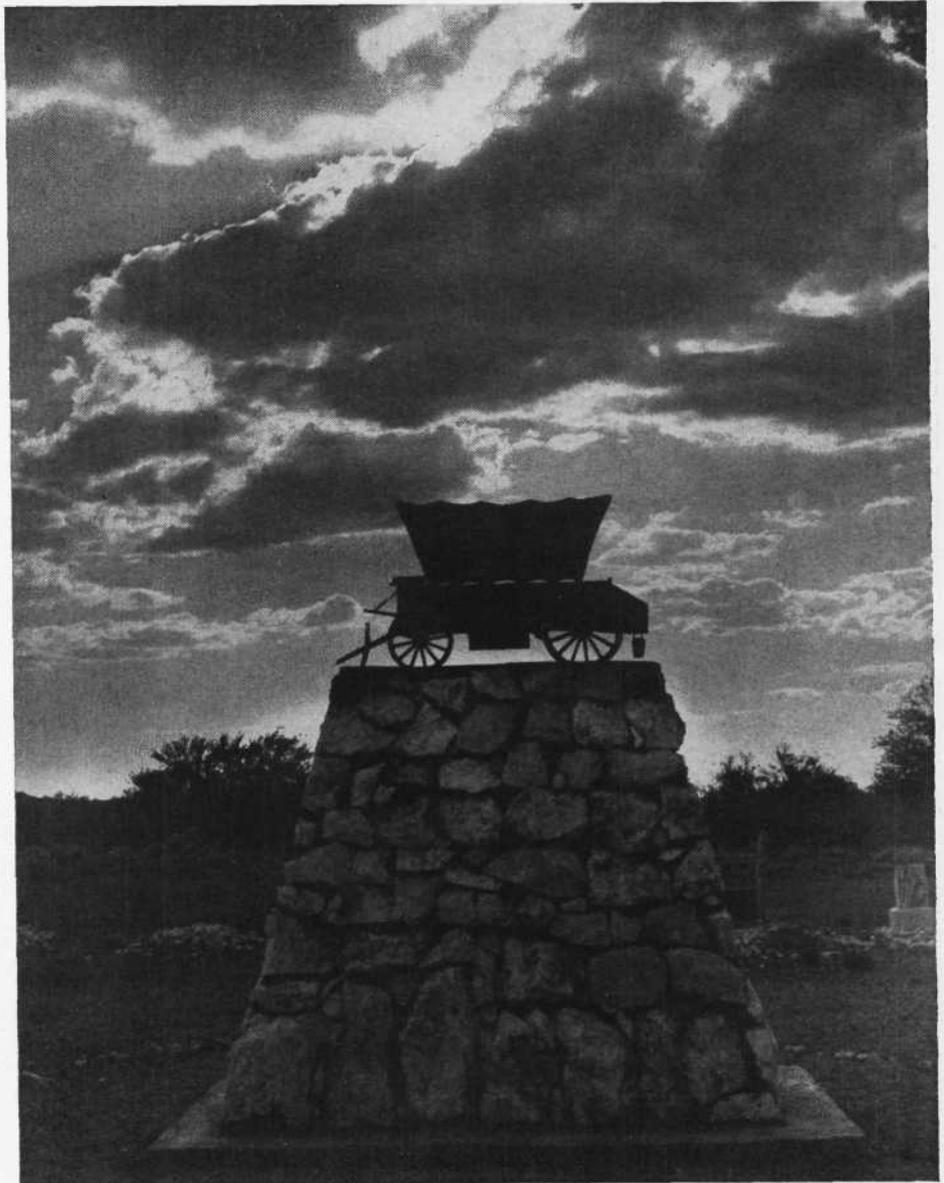
Gauge Measures "Fall" of Rock

In 1935, the engineers set a pipe in a horizontal hole in the rock near its top. The top half of this pipe for a few inches was removed. In the cliff opposite, an iron rod was grouted. Its outer end extends into the pipe. On the edge of the trough formed by the half pipe and on the rod, a mark was cut by a hack saw. Now the mark on the pipe and the mark on the rod are over four inches apart. Measurements which are regularly made by the custodian of Chaco canyon national monument, show a little outward movement every month.

Given the problem of a falling rock, what shall we do to stop it? Some say blast it down before it falls on the ruins and more or less wrecks them. Some say block it up, as the ancients did, only use concrete instead of clay, sand, and rock. Others would tie it to the cliff, with rods of steel. The unique archaeological exhibit at the base of it must be saved. That is fundamental. Nothing like it exists elsewhere in the world. That being accepted, the first two solutions are ruled out. If we remove the rock, we destroy the visual evidence of why the Bonitans did all that work. If we build a buttress of concrete, we have to remove the work they did. True, we might replace some of it as a veneer over the concrete, but then we would have only a restoration job.

Most engineers who are familiar with the rock believe the best solution is to make use of the discoveries of modern science, and to use steel, air-hammers, treading machines, cement grout, the

Who Knows This Landmark? Somewhere in Arizona



Prize Contest Announcement

For its Landmark prize contest this month the Desert Magazine has selected the above picture, taken along one of the main highways in Arizona.

Many travelers have seen this unusual monument. Only a few of them know the story connected with it. In order that all possible information may be obtained re-

garding this landmark the Desert Magazine will pay \$5.00 to the reader who sends in the best descriptive story of not over 500 words.

Those entering the contest should give the exact location, the legend if any, appearing on the monument. Who built it? Why? What does it commemorate? Give all the information available.

Answers must reach the office of the Desert Magazine by the evening of October 20. Three judges will pass on the merits of the entries, and the prize will be awarded the writer giving the most complete and accurate information. The winning story will be published in the December number of the Desert Magazine.

principle of the lever and the wheel, and many other skills and processes unknown to the Bonitans. Briefly, it is tentatively planned to drill holes in the back of the rock and face of the cliff near the top, exactly opposite, and to grout steel rods into these connected by a turnbuckle. As this is turned the rods would be drawn together.

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HERE AND THERE

... on the Desert

ARIZONA

Chandler . . .

Problem in wildlife: What urge drives an aquatic bird to make its home on the desert, where there's little water and no fish? At the E. M. Goodson ranch near here a pelican drifted down deliberately from a clear sky to a studied landing among astounded barnyard fowl. There the web-foot makes his home, unaccustomed as he is to drinking from a faucet and despite the difficulty of diet for a fisheater in a land where fish come mostly in cans.

Flagstaff . . .

In an ancient burial vault uncovered during excavation of a pueblo at Ridge Ruin, 19 miles east of here, archaeologists found with the body 25 whole jars and bowls; four baskets, two of them painted; 18-inch sticks with paintings of human hands and deer feet; two bone awls inlaid with turquoise; a cylindrical basket covered with about 1500 pieces of turquoise; two turquoise earrings; a wand 18 inches long; painted stools and a painted mug; thousands of shell and stone beads; red, green and blue paint; abalone shell and scores of painted shells. After all these objects had been placed with the body, more than 400 arrows were thrown on top and the burial chamber was roofed with juniper poles. Dr. Harold S. Colton, director Museum of Northern Arizona, dates the pueblo as of between the middle of the 12th and middle of the 13th centuries.

Tucson . . .

"All big game — I might also include small game—is on the increase with the exception of two animals, the bighorn sheep and the grizzly bear. Antelope, deer, elk, black bear, brown bear and mountain goats, in that order, are increasing fast. The grizzly bear is too closely hunted to show much increase. But the bighorn, I really believe, one day will again be our greatest game animal. The meat is unexcelled." So Dr. Homer L. Shantz, chief of wildlife management division, U. S. forest service. Dr. Shantz estimates there are 7,000 bighorns in the west. He wants hunters, rather than predatory animals, to get the increase of game, prefers temporarily closed areas to fixed area game refuges.

Kingman . . .

Arizona and California state highway departments have made tentative agreement to relocate a section of highway 66, thus doing away with present long detour from Oatman by way of Topock to Needles, California. New location, from near Boundary Cone to Needles will shorten distance approximately 25 miles, avoiding many reverse curves and short tangents, ups and downs.

Naco . . .

Six-foot fence, strung on steel posts set in concrete will be built along 30 miles of the boundary between Arizona and Mexico east and west of this town. To do the job \$25,000 has been set aside by the international boundary commission. At present a 40-mile section of the line is unfenced in this vicinity.

Tucson . . .

Immediate repair or immediate ruin faces historic San Xavier mission. Rev. Mark Bucher, pastor of San Xavier, is authority for this statement. Lightning in July shattered the cupola of the west tower of the 200-year-old building. Recent rains draining through cracks opened by the bolt now are softening adobe towers which threaten to crash into the interior of the church. Cost of repairs is estimated at \$1,000. To Father Ildephonse, superior of the Franciscan order in Oakland, California, a letter of urgent appeal has been sent, the public is asked to help in raising funds.

Safford . . .

Roosevelt would favor giving back to the Indians 232,320 acres of land ceded by the San Carlos Apaches to the federal government by agreement in 1896. The president says this in his veto of a Senate bill providing for payment of \$33,725 to the Apaches and for reopening the land to mineral entry. The legislation was "definitely objectionable," reads the veto message, because it "deprives the Indians of future use of the lands and even of their present receipts." The San Carlos reservation was set up in 1872 by President Grant.

Grand Canyon . . .

Return to the public domain of 148,159 acres now included in the Grand Canyon national monument was disapproved by Roosevelt when he vetoed an act he said was passed by Congress without sufficient consideration. The president said he appreciated stockmen's need for range facilities, but "Before approving any measure eliminating lands from any national monument, I would want to receive a report from representatives of the national park service."

CALIFORNIA

Indio . . .

Prospectors roaming the Little San Bernardino, Eagle mountains and down into the Chocolate range tell thrilling tales of herds of wild burros and mountain sheep on inaccessible crags above desert valleys. In the Santa Rosas south of here several bighorns are said to range. Men who helped to build Parker dam report groups of 20 to 30 bighorns in rugged hills west of the dam and in California mountains between Parker and Blythe. It is not unusual to find in this region heads of these animals slaughtered by hunters, although there is a heavy fine for killing one of them.

El Centro . . .

Although Dean Frank Shepherd is along in his 70s he climbs desert mountains with the zest of his youngest geology student from the local junior college. Arid ranges of this region, along with his devoted pupils will miss the Dean this fall. He retires, after teaching 42 years, 23 of them here.

Panamint Springs . . .

Petition to establish a post office at Panamint Springs has been forwarded to Washington. If granted, residents hope to get regular mail route from Lone Pine to Panamint, thence to Death Valley, providing also freight and stage service.

Desert Center . . .

Fifteen hundred feet underground, three men in a boat recently rode four miles along a buried river on the desert. Above, a blazing sun shot surface temperatures to 120 degrees, but it was cold in the voyagers' tiny craft hustling along on a current carrying 270,000 gallons of water a minute. Julian Hinds and his crew were engineers for the Metropolitan water district of Southern California. They boarded a skiff to inspect The Catacombs tunnel forming part of the 392-mile aqueduct built to deliver Colorado river water to the Los Angeles area. At tunnel entrance their craft nearly capsized in the swift water, then righted itself, rode safely through darkness to daylight.

El Centro . . .

Radio network linking U. S. border patrol stations from Gulf of Mexico to Pacific ocean near completion, with 500-watt transmitters at Laredo and El Paso, Texas, and San Diego, California. An intermediary station of 300 watts has been built here, others are located at McAllen, San Antonio, Del Rio and Alpine, Texas, and at Tucson, Arizona. Portable radio telegraph sets effective up to 200 miles will be installed in patrol automobile cruisers. Cars are now equipped with portable telephone sets transmitting 30 miles. Communication at any point along the border will be possible 24 hours of every day when the system is operating.

NEVADA

Winnemucca . . .

After 59 years operation by the Kent family, the 4,000-acre Rock creek ranch eight miles south of Golconda in Humboldt county has been sold. Roy A. Bain, jr., is the buyer, according to William Kent. The Rock creek property adjoins the Bain ranch. Sale to Bain conveys the land, livestock will go to other buyers.

Carson City . . .

At historic points along the old pony express trail in Nevada monuments were unveiled in August. Taking part in the ceremonies were members of a caravan from the Oregon Trail memorial association which donated bronze plaques appropriately inscribed. Memorials were dedicated at Eureka, at Austin, old Fort Churchill, Dayton, Carson City and Genoa. Annual convention of the Oregon Trail association was then held at Sacramento, California.

Reno . . .

Twenty deaths on Nevada highways in July stirred Governor E. P. Carville to order state police to redoubled vigilance in enforcement of traffic regulations. Nevada never before had so many traffic fatalities in one month.

Las Vegas . . .

Fifty cabin sites have been developed at Hilltop camp and four miles of the Deer creek road in the Charleston mountains leading to Hilltop have been completed, reports Jack McNutt, forest ranger. Water has been developed, firewood is available and the additional facilities for summer outings will relieve congestion in Kyle canyon. Visitors are warned not to dig up small trees and flowering plants. Foresters have set out young growth to provide cover on the mountain.

NEW MEXICO

Albuquerque . . .

Blind men can make adobe bricks. Half a dozen sightless workers are employed here in this occupation. Paid at the end of every day for the bricks they make during the day, lowest wage is 25 cents per hour. Product is disposed of at public sale. Money to set up the enterprise was furnished by Friendship League for the Blind.

Santa Fe . . .

Score new high for New Mexico's tourist industry! Joe Bursey, state tourist bureau director, reports 7,000 out-of-state automobiles entered the state during 24 hours July 23. This tops July 23, 1938 by 800 cars and is more than 1,000 above the June 1939 record. Anthony station on U. S. highway 80 led all state border stations, reporting 1105 cars.

Santa Fe . . .

How're you going to keep a social security record for a Navajo when he uses as many as 15 names? That's the headache nursed by Lyman Brewer, in charge of the local office for the SSB. Listen to Brewer: "A Navajo baby's parents may call him 'Little Bowlegs' when he starts to walk. Then later, he may be named 'Little Chicken Thief', and so on and on. If he has a physical affliction they'll call him 'Crossed Eyes' or 'One-ear.' And if you ask him what his name is, he'll just give you another that he likes better. Or he may take the name of a friend—Indian or otherwise—and use it for several years, or use various English translations of his Indian name. He may take employment under one name with one employer, use another name with another employer. All this makes our record keeping a little difficult."

UTAH

Duchesne . . .

Moon lake electric association on September 1 celebrated energizing of first rural electrification project completed in Utah. Fifty-one miles of line serve 224 homes, 200 of which were wired and ready for service. Additional 220 miles of line will reach 1,000 families in vicinity of Boneta, Mountain Home, Talmage, Utahn and Tabiona, thence eastward through Ioka, Hancock, Cove, Montwel, Cedarview, Ballard, Lapoint and Tridell. S. K. Daniels of Mt. Emmons is president of the Moon lake co-operative.

Salt Lake City . . .

Early-day Mormon settlers traded in Indians, Mexicans and Negroes, according to records of the Daughters of Utah Pioneers. Motive was humanitarian in many cases, according to Mrs. Anthony B. Lund, county recorder. Indian parents sometimes killed their offspring when families were too large. Therefore settlers arranged to trade livestock for a young boy or girl to save children from death. Slavery never was legal in Utah. Bill of sale for a negro boy is recorded in a book containing transactions for the year 1859.

Ogden . . .

Prices at the Ogden wool auction in August set new records for the year in this intermountain region. Top price of 28 1/4 was paid for a 3,000-pound lot of quarter blood consigned from the Fremont county, Idaho pool, first day of the sale, when 58 lots were sold. Total sales for two days aggregated 1,774,550 pounds. A Boston buyer paid 28c per pound for 2,050 pounds of Idaho wool, original bags.

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BOOKS OF YESTERDAY AND TODAY

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

THEY FOUND SANCTUARY IN A DESERT WILDERNESS

Vardis Fisher's CHILDREN OF GOD is the saga of a people whose faith and tenacity are an epic in American history. It is the story of the Mormons, and the intolerance and persecution that drove them from Palmyra, New York, to Ohio, Illinois, Missouri, and finally to the great basin of Salt Lake.

As remarkable as their faith was their extraordinary enterprise. During their migrations, they transformed the landscape wherever they camped. Where there had been wilderness, there soon arose cabins, store houses and repair shops; crops were planted for the following companies to reap; the hunters and trappers laid in supplies; women made baskets, washboards and other articles to sell along the way. The final triumph of their community cooperation was the building of Salt Lake City in a desert of dust and salt.

CHILDREN OF GOD is also the story of two men, Joseph Smith and Brigham Young. A dreamer and student was Joseph. He first received the vision of his prophethood at the age of 14. At 24 he published the Book of Mormon in which he set forth his divine revelations which became the tenets of the Church of Jesus Christ of Latter-day Saints.

There was none of the mystic in Brigham; he was a great realist, a shrewd statesman and brilliant organizer. Joseph accepted persecution as punishment for wickedness and knew that God would take care of his faithful ones, but Brigham was sure God intended man to use his brains to help himself.

Driven westward by the hostility of their neighbors in New York they established homes in Ohio. They found intolerance there, and fled to the Missouri wilderness where a prosperous colony was founded. When they were driven out of Missouri they built a miracle city, white and gleaming, in an Illinois swamp. But everywhere they met hatred and persecution — and so they trekked westward across the plains in search for a land where they could dwell in peace.

On July 23, 1847, the mountains suddenly fell away and Brigham looked across 100 miles of distance. "This is the place. We'll build our home down there."

Published in August by Harper and Brothers, the 769-page book was judged winner of Harper's ninth prize novel contest. The judges were Louis Bromfield, Carl Van Doren and Josephine W. Johnson. (\$3.00) —LUCILE HARRIS.

WHEN BRAVE MEN AND ROGUES TREKKED TO SANTA FE

More than 100 years have passed since American trappers, traders, soldiers and adventurers pioneered the route which became known as the Santa Fe Trail.

From the Missouri river, outpost of Anglo-American civilization at that time, to the Mexican pueblo of Santa Fe, those hardy frontiersmen trekked over plains and mountains inhabited mainly by wild beasts and wilder humans. One or more of the Indian tribes which then shared these western plains with vast herds of buffalo, was nearly always on the war-path.

A vivid story of this epic in the colonization of the North American continent is told by Stanley Vestal in THE OLD SANTA FE TRAIL, recently off the press of Houghton Mifflin company, Boston.

Vestal has succeeded to a commendable degree in recapturing the feelings, the sensations, the hopes and fears and humors of the men who trod that trail—the Yankee with his stock of wares to be exchanged for corded bales of buffalo robes and beaver furs — the mountain men who went into the west to trap — buffalo hunter, soldier, greenhorn and bull-whacker.

It was a fortunate caravan that did not encounter hostile Indians at some point on the trail, and there were other hazards—raiding Texans from the south, Mexican officials who took advantage of the opportunity to mulct Americans. At times the wagon trains moved in a cloud of choking dust, and at other times fought their way through a sea of bottomless mud.

At the end of the trail was the colorful pueblo of Santa Fe where stakes were easily made, and quickly lost, and where dark-eyed señoritas were friendly but fickle.

Vestal's book is more than a history of the time and place. The author takes the reader along the trail as a companion of such men as Kit Carson and William Bent and gives an intimate day by day portrayal of life in camp and on the march.

Exhaustive research work was done to make this book an authentic record of this drama of the western plains. The appendix includes reference citations, a chronology and log of the Santa Fe Trail, bibliography and index. (\$3.00) —R. H.

Writers of the Desert . . .

It is a difficult assignment when a writer is asked to prepare a feature story about a next door neighbor. Most neighbors are either very wonderful people, or else they are — well, impossible. And it is just as hard to write an unbiased article about one as the other.

HELEN SPEAKER was in this spot when she undertook to prepare the story for the Desert Magazine about Merina Lujan, the Indian artist. They are next door neighbors at Santa Fe, New Mexico — the kind of neighbors who would share their last crust if it came to that.

Miss Speaker is 33, a native of Kansas City, and spent several years traveling in the Southwest and writing. Has acquired the usual quota of rejection slips, but has feature material appearing often in the Santa Fe Examiner, the New Mexican, and the Kansas City Star. At present she is employed by the Cuatro Centennial committee on writing assignments. Like most New Mexicans she feels sorry for those who have not the opportunity to live in New Mexico.

• • •

TRACY M. SCOTT'S story about Purple Glass in last month's Desert Magazine was the answer to many requests that have come to the editorial staff for information as to why glass turns purple, how long it takes, etc. Miss Scott, whose home is now in Oakland, California is an ardent hobbyist. At one time or another she has collected just about everything under the sun. Mere possession of rare bric-a-brac is not enough for her, however—she insists on knowing all that can be learned about the things in which she is interested.

She has traveled widely and done exhaustive research work on many subjects. For several years she has been compiling a volume of California Place Names, still unpublished, but one of the most complete gazetteers ever undertaken by a California student.

• • •

MacDONALD WHITE, who wrote about the Pierce collection of "sandspikes" for this number of the Desert Magazine, is a resident of Alhambra, California.

He did newspaper reporting for 10 years, and then gave up his job with the determination to make a living as a freelance writer—or starve in the attempt. He isn't getting rich at the writing game, but he is still young and has what it takes to succeed. He has done some fiction writing for the pulps, but prefers magazine feature work.

WILL OBSERVE ANNIVERSARY OF CORONADO'S ARRIVAL

Arizona, New Mexico, Colorado, Texas and Kansas are making plans to celebrate four hundredth anniversary of arrival of the Southwest's first Spanish-American tourist, Francisco Vasquez de Coronado, who wrote back to Mexico in 1540 "wish you were here, the scenery's grand." Congress voted \$200,000 for the celebrations, a \$10,000 monument will be erected on the Arizona-Mexican border. Kansas is expected to boost the New Mexico pageant in 1940, hold its own show in 1941.

• • •

RAIN GODS ANSWER PRAYER OF SNAKE CLAN

One of the worst drouths in many years on the Hopi Indian reservation in Arizona was broken August 26 at the close of the tribesmen's snake-dance appeal to their tribal gods of the underworld for rain to save their burning crops. Dark clouds blackened the sky as the priests chanted ritual of the ancient ceremony dancing with vicious snakes in their mouths and twined around their arms. At the conclusion of the weird supplication witnessed by 3000 spectators, there was a torrential downpour. Reports from Walpi, where the snake dance was staged, say "rain fell in sheets."

Weather

AUGUST REPORT FROM U. S. BUREAU AT PHOENIX

Temperatures—	Degrees
Mean for month	90.2
Normal for August	88.5
High on August 21	109.
Low on August 7	70.
Rain—	Inches
Total for month	0.84
Normal for August	0.95
Weather—	
Days clear	17
Days partly cloudy	9
Days cloudy	5

G. K. GREENING, Meteorologist.

FROM YUMA BUREAU

Temperatures—	Degrees
Mean for month	92.6
Normal for August	90.4
High on August 21	111.
Low on August 21	74.
Rain—	Inches
Total for month	0.12
69-year average for August	0.50
Weather—	
Days clear	25
Days partly cloudy	4
Days cloudy	2
Sunshine 92 per cent (380 hours out of possible 414 hours).	

Colorado river — August discharge at Grand Canyon 244,000 acre-feet. Discharge at Willow Beach below the dam, 717,000 acre-feet. Estimated storage September 1 behind Boulder dam 23,665,000.

JAMES H. GORDON, Meteorologist.

★

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Desert Place Names

For the historical data contained in this department the Desert 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

APACHE TRAIL

Maricopa and Gila counties
Barnes says this name was invented by railroad officials when Southern Pacific branch was completed from Bowie to Globe. Prof. Abner Drury of Berkeley, California, was commissioned "to reconstruct established nomenclature of points on Roosevelt dam highway." (circa 1919.) For publicity purposes name "Apache Trail" was extended to cover the road to Globe, 40 miles beyond the dam. Early-day stage drivers delighted in spinning tall tales for their passengers. "Mormon Flat" was the scene of the massacre of a party of Mormons, "Tortilla Flat" was where early Mexican travelers stopped to cook tortillas. These were samples of drivers' yarns. Fairy tales, all of 'em, Barnes comments. Worst of all, according to this earnest student of Arizona history, established historic names Arizona pioneers tried to perpetuate were ruthlessly changed into meaningless Spanish words. For more than half a century the trail was known generally as "Tonto Trail," because it led direct from Tonto basin to Salt river valley. In November 1881, Barnes recalls, he drove a band of saddle horses through the basin to the valley via the Tonto trail. Where the Salt enters the granite gorge now blocked by Roosevelt dam there were two trails down river. From Tonto creek north of the present dam, one trail led over the southern flank of the Four peaks, kept on top of Salt river canyon for about 20 miles, then dropped into it at Horse mesa, crossed the river, climbed out on the south side and followed up Pranty creek, where Old Man Pranty had his cabin, to the backbone at its head. There one followed along the watershed east of Superstition mountains to the open desert near Goldfields. Or, if one came down the Salt river he turned from that stream a little below where the settlement of Livingston grew up, climbed out along Campaign creek around Windy hill, and picked up the Tonto trail near the head of La Barge creek. Both trails were passable but rough. Settlers used them only in emergencies, taking the trail over Reno pass when time permitted. Apaches used these trails to reach and raid their enemies, the Pimas and Maricopas.

CALIFORNIA

INKEPAH (Inkee pah') San Diego county
Diguëno Indian word applied to early-day Indians living in the mountains of eastern San Diego county, according to Edward H. Davis of Mesa Grande, who writes: "Hardly any of these desert Indians are left now. It is not the name of any single village and may have embraced a number of rancherias. The coast Indians were called Comeyi (Co mee Yi') and those in the mountains Inkepah. I applied this name to the mountains of Laguna, Cuyamaca and Palomar and the range of which they form a part. I think *pah* means people. You will not find the word in any book and it is rarely used by the old Indians. I think the name applied to the Mountain springs road, as the Inkepah trail or Inkepah canyon trail would be very fitting and suitable." This is quoted from a letter to Robert Hays, manager of the El Centro chamber of commerce. Since it was

written, a sign has been placed on U. S. highway 80 at foot of Mountain springs grade, carrying the legend **INKOPAH GORGE**. This sign stands at a point where the canyon is spanned by Shepards bridge. Several Indian languages have a word, *pah*, meaning water, not as Davis translates it (people).

NEVADA

MASON VALLEY

Lyon county
From N. H. A. Mason and his brothers who drove cattle to California in 1854, settling here to fatten their herd in the grazing land. In 1860 they built the first house in the valley, using mud and tules. Ranch was owned by Miller & Lux.

TONOPAH (Tone' o pah)

Nye county
Indian word meaning "small water," a small stream. Mining district discovered in November 1902 by J. L. Butler, who spent his childhood among Indians and vouches for the word's meaning. County seat.

NEW MEXICO

ELEPHANT BUTTE DAM

Sierra county
This dam on the Rio Grande stores water for Mesilla and El Paso valleys, takes its name from Elephant butte, a large rock formation named for its resemblance to an elephant. The butte is about 300 feet above the dam, stands 200 feet high. Due to dispute between citizens of Mexico and residents living in the United States regarding water rights along the river, the dam was constructed to create a reservoir for irrigating farmlands. In 1902, A. P. Davis, chief engineer U. S. bureau of reclamation located the damsite, the structure was built across the canyon, a dam 1200 feet long and 300 feet high.

PICURIS (Pee kur ee's)

Taos county
Probably Spanish spelling for Keresan name (Pikuria) of this Indian pueblo. Origin and meaning unknown to researchers for this magazine. These pueblo people speak the Tigua language. Early seat of Franciscan mission of San Lorenzo was established here, had 3,000 inhabitants in 1680. Then the natives killed their missionary, burned the church, and abandoned the pueblo. It was rebuilt (circa 1692), abandoned again in 1704 when the Picuris people fled to Quartejejo, a Jicarilla settlement northeast of Santa Fe. Two years later they were induced to return again to their old home. The tribe then had a considerable infusion of Apache blood, today is largely made up of Spanish-Americans.

UTAH

NORTH OGDEN

Weber county
Named for Peter Skene Ogden, early fur trapper and trader. Soon after Ogden City was settled in 1848 a small group of pioneers made their homes near what is now North Ogden or Five Points, appropriating the name Ogden Hole, to distinguish their settlement from the neighbors at Ogden. But the original Ogden Hole of the fur trappers was in what is now Huntsville valley, so they changed the name to North Ogden.

HELPER

Carbon county
Settled 1883. Named by Denver & Rio Grande rr because at this point additional locomotives are necessary to help trains over the Soldier summit divide.

Mines and Mining . .

Salt Lake City, Utah . . .

Greedy claim owners and crooked promoters were rapped by Carl J. Trauerman, Butte, Montana, engineer, in an address before delegates to the divisional convention of the American Mining congress. "Crookedness, inefficiency and greed" must be eliminated in order to attract public investment for new mine development, Trauerman declared. At the same time he warned the Securities and Exchange commission should not harass and bring into court honest men who make honest mistakes. Edgar B. Brosard of the U. S. tariff commission told the mining congress reciprocal trade agreements had resulted in import duty reductions ranging up to 50 per cent on "9 or 10" metals other than steel and iron.

Lovelock, Nevada . . .

Her husband thought he had swept the bedrock clean, but Mrs. George C. Van Galder and her little daughter Mary Lou had sharper eyes. The womenfolks scratched out a \$70 gold nugget and \$15 in smaller gold at Willow creek when they searched ground Van Galder had worked. The large nugget was true gold color but contained considerable quartz.

Salt Lake City, Utah . . .

Producers should receive \$1.29 per ounce for silver, says Key Pittman, Nevada senator and he intends to fight for legislation fixing this price. The government pays 71.1 cents an ounce and at a cost of one-tenth of a cent an ounce coins this silver, which then has a legal value of \$1.29 an ounce. This, Pittman figures, is "hijacking 45 per cent." Since the government pays its debts with silver at \$1.29 an ounce, that is the price miners should get, he declares.

Kingman, Arizona . . .

Complete shutdown of the Portland mine near here followed a fall of rock estimated at 50,000 tons or more. Operated by the Gold Standard mines corporation, the property had been scheduled for abandonment. But the fall occurred before drills, steel, ore cars, track and other equipment had been removed. Capacity milling at the Gold Standard mill will not be interrupted, since there is plenty of ore in sight at the Tyro and Katherine mines of the same company.

Washington, D. C. . . .

Government military experts, beginning a \$100,000,000 buying program to lay in stores of war materials, expect soon to order manganese, chromium and tungsten for alloys; tin for food containers and automotive equipment, and quartz crystals for radio equipment and electric gauges. Initial orders will amount to about \$10,000,000.

Goldfield, Nevada . . .

Freeport Sulphur company of New York has taken an option reported at \$425,000, on 29 molybdenum claims of the Roper and Sorensen groups, in rugged Alum Gulch, 57 miles southeast of here. Diamond drill exploration is planned. Several years ago a 500-foot tunnel was driven and there has been considerable surface prospecting. Freeport Sulphur operates large sulphur properties in Louisiana and Texas.

Tucson, Arizona . . .

Research as to domestic supply of minerals needed in event of war will be carried on by U. S. bureau of mines headquarters here. In Arizona \$250,000 will be spent collecting data on such minerals as tin, antimony, tungsten, and manganese. Reports on prospecting will be sent to the war department at Washington. A staff of eight engineers in the field will begin at once, employing local labor for exploration, according to announcement by E. D. Gardner, supervising engineer.

Mosquero, New Mexico . . .

Discovery of a new field of carbon dioxide gas is reported in southwestern Harding county, by drillers trying for oil on a lease held by A. S. Waddell and associates. It is said the gas was found at depth of 1115 to 2346 feet. Location is within 45 miles of the Texas-New Mexico line.

Tucson, Arizona . . .

In a walled adobe city reproducing on a 500-acre site every detail of Tucson as it was in the days of the war between the states delegates to the annual convention of Arizona Small Mine Operators association will hold a jamboree. Convention dates are November 3 and 4. Fifty-eight buildings, narrow streets and corrals of the old pueblo were duplicated for a motion picture set at a cost of \$500,000. Location is at Tucson mountain park, nine miles out on the desert. The setting will become property of Pima county for use as a permanent history museum.

Winnemucca, Nevada . . .

Owners of Nevada's valuable tungsten claims are watching war developments in Europe and holding tight to their properties. Prolonged conflict is expected to create a sharp rise in the demand for this mineral, as it did in the world war days.

El Centro, California . . .

Cool weather will bring active development work at the VanDerpoel gold strike in the Chocolate mountains near Glamis, according to the owners. Several tons of hand-picked ore have been milled at San Diego during the summer, but the task of back-packing the rock three-quarters of a mile in 115-degree temperatures has not encouraged big-scale operations. A road is now being built to the tunnel entrance and as soon as this is completed, probably in October, the VanDerpoels and James Murphy will go to work to determine whether they have just a rich pocket, or a valuable mine.

Winnemucca, Nevada . . .

Humboldt county's famous Jumbo mine, sold under option to J. K. L. Wadley and Sherman and H. D. Hunt, Texas oil operators, in May 1937 for a reported \$10,000,000, has been turned back to George Austin, its original owner. "I think just as much of the mine as I did when I turned it over to the Texas men," said Austin, "and will keep it in operation." The Jumbo was discovered in 1935 by Red Staggs and Clyde Taylor who sold the claim to Austin for \$500. A few months later he encountered high grade ore and many noted mining engineers visited the field.

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