

THE

Desert

M A G A Z I N E



OCTOBER, 1944

25 CENTS



GOLD RUSH JOURNAL MOST VALUABLE WORK ON '49 DAYS

When news of California's gold discovery reached the east, Joseph Goldsborough Bruff was working as an artist and draftsman in the Bureau of Topographical Engineers in Washington, D. C. Bitten by the gold bug, like thousands of others, he decided to make the journey to California in the spring of 1849, and organized a company of young men, of which he was elected captain. On the Lassen Cutoff his company ran into disaster and abandoned their captain, who spent the winter in a starvation camp. After an absence of two years Bruff reached home without having mined an ounce of gold.

Hundreds of men who joined the gold rush kept journals, many of which have been published. Few were ever intended for publication and to a certain extent they are all alike. But when Bruff started West he did so with the intention of writing a book, and never for a day forgot that purpose, even when at the point of death. Being an artist he made hundreds of sketches of scenes along the way to illustrate his work. Guarding his manuscript and sketches with his life he finally reached home, but found his work too

voluminous to interest publishers at that time.

Now, 95 years later, the journals and drawings of J. G. Bruff at last have been published by Columbia University Press, with his drawings and voluminous notes by the editors, Georgia Willis Read and Ruth Gaines. Nothing so interesting and comprehensive previously has been published on this subject. It is doubtful if anything ever will be found to equal it. His drawings alone are worth the price (\$15), while the editorial notes, which required an unbelievable amount of patient research, are as valuable as the text of the journals. Altogether this is the most colossal work ever presented on the subject of the gold rush and will be found not only a document of intense human interest, but an indispensable reference work on the exciting days of '49. Its editors and publishers have made the most outstanding contribution to the literature of that period, in **GOLD RUSH**.

—CHARLES KELLY

SOUTHWEST ADVENTURE IS IN SANTA FE TRAIL BOOK

The Santa Fe Trail leads to the heart of the Southwest. Its history embraces a story of explorers, fortunes and romance from the time the earliest Spanish explorers swung up through Mexico or west from Florida until the advent of the railroad.

Its travelers number into thousands, each with a mission, a hope, a dream of a new western world. To some the call was the lure of gold, that destroyed far more men than it made rich; to others it was a desire for high adventure or independence; still others bore the Holy Cross and became martyrs in the cause of Christianity. But whatever their incentive, each group had to face danger and privation, cruelty from nature and savages, before the goal of the West was attained.

Agnes Laut, author of other historical works, has missed none of the drama of the trail in her book, **PILGRIMS OF THE SANTA FE**. The heroism and tragedy of this fascinating portion of American history are traced in the stories of Narvaez, first Spanish explorer, the French march from New Orleans, the American caravans, army patrols, Mormons, Kearney's army in the Mexican war, the famous Indian scouts, the Forty-niners, and the railroad.

Grosset and Dunlap, New York, 1931. Photos, maps, index. \$1.29. —A.M.

SURVEY MADE OF NAVAJO AND PUEBLO SILVERWORK

Atsidi Sani, the first Navajo to become a silversmith, learned his craft from a Mexican between 1850 and 1870, and the Zuñi smiths in turn were taught by the Navajo. These are the conclusions of John Adair, who has presented a readable study of the American Indian metalcrafts in his book **THE NAVAJO AND PUEBLO SILVERSMITHS**.

Through the cooperation of Indians now living, the author has been able to give an authentic report not only of the history of Indian silver work, but of the methods and techniques of manufacture down through the years. Primitive forges and homemade tools still are being used in many hogans and pueblos of the Southwest today.

The commercialism of Indian silver work began in 1899 when the Fred Harvey company first began to buy bracelets and rings and other items from the Navajo for resale to white travelers in the Southwest. Previous to that time tribesmen made silver only for their own use and for occasional sale to soldiers stationed on the reservations.

Through exhaustive examination of the principal museum collections of Navajo and Pueblo silver work, and through detailed observation of the tribal smiths at work, the author has acquired an intimate knowledge not only of the mechanics of the craft but of its place in Indian culture past and present.

A chapter on origin of design is of special interest to those who have wondered about the symbolism of the figures used for the decoration of silver jewelry made by Indians.

Much revealing information is given on the importance of metalcraft in the economic and social life of the Indians today, and the effects of the white man's commercialization of the native arts. The present practice on the part of wholesale buyers of paying for Indian silver work by the ounce has resulted in lower standards of quality. However, good Indian silver and turquoise jewelry still may be obtained by buyers who are willing to pay the price which invariably attaches to quality. This book will be an invaluable aid to those who desire to become better judges of the quality of native craftsmanship.

The author formerly was manager of Navajo Arts and Crafts Guild, and is now a sergeant in the United States Army Air Forces.

Published by University of Oklahoma Press, 1944. Many halftone illustrations, map, chart. Appendix, bibliography and index. 220 pages. \$4.00.

—RANDALL HENDERSON

POEMS OF NEW MEXICO . . .

Roy A. Keech has translated into poetry the rhythm and beauty of traditional life in the Southwest . . . its rituals and arts, its legends and landscapes. Mood and spirit of Indian and Spanish-American cultures in distinctive style. Your friends will appreciate one of these gift volumes. Limited offer.

PACANS PRAYING. Ceremonials, rituals and rhythm dominant in Southwest Indian life. Understanding, beautiful interpretations of Indian art, dances, handcraft. Full page drawings by Poo Chalee, Taos Indian artist. \$2.00

POEMS OF NEW MEXICO. Scenes and sounds in New Mexico . . . luminarios, mesa lands, ruins, pottery makers. Bright and colorful glimpses into lives of Indians and Spanish speaking people. Printed from handset Lydian. \$1.00

CHILDREN SING IN NEW MEXICO. Twelve children's songs with piano music and words in Spanish and English. Delightful, authentic verses about the burro, the horny toad, tamale man, fiesta dress, Indian drum, etc. Clever pen sketches. \$1.00

DESERT CRAFTS SHOP

636 State Street El Centro, California

DESERT

Close-Ups

* Since John Hilton wrote his story of the Holmes brothers and their lead mining at Castle Dome, in early summer, disaster has overtaken the camp. As is typical of the desert, it came in form of a violent thunderstorm which flooded and destroyed the workings where the high grade galena was discovered. All machinery and equipment were lost, the men barely escaping with their lives. After surmounting disheartening obstacles George, although ill from overwork and heat, now has brought the mine back into production.

* We're sure most gem cutters never have dreamed what really was happening when they were polishing a rock. After they have read Jerry Lauder milk's next story, to appear soon, those rocks never again will look the same. Besides diagrams to explain the scientific basis of the story, he has made drawings of eerie, unbelievable scenes found on actual specimens of polished geodes.

* So far as is known the map drawn by Norton Allen based on sketch by author Marion Estergreen for this month's travelog is the first ever made of the New Mexico cave area. Besides being a writer of feature articles Marion has had considerable verse published and is known as poet laureate of New Mexico. She has a handsome young son, with the navy somewhere in the Southwest Pacific, whose hobbies are mining and geology.

* Although the main lures for John Blackford's camera are Southwest landscapes, such as appear this month in Desert Wonderlands, he is also interested in desert wildlife. Readers saw his winning photos of baby quail in the September issue. Soon Desert will publish more of his photos of birds and animals in their desert homes.

* In the neat clean pueblo of Isleta about 12 miles south of Albuquerque, New Mexico, E. F. Hudson photographed the Indian outdoor ovens shown on this month's cover. He says "they really glow in the sun, perhaps because of the golden colored straw used in the mud for their construction." In the warm sunlit days of autumn these ovens are surrounded by color—the sky is intense blue, great strings of brilliant peppers are scarlet against golden adobe walls.

CREED OF THE DESERT

By JUNE LEMERT PAXTON
Yucca Valley, California

The sun beats down on an ancient lake,
Blue and green in the glare;
But the water and trees can never appease,
For 'tis a mirage shimmering there.



Volume 7 OCTOBER, 1944 Number 12

COVER	INDIAN OVENS, Isleta Pueblo, New Mexico. Photograph by E. F. Hudson, Bakersfield, California.
BOOKS	Gold Rush, and other Southwest reviews 2
CLOSE-UPS	Notes on Desert features and their writers 3
POETRY	Land That God Forgot, and other poems 4
MINING	Nuggets to Bullets at Castle Dome 5
BOTANY	Golden Rabbitbrush is Indian Chewing-gum By MARY BEAL 10
TRAVELOG	Cave Where Brujas Dwell By MARION ESTERGREEN 11
DESERT QUIZ	A test of your desert knowledge 14
ART OF LIVING	Desert Refuge, by MARSHAL SOUTH 15
PICTORIAL	Desert Wonderlands By JOHN LINDSEY BLACKFORD 17
MINING	Current news briefs 22
NEWS	Here and There on the Desert 23
HOBBY	Gems and Minerals —Edited by ARTHUR L. EATON 27
CRAFTS	Amateur Gem Cutter, by LELANDE QUICK . . . 30
LETTERS	Comment from Desert readers 31
COMMENT	Sahara Diary, by RANDALL HENDERSON 32
TRIBUTE	To Rand, by RANDALL HENDERSON 35
INDEX	Index to Volume Seven, Desert Magazine 36

The Desert Magazine is published monthly by the Desert Publishing Company, 636 State Street, El Centro, California. Entered as second class matter October 11, 1937, at the post office at El Centro, California, under the Act of March 3, 1879. Title registered No. 358865 in U. S. Patent Office, and contents copyrighted 1944 by the Desert Publishing Company. Permission to reproduce contents must be secured from the editor in writing.

RANDALL HENDERSON, Editor. LUCILE HARRIS, Associate Editor.
BESS STACY, Business Manager. — EVONNE HENDERSON, Circulation Manager.

Unsolicited manuscripts and photographs submitted cannot be returned or acknowledged unless full return postage is enclosed. Desert Magazine assumes no responsibility for damage or loss of manuscripts or photographs although due care will be exercised. Subscribers should send notice of change of address by the first of the month preceding issue. If address is uncertain by that date, notify circulation department to hold copies.

SUBSCRIPTION RATES

One year \$2.50
Canadian subscriptions 25c extra, foreign 50c extra.

Subscriptions to Army personnel outside U.S.A. must be mailed in conformity with P.O.D. Order No. 19687.

Address correspondence to Desert Magazine, 636 State St., El Centro, California.

WALK SLOWLY

By CONSTANCE WALKER
Los Angeles, California

Walk slowly when you reach the desert's rim
In friendly greeting to the noble band
Of Joshuas on the iridescent strand,
For sudden brilliance may seem strangely grim.
A million stars have let their splinters limn
The unity of earth and sky—in sand;
And one may touch a warm and kindly hand
As golden trumpets clearly herald Him.

Be still—be still—no longer rushed and tense
And let the gleaming hush at last relate
The triumph of a spirit filled with peace!
For evil has no power or eloquence
To conquer poise the silence can translate
Where those who trusted God have found
surcease.

DESERT LAND

By HELEN L. VOGEL
San Diego, California

And all about the everlasting hills
Rise, to fold in with protecting arms
The undulating sands, the washes, fills,
The ranches nesting deep within the palms.

All moon-washed like a meteor's afterglow,
Is the aura on the desert's brow,
To rim each silent shape or thing below
With light suffused that Night can but endow.

That space of quiet animates, at length,
Night, so peace becomes a living force,
And flows through earth and man in hidden
strength,
An inflow deeper than the ocean's course.

And when at dawn, the everlasting hills
Cast aside their purple robes for rose,
The Day unlocks her treasure chest and spills
Her gems, and every hour wears regal clothes.

TAKE ME BACK TO THE PANAMINTS

By MARCUS Z. LYTLE
San Diego, California

Take me back to the Panamints
Where the world is desert and sky!
Lay me under a piñon bough,
Leave me alone, to die!

Take me back to the sagebrush plain
That shawls old Telescope Peak,
Where the silence is vast as the spread of space
With only the wind to speak!

Leave me here in the umbered rock
That sentinels Emigrant Pass,
Where the Panamint daisies tongue the snow
High over a salt morass!

Take me back to the Panamints
Ere I lose the dimming trail!
Turn my eyes to the rising moon,
My ears to the desert gale!

SAND DUNES AND SAGE

By LELA M. WILLHITE
Fresno, California

I would never ask for more than this:
—or care how fleetly time goes by—
The low-crooning winds that deserts kiss
and pale mauve tones of the western sky.

No one heart could forever hold
all of this beauty for its own
While gaunt mountains loom in serrate mould
as giant breakers that the ocean's thrown,

And wind tossed dunes all alined
in deep shadowed tawny curves
Where its vast floors of sagebrush wind
beyond the sand dunes' swerves.

Land That God Forgot

By Q. D. SPIVENS
Banning, California

Land of the starlit diadem,
Low hanging gems afire,
Lighting the path of hope
Leading to heart's desire.

Land of down drifting moon glow
Lighting the darkest nook,
Changing by limn of silver
The land that God forsook.

Land of Cibola's legend,
Hoarder of Golden Fleece,
Land of the gift of silence,
Place of eternal peace.

Land of healing sunshine,
Giver of health and ruth,
Haven for humble and lowly,
Abode of simple truth.

Land of surcease of sorrow,
Healer of blighted pride,
Land for the sorely stricken,
Refuge whatever betide.

Land for a new beginning,
Freedom in humble cot,
Home for the disenchanting—
The desert—"that God forgot."

WILLING BONDAGE

By MARION ESTERGREEN
Albuquerque, New Mexico

The desert is my only home,
Vast ocean waves of sand
Stretch endlessly; where lone winds roam
The stately yuccas stand.

The desert weaves its magic spell
Around the turbulent heart,
Ill thoughts die and all is well.
I feel new rapture start.

Where gusts of cleansing desert air
Purify the multitude
It holds my heart a captive here
Of peaceful solitude!

TO THE SALTON SEA

By EDWIN STEET
Whittier, California

Soft and blue the twilight glows,
Yuccas sway in the winds of night,
The sun rays dance where the grey trail shows
While little waves break in silvery lace
On lonely shore, by silent waste
A sombre vigil keeping.

Beyond are mountains white and cold,
The plan of the ages their secrets hold,
The slopes in purple shadows lie
While above are peaks both bold and high.
The peace of the stars drifts down from above
Soft and tender as the Salton Sea
Whispering a note of mystery.

Oh, wide spread shimmering sea
With shore line dim and low,
Thou art a Mecca in a sandy stretch
Where beauteous verbenas grow
Draped in wondrous tintings
At dawn and set of sun,
With a spectral moon hanging low in the sky
To light it when day is done.

DESERT DICTATOR

By IRENE BRUCE
Reno, Nevada

Only the sun is a dictator here:
With wind he orders release
From bartering creed and trespassing fear,
And the sands in return build peace.

DESERT NIGHT

By CHESNEY W. CARVER
San Marino, California

Come, walk with me on a desert road at night.
The sage is sweet, slight mystic noises speak.
And when it's dark, the Milky Way unfolds
A lighted path across the sparkling sky.

Some far off sound may reach the listening ear—
The pulsing rhythm of a distant heavy train,
Or the weird polyphony of a single lean
coyote—
But over all, a soothing stillness reigns.

In deep content, unharried by the throngs
That jostle thru the market place and crowd
The thoroughfares of eager, restless men,
Let's humbly walk and breathe the fragrant
air.

CACTUS BLOOM

By GEORGE SCOTT GLEASON
Flagstaff, Arizona

He who has not beheld its scarlet
Adorning the sand-swept floor,
Nor felt the sting, sharp, oh sharp of thorn
Knows but naught of desert lore.

Scarlet! Oh beautiful scarlet!
He who has not seen its glow,
Much that the desert holds has not been his,
He has missed too much of beauty, I know.

DESERT NIGHT

By MABEL WILTON
Los Angeles, California

Night, a wild black desert steed,
Descends from lofty heights
To gallop madly o'er the desert land
Until the first pink fingers
Of a desert dawn
Reach out to touch him—
Then he is gone.

PROVIDENCE

By FRANCES HOPKINS
Newark, New Jersey

Men have cursed
The secretive desert
In their thirst,
Had they but known,
Their succor stood
In cacti, barrier-grown.

DON'T TREAD ON ME!

By MRS. J. C. DAVIS
San Bernardino, California

Coiled into a living spring
For the lightning stroke he makes,
Swifter than a lightning flash,
Roused and heady, he awakes!
How the sound reverberant
Of his whirring castanets
Pales the cheek and sends the heart
Beating to the time he sets!
All the air is redolent,
Odorous, as of muscat bloom—
Or of faded mignonette
In a closely shuttered room.
Slowly, now his coils relax.
Slowly, but without a pause;
Hasting not and resting not—
Thus His Majesty withdraws!
Orderly his slow retreat
To the long roll's sonorous sound;
Muffled now, his war drum's beat,
Ceaseless, comes from underground.
Sound to bate the bravest breath;
Sound that might the dead awake;
Music for the Dance of Death!
Tocsin of the Rattlesnake!

George and Kenneth Holmes are gold miners—but now they're mining lead. A few years ago they would have laughed if you had mentioned lead to them—but that was before Pearl Harbor. Today, at the long-deserted mining camp in the Castle Domes of western Arizona, they have accomplished a conversion from the mining of gold nuggets to lead for bullets. The jangling sounds issuing from the shafts, the groaning of trucks hauling the ore to the mill on the Gila, are like spectral sounds, for since the days following World War I, Castle Dome had been a ghost mining camp . . . not quite a ghost camp. For Eliza de Luce stayed on through the years, her faith in its comeback never wavering. She became known as Queen of the Castle Dome, mistress of a realm of silent wilderness gilded by glorious sunrises, colored by cactus flowers and scented with sage. Now her conviction has been justified, as she sees the Holmes brothers bring war-vital lead from the depths of her holdings.

Nuggets to Bullets at Castle Dome

By JOHN W. HILTON
Photographs by Harlow Wellesley Jones

TEN YEARS ago, if you had suggested to George and Kenneth Holmes that someday they would be lead miners, they would have laughed and passed it off as one of those things that just couldn't happen.

The Holmes brothers are gold miners. Until recently, they always had been gold

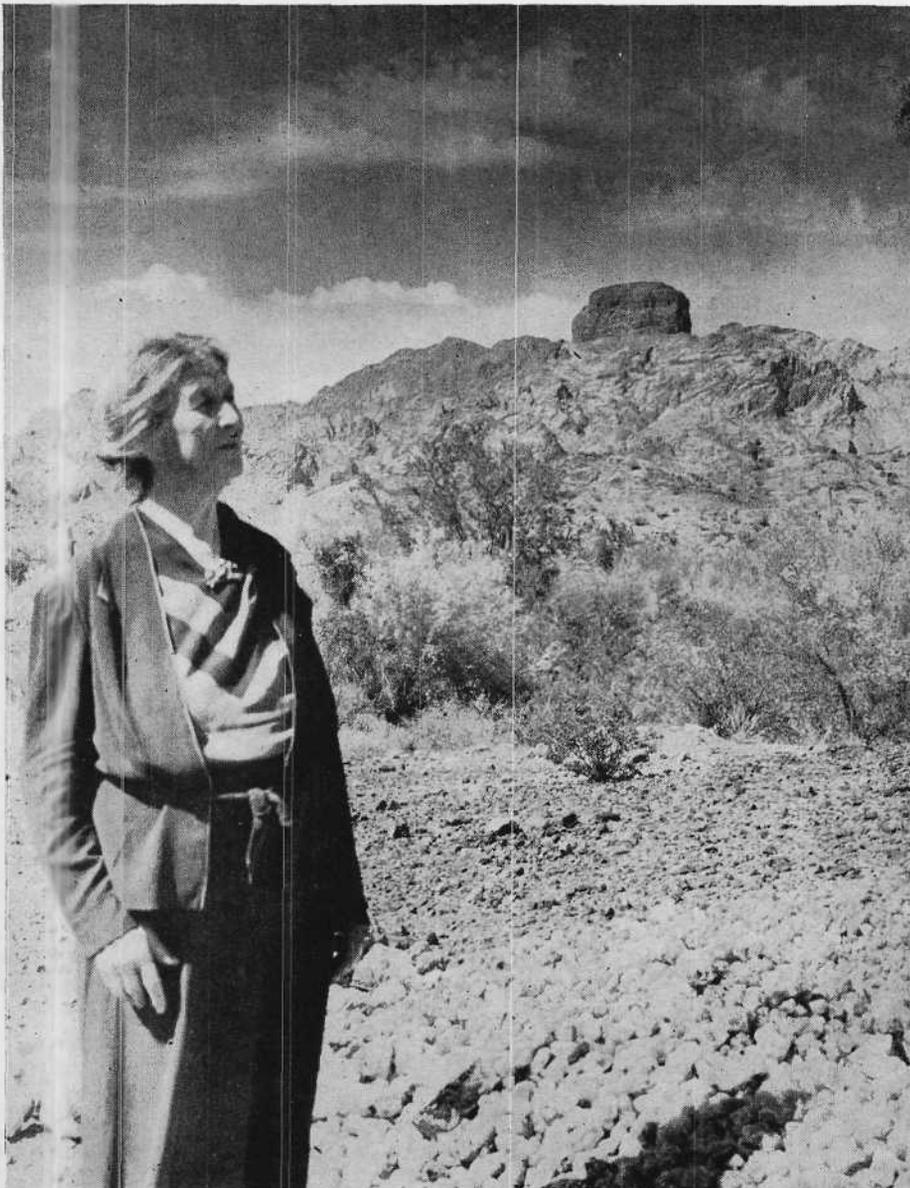
miners. Most folks will remember their rich strike at the Silver Queen mine (later called the Golden Queen) near Mojave, California, in 1933. It was one of the most important gold discoveries in United States in the present century. They sold out five months after the strike for \$3,170,000.

I remember talking with George Holmes soon after the famous bonanza had been uncovered. He told me they were selling out and I asked him what he would do with all the money.

"Oh, we're going to keep on prospecting," he said. "There's nothing like it in the world. It's 'clean money' when it comes fresh from the ground, and there are more mines yet to be found in the West than have been uncovered up to now." He smiled with that far away look that comes when he talks about prospecting. Mining is a grand game, he said, and the only thing to mine is gold and silver.

Following the sale of the Silver Queen in 1934, little was heard of the Holmes family for several years. In its first issue in November, 1937, *Desert Magazine* told about the customs mill Kenneth Holmes had installed on the banks of the Colorado river near Yuma, Arizona. At that time the Holmes were prospecting and developing some claims in the nearby Cargo Muchacho mountains, notably the Padre y Madre mine which had been discovered by Mexican prospectors many years before. The mill was a success but the mines hardly were paying their own way. Then one morning after a heavy cloudburst Kenneth was walking along the base of a hill near one of their diggings and saw a ledge the flash flood had uncovered. It was a rich find and from then on the mill hummed with high grade ore. Kenneth still smiles with satisfaction when he tells about the first \$20,000 brick of gold from the Padre y Madre.

Mrs. De Luce has two claims to fame. For many years she has been the "guardian goddess" and moving spirit of Castle Dome. When others left the mining camp she stayed on, her faith in its comeback unshaken. Her other claim to the spotlight is the achievement of her favorite grandson. Her treasured photo of him shows a small boy trying to stand on his head. That small boy is today's outstanding war correspondent Daniel De Luce.



"It was the prettiest gold I ever saw," he said, "and we kept pouring others like it until the war started."

Recently I spent a day with George Holmes. "Pearl Harbor changed a lot of things," he said. "Gold didn't seem so important after that. The metals needed for war were copper, zinc, tin, aluminum, lead, and others. We immediately made plans to transfer our operations to one of the strategic minerals."

And that is why the Holmes brothers went to Castle Dome, Arizona, and reopened the old lead mine there.

The first time my wife Eunice and I visited Castle Dome it was a ghost camp. Everywhere was evidence of intensive operation at some previous date. Old mines and dumps from the early Mexican diggings in this area dotted the hills. But since the period of World War I there had been little activity except the assessment work done by a few hopeful claim owners who still had faith in the revival of the old field. The old Mexican miners' shacks,

made of ocotillo stalks plastered with mud gradually were crumbling away, and the unpainted lean-tos of a previous generation of miners were empty. Their windows were gone and their sagging doors were open to the desert wind.

Mr. Hack lived on one side of the wash in the largest house in camp and made pets of the desert quail. On the other side lived Eliza de Luce, "Queen of Castle Dome." Old prospectors had mentioned her by that title long before my initial visit to Castle Dome when I learned her name.

Mrs. de Luce has lived at Castle Dome many years, under conditions that most people would regard as hardships. But she would not have traded her colorful domain in the Castle Domes for the finest home in the grandest city in the world. After all, she owned the sunrise that each morning gilded the great dome of the mountains overlooking her camp, the glorious flowers that crowned the giant saguaro each season, the desert birds which nest in large numbers in the shel-

tered coves and ravines of the serrated Castle Domes, the silhouette of needle-like Picacho peak against the sunset of the western skies. She never tired of telling us of the glories of her realm—and we agreed with her.

"And then," she said, "there is my mine. The camp will boom again someday, and I have the finest holdings in the district."

This first visit with Mrs. de Luce was years before World War II, and I tried not to show my skepticism when she began telling me about the wealth that remained to be discovered in the old mine tunnels beneath the surface. I had heard this sort of thing in every ghost town I ever had visited where one or more of the old timers remained. It will be her turn to smile when she reads this, for it was Mrs. de Luce's mine which the Holmes group leased. Lead is being hauled out in millions of pounds from five shafts on her old property. The longer I live on the desert the less I am inclined to discount the statements and the hopes of the old-timers.

On my most recent trip to Castle Dome I accompanied Colonel Senay and Major Church of the U. S. Army on their final trip of inspection to the army campsites which had been abandoned in the Yuma county area. I induced them to stop at Castle Dome, just for a fleeting glimpse of the old mining camp. On the well-graded Yuma-Quartzsite road we passed trucks hauling lead ore to the mill on the Gila river, and other trucks hauling water to the camp at Castle Dome.

The Holmes brothers were inclined to apologize for their housing and camp facilities. But they have made their men comfortable despite the obstacles of rationing, priorities, transportation and red tape. For lunch in the cook shack we had meat and beans and salad, all well prepared, and hot tortillas served by the smiling señoritas who run this part of the establishment. I could get along very well on such fare. George Holmes pointed out that they could not build for permanency because the government might decide at any time that the lead supply is adequate, and make it necessary to close down.

In the meantime the Castle Dome mines are making an important contribution to the national stock pile of lead. Last year they produced 3,000,000 pounds of the heavy metal, and this year the output has increased. Castle Dome is the fifth largest producer of lead in the state of Arizona—and who knows when it may move ahead to a higher place, for the "Holmes luck" seems to be holding out.

The Holmes brothers discuss their operations with extreme modesty, but listening to their story I had a feeling that luck is a very minor element in their success. At a depth of 140 feet they decided to go prospecting underground by running a cross-cut tunnel. Instead of making this

Art Warner, brother-in-law of the Holmes brothers and mine foreman, inspects a wheelbarrow of high grade. This ore is nearly pure galena and carbonates and it would be a waste of time to mill it.



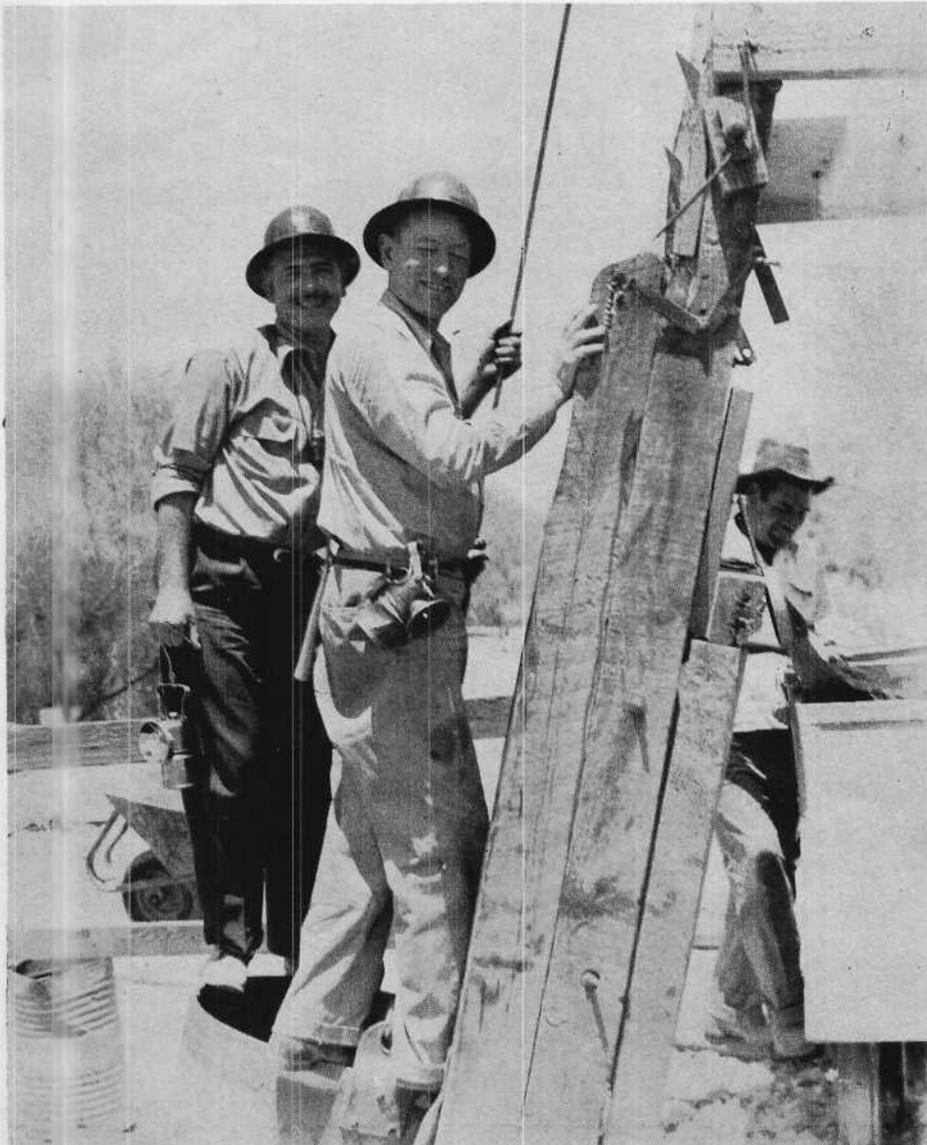
cross-cut in the direction of existing veins they ventured out in unproved ground.

I do not know whether it was a sound theory or a good hunch, but after a bore of 200 feet it led them to a virgin five-foot vein of high grade ore. Incidentally, this discovery will make the difference between mining bullets at a loss and at a profit. They knew when they started that their chances of making money in the lead mining business were very slim. They only hoped to get the job done and lose as little as possible. Many such mines are financed with government money. When the war ends suddenly the government, not the miners, will take the loss. But in this project the Holmes were spending their own money and taking their own chances. They have never sold stock to finance their mining operations, and they intend to adhere to that policy. They prefer to lose their own money if the venture fails, and take the winnings if there is a profit.

We wanted to see this virgin vein so gladly accepted an invitation to go underground. The hoist was a primitive affair—



One of the main shafts on the Arizona lead property.



a huge ore bucket lowered on a steel cable driven by a gasoline engine.

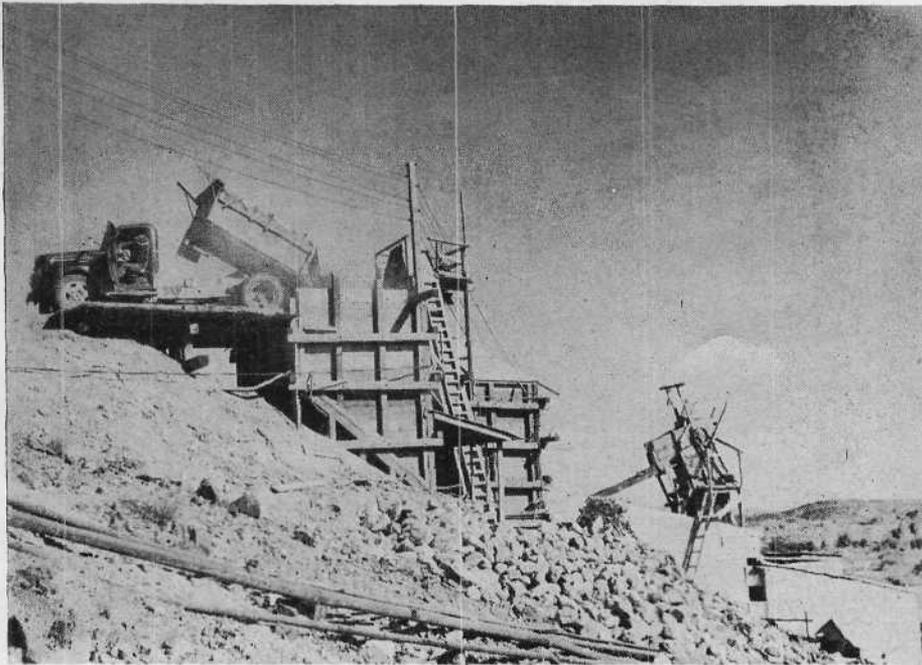
They gave us "hard hats" and carbide lamps and led us to the rim of the shaft. The bucket swung free over the top of the hole. The trick of going down in the mine was to reach out and get a firm grip on the cable and then pull oneself over the edge of the bucket as it swung to and fro over the shaft entrance. It would carry two passengers, one with his feet in the bucket and the other standing on the edge clinging to the cable above.

George Holmes and Colonel Senay went down first. As they disappeared in the blackness below I recalled that only a few days before the colonel had told me he did not like going underground. He had taken a dislike to the experience during his days in the dugouts in France in World War I. But he was grinning as he dropped down the shaft, so I guess he had forgotten about his inhibitions against underground.

Major Church and I went down next. It wasn't an unpleasant trip after we got our balance on the bucket. The only mishap was when I smelled something burning, and discovered my pants were on fire. I was standing on the edge of the bucket and the major was so interested in everything that was going on he forgot for a moment there was a live flame on his carbide lamp. He was holding it against my leg.

Holmes took us along the drift in the original mine to the working face where

George Holmes and John Hilton ready to ride the bucket down the shaft. They are wearing "iron hats" provided for the occasion.



Another truckload of ore goes into the mill on the Gila river.

of this type of ore in a day. As the miners strip the ore from the walls of country rock on each side of the chamber, platforms are built to enable them to work higher and eventually to a point as near the surface as is safe. This system of mining rock from the bottom up is very efficient as gravity does part of the work.

Those of us who spend much of our time on the desert become so accustomed to blinding light that it seldom is a subject of conversation or concern, but after an hour or more in the depths of a mine with nothing but carbide lamps, the desert sunshine strikes one with an impact so dazzling as to be almost painful. When our eyes became adjusted, Arthur Warner, mine foreman, showed us his pile of high grade. Here, specimens of ore too rich to go through the mill were piled for separate shipment. Arthur is a brother-in-law of George and Kenneth and shares their pride in the new strike. I am ashamed to admit that when our hosts insisted, we took still more specimens from this glittering pile of rock, which in the sunlight

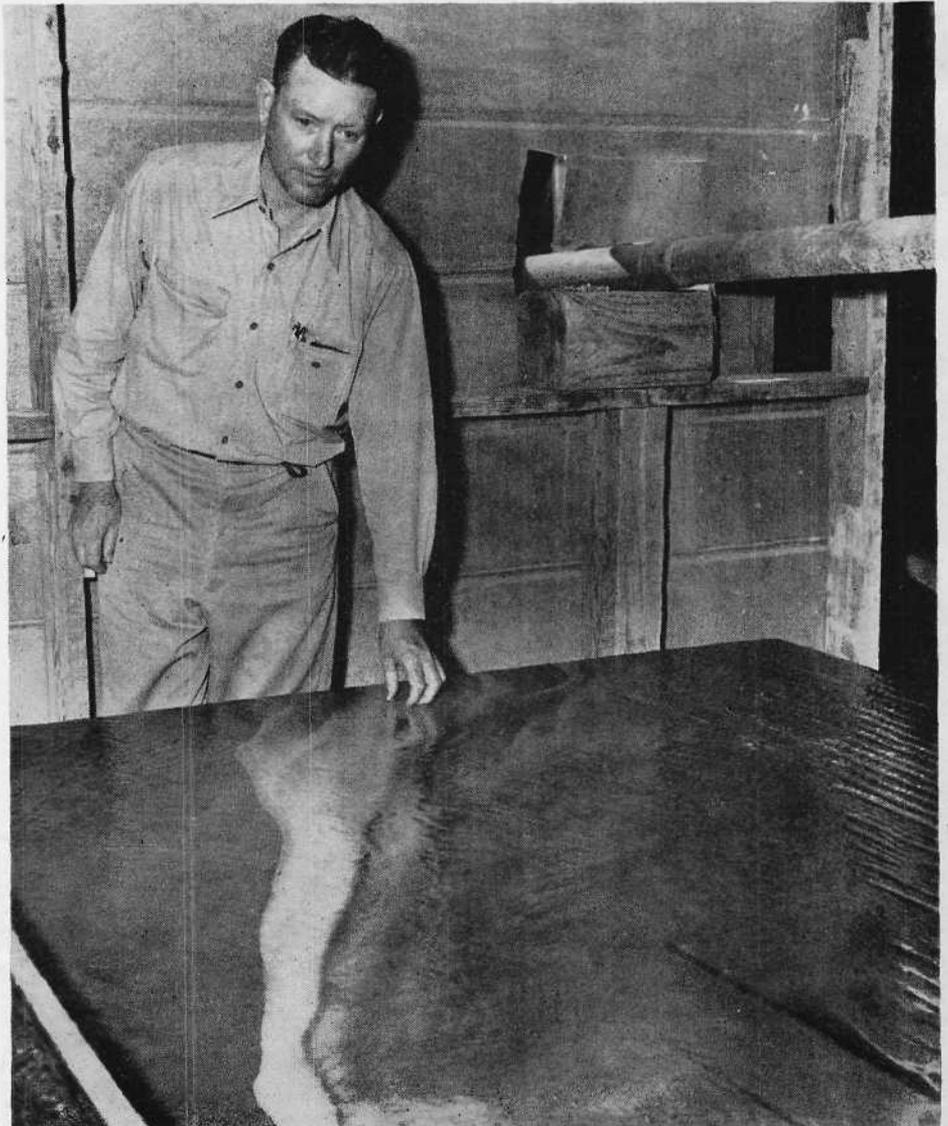
men were breaking down ore. Frankly, it was a little disappointing. There were no glittering cubes of galena—just grey-brown rock. However, we were assured that it was pay ore. This rock was being loaded by the muckers into a bucket similar to the one that brought us down the shaft, then pulled along some tracks to the shaft and hoisted to the surface where it was loaded in ore trucks for the mill.

Then we entered a cross-cut tunnel that comes in at right angles. Originally this had been an exploratory tunnel, and the rock ceiling was so low I was continually bumping my iron hat on its projections. Two hundred feet does not seem very far on the surface, especially on the desert, but in an underground tunnel chiseled out of solid rock it is quite a walk. At the end of the walk we emerged in a chamber where the new vein had been tapped. Here the picture that met our gaze was worth many times the inconvenience of such a trip. We were in a natural jewelry store that glittered in the light of our carbide lamps like something in a fairy tale. Short drifts had been started both ways along the course of the vein. It was a mineral collector's paradise and a miner's dream come true.

Masses of finely crystallized carbonates of lead (cerrusite and anglesite) formed a snowy background for nodules of silvery metallic galena (lead sulphide) which reflected our lights like dazzling jewels, with here and there crystal masses of fluorite and bright green silver stains to finish off the color display.

Kenneth Holmes demonstrated for us a gadget which is a sort of pneumatic rock

drill used to break the ore loose overhead, dropping it on the floor ready to be mucked out. With such a tool one good miner can stope out a tremendous tonnage



At the mill, ore is ground fine and separated by a series of "jig" tables. Here George Holmes inspects concentrates at the end of the last table.

seemed even more dazzling than the crystals we had seen below the surface.

At another shaft we watched ore being loaded on trucks by a small skip loader, used to reduce manpower. This equipment is utilized whenever practicable. As we were standing there I saw in a pile of ore what appeared to be a piece of rusted steel with crystals of galena and fluorite attached to one side. I showed it to George.

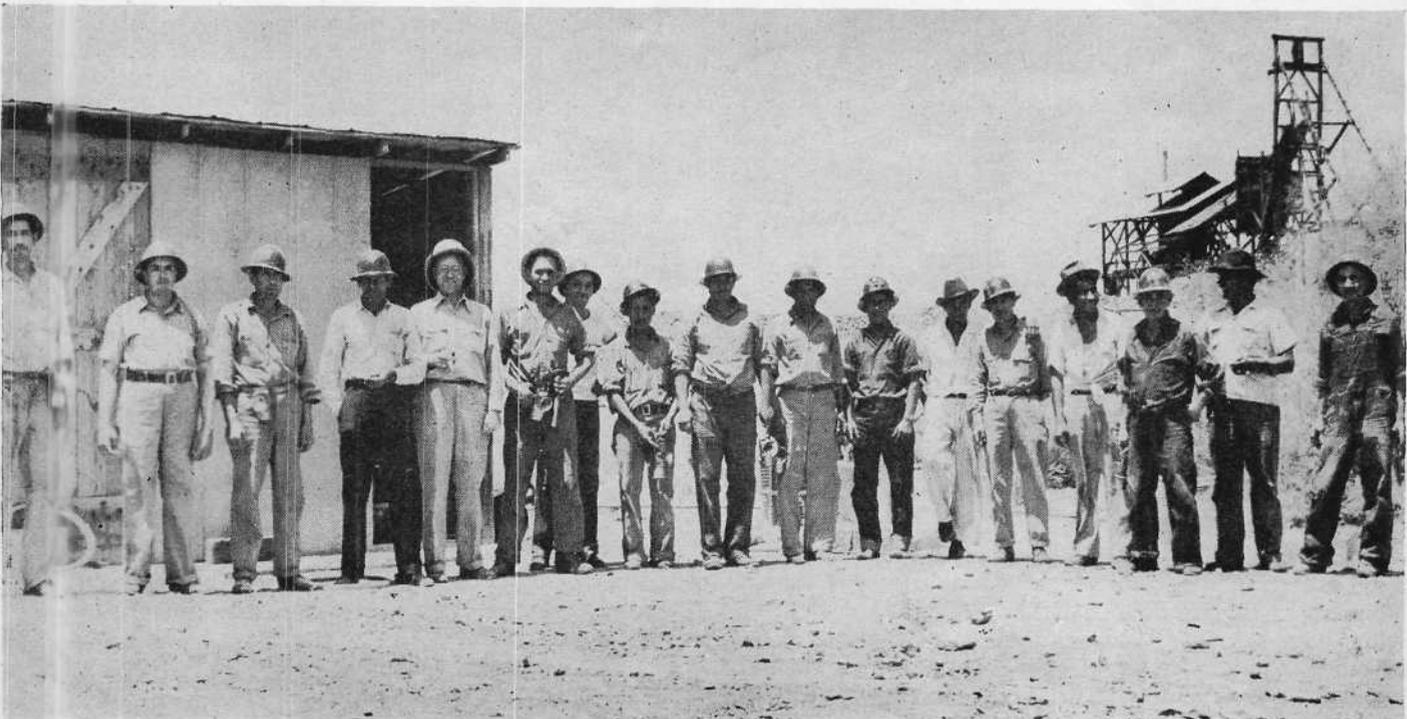
He explained that it was an old mining wedge used in the mines at Castle Dome in the days before dynamite was available. Holmes' men have been cleaning out some of the old shafts, obtaining ore once discarded because it was too low grade to be recovered by the crude methods then in use. In this old rubble several relics of the early mining days have been recovered. In addition to the old wedges they have found ancient cowhide buckets, old jugs and bottles with the makers' names and dates blown in, and enough tools to set up quite a museum of antiquated mining equipment. One of the items is a newspaper dated October 27, 1873.

As the ore is taken out it is hauled to a mill located on the Gila river to the south. This mill handles 100 tons of rock daily, and Kenneth is as proud of his high percentage of recovery, as is George of the way he keeps the ore rolling out of the mine shafts.

Those sacks of drab colored concentrates, however, do not fully take the place of the glittering gold bricks which the Holmes brothers are accustomed to extracting from the ore they mine. These men have gold in their blood, and when the war clouds break away they will be back with their first love—mining precious metal.



In this part of the shaft, ore is being "pulled" from a chute which leads to a stope above. When the bucket is filled, it is wheeled out to the main shaft where it is drawn to the surface.



These are some of the crewmen of the Arizona Lead company at Castle Dome.

Golden Rabbitbrush is Indian Chewing-gum

By MARY BEAL

IF YOU have seen Goldenrod's tossing yellow plumes flood the autumn weeks with lavish color, Goldenrod and autumn always are linked together in your thoughts. On the desert there are cousins of Goldenrod that play a like part, often much more spectacular because of their amazing abundance. These are the Rabbitbrushes, sometimes called Golden Bush, which is the literal meaning of its scientific name, *Chrysothamnus*, but Rabbitbrush has been recognized for many years as the common name both by botanists and non-botanists.

Vast expanses of arid gravelly plains and mesas of the Mojave desert and the Great Basin area of Nevada and Utah are dominated by the bright gold of Rabbitbrush in countless numbers. One of the Sunflower family's most prominent western members, these low rounded shrubs frequently form dense stands to the exclusion of nearly everything else. Most of the species are many-branched shrubs of the open plains and foothills, some of them favoring alkaline soils, varying from 2 to 5 feet in height and as broad or broader, growing from a deep taproot, usually several loose-barked trunks from a single base.

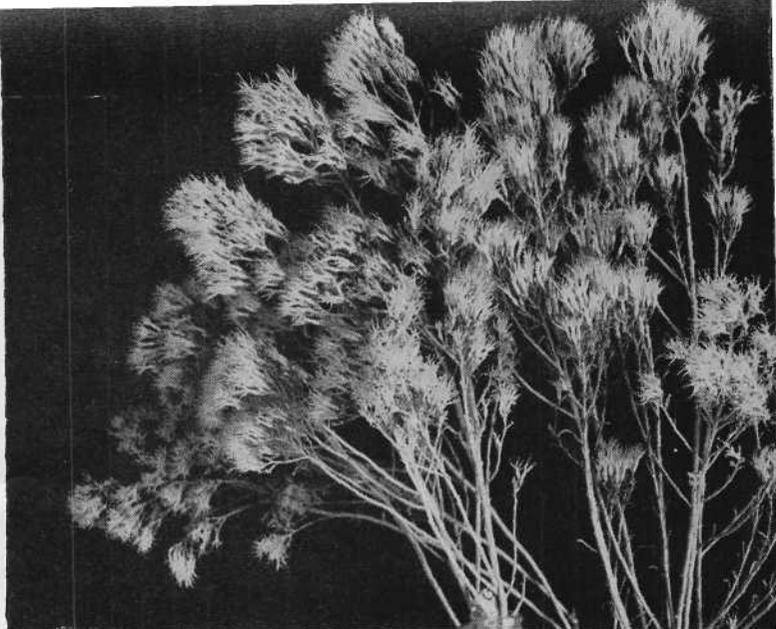
They are more or less strongly odorous, the stems clothed with a closely-packed felty covering of wooly hairs often infiltrated with a resinous substance. The leaves are narrow, and the heads of small, tubular, rayless flowers are assembled in showy clusters at the ends of the branches, completely covering the bush with a brilliant mantle of gold throughout autumn, proving a magnet for bees and other insects.

Indians made a yellow dye from the boiled flowers and used the straight stems for arrows, wickerwork, and windbreaks about their garden patches. A decoction made from the twigs of one species was used as a remedy for coughs and chest pains. The Pahute Indians of Utah, Nevada and adjacent California evolved a chewing gum from the masticated wood and inner bark by chewing it slowly to a pulp and spitting out the refuse fibers until only a little mass of pure rubber was left. Some groups also formed balls with these wads of gum for youthful games.

This special Indian chewing gum brought attention to the presence of rubber in Rabbitbrush and led to investigation by University of California scientists. We are told the first samples of this rubber for scientific study were chewed out of Rabbitbrush by Indians of Benton, California, in 1918. Twenty-five pounds of it were produced by human jaws! Chrysil is the name adopted for this particular rubber. It is not a latex, which comes from a milky sap, but it is high grade and vulcanizes readily, ranking next to rubber from Brazil and the Malay Peninsula. To extract chrysil the brush must be cut and crushed and then ground fine enough to separate the rubber particles from the mass of fibers by flotation. Since the commonest species happens to be the one with a feasible rubber content, the name Rubber Rabbitbrush has been suggested as appropriate for our featured species,

Chrysothamnus nauseosus

This very complex species has been subdivided into 22 recognized varieties which can be separated into the grey forms and the green forms, according to the color of matted wooly hairs felting the herbage. All forms have a stout, woody, shreddy-barked base and numerous branches which produce annually a multitude of slender, erect, flexile twigs, each ending in a rounding cyme of small golden flowers, splendidly in evidence from August to November. Of the grey-felted varieties,



Despite the name that botanists gave it, Rubber Rabbitbrush has a pleasing aromatic fragrance, suggestive of tropical fruits.

gnaphalodes is the common one on gravelly or sandy mesas, benches, and slopes of the Mojave desert, adjacent Inyo and Mono counties, western Nevada and northern Arizona. The very many slender young twigs are tough and pliable, with scanty foliage, the very narrow leaves an inch or less long and often recurved, falling early. The herbage has a pleasing aromatic fragrance, suggestive of tropical fruits. The grey forms are more apt to be scattered about than the green ones but this variety often forms belts of considerable extent, perhaps the largest area being one in the western Mojave desert 30 miles long by 2 miles wide.

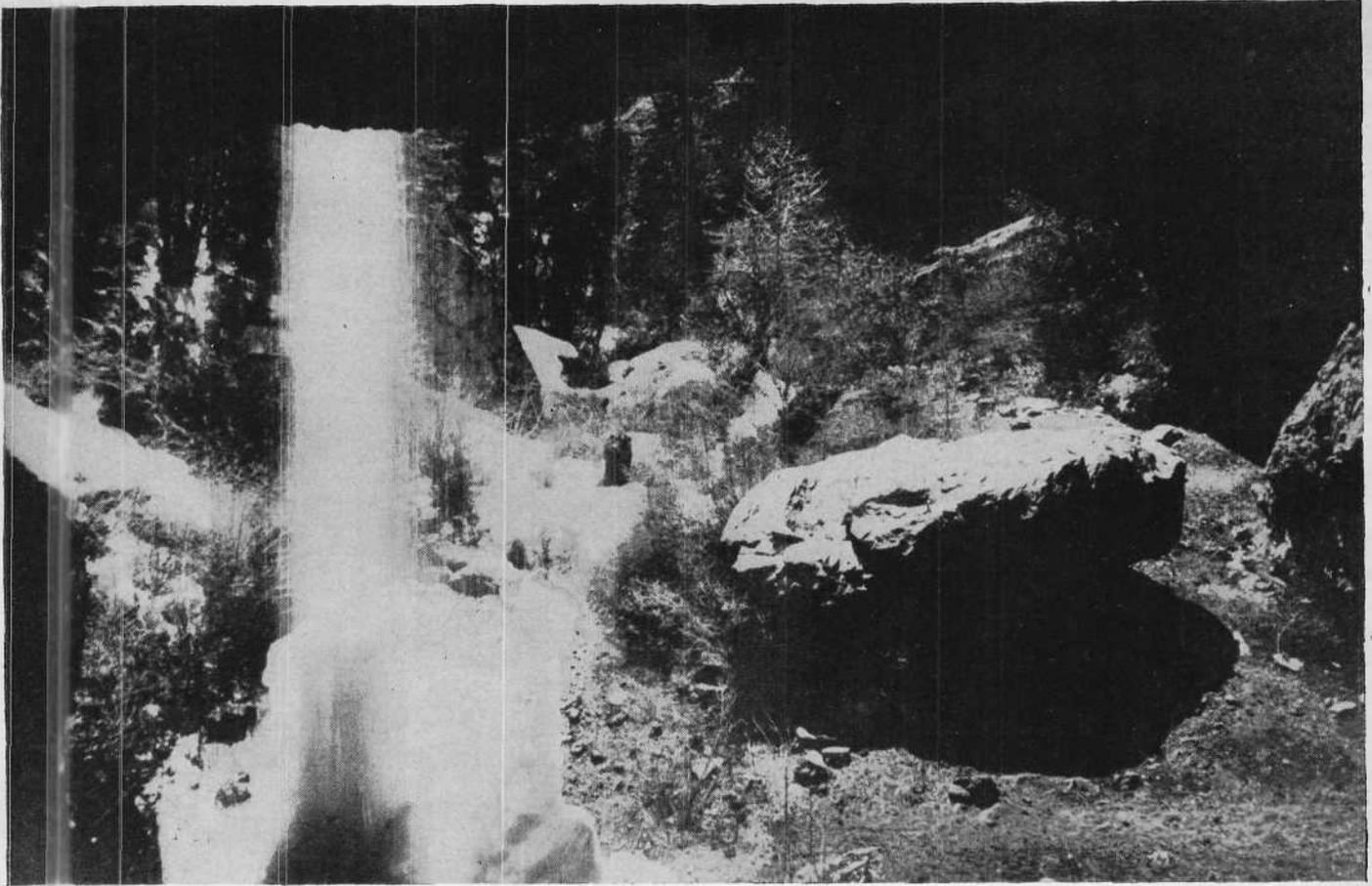
The variety *speciosus*, densely leafy to the summit of the grey or greenish-white twigs, is especially handsome because of the amazing abundance of golden-yellow flowers, the corollas longer and the round-topped cyme rather loose. The widely-linear stiff leaves are up to 2½ inches long. The pale grey coating of matted wool is partly deciduous, the leaves then becoming greenish. You'll find it in eastern California, western Nevada and Arizona but not in great abundance.

Variety *consimilis* is the green form common on alkaline flats of the Great Basin, extending from Utah and Nevada to California and well down into Arizona and New Mexico. The slender erect twigs are very leafy, the thread-like leaves an inch or two long and somewhat resinous, the compact felty covering of the stems yellowish-green. The congested flower clusters are pyramidal or cylindrical, blooming from July to November.

A robust green variety is *viridulus*, the rather stout, rigid stems densely felted with yellowish-green, and leafy to the top, the narrow leaves green but slightly hairy on both sides, the herbage having a heavy disagreeable odor. The involucre is hairless but sticky with a resinous exudation. The pyramidal or globose cyme is densely crowded, the corollas with noticeably long, narrow, spreading lobes. It grows in western Nevada and the Mono and Inyo county deserts of California.

Another very leafy robust variety is *graveolens*, the straight erect twigs yellowish-green to nearly white, their matted felt compact and smooth, the leaves broadly linear, the flower heads crowded into flat-topped or rounding cymes. It is found in the Death Valley region and wide adjoining areas, from Nevada and Utah to New Mexico, often appearing in dense extensive stands.

Variety *mohavensis* inhabits well-drained soil not obviously alkaline, from the west side of Owens Valley, through western Mojave desert to the desert slopes of the San Bernardino mountains. Its green-felted, wand-like branches often nearly leafless and rush-like, the few leaves thread-like, the flower clusters congested, rounded or somewhat elongated. Quite common in Joshua Tree national monument.



View from inside Lower Cave, sometimes called Ceremonial Cave from Taos Indian legend of ancient human sacrifices offered before the entrance. U. S. Forest Service photo, courtesy Paul Albright.

Cave Where Brujas Dwell

When Marion Estergreen asked Taoseños about going to some caves which she had heard were about twelve miles north of town, most of the answers were indefinite, some evasive, others warning. Brujas, they said, haunted the lower cave. By day they assumed the shape of rabbits, but at nightfall the spirits roamed the cave area, and no sensible person would go near. Besides, there were dark legends of human sacrifices on the great boulder before the granite entrance. As to the upper cave, they were even more dubious. As one old-timer put it, "There jest ain't none, and don't let nobody kid ya." But not being among the "sensible ones," Marion went anyway—to the haunted cave and to the cave that didn't exist!

By MARION ESTERGREEN



"HOW FAR are these caves and falls from Taos?" I asked Bert Phillips, one of Taos' foremost artists. He was the only person I could find who had visited the caves.

"They are located about 12 miles from Taos by way of Arroyo Seco village," he replied. "I visited the lower cave last year . . . took two Pueblo Indian models with me. Had a hard time getting them to accompany me. You know the Taos Pueblo Indians believe the lower cave is haunted by *brujas*—spirits or witches that take the form of rabbits by day, and roam that area unre-

Señor Martinez the adobe maker, and companions, in wagon which took the Estergreen party to the cave area. View near Arroyo Seco village in Sangre de Cristo mountains. Photo by L. Pascual Martinez, Carson national forest ranger.

stricted by night. The Indians say the upper cave is not haunted. I have never been there."

The artist caught my expression of interest. "This canyon," he continued, "where the caves, cliffs and waterfalls are located is about two miles from the little village of Arroyo Seco at the foot of the Arroyo Seco range of mountains between Rio Hondo canyon and Arroyo Seco canyon. The cave canyon has no official name. Nor have the caves."

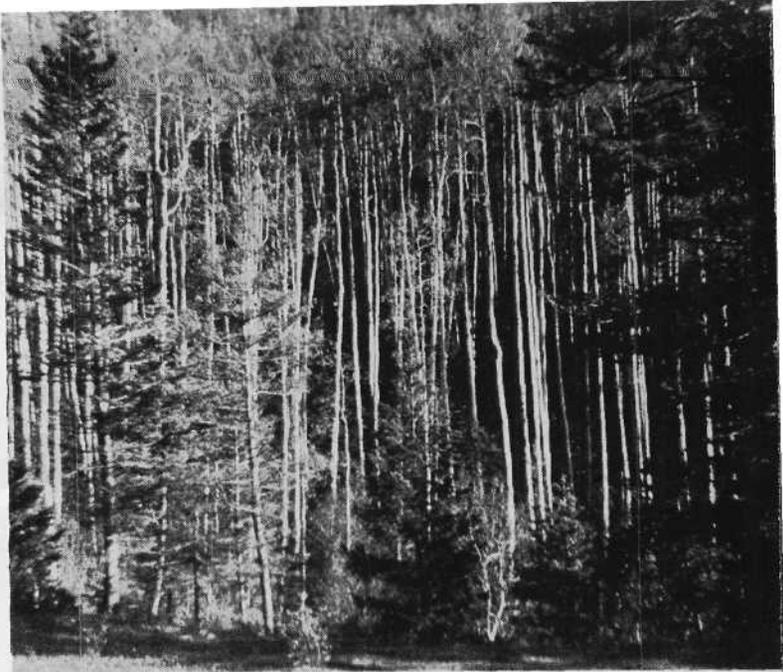
The next day Mary Lattimer, another artist friend, Brownie Moore and I drove by car to Arroyo Seco village. There we hired an old adobe maker, Nieves Martinez, and his young son to drive us to the caves in their wagon. The trail was far too rough to attempt by car.

"Is there really an upper cave?" I asked Señor Martinez, who answered in broken English, "Yes, my son say he have been there many time."

Few people in Taos ever had heard of these caves, and fewer had visited them. One old-timer had said, "Yep, I have heard tell of a haunted cave in them mountains. I ain't never been there. And as fer that there upper cave this here artist been telling you about, well, there jest ain't none, and don't let nobody kid ya on that score, lady." With that the old villager had let go a stream of tobacco juice between his grey-white beard without moving a muscle from his position against the lamp post.

The breeze was freighted with the pungent perfume of juniper and piñon which, as we rode higher, mingled with the good earthy smell of horses as they sweated and tugged to carry their load up the hilly incline.

After two miles of this, which took us three quarters of an hour, the trail ended in a natural parking spot between two mountains with the deep unnamed canyon on our left. We were



*Shimmering green-white aspens grow thick in the Sangre de Cristos among the Ponderosa pines and Douglas firs.
Photo by the author.*

at the base of the Arroyo Seco range, part of the beautiful Sangre de Cristo mountains.

With the Martinez boy and his father as our guides, we scrambled over the hill, following the brink of the gorge about 300 feet. Then began the descent through the mass of oak underbrush into the canyon of the caves.

We already could see the tall, grey lava-like cliffs towering above the tangle of Ponderosa pine and Douglas fir trees. A thin ribbon of water fell over the trough-like cliffs into a pool at the entrance below the large, yawning cave. On closer examination the cliffs which housed the cave were not lava rock, but grey granite, cut and carved by the elements for many centuries. A huge lone boulder stood by the entrance of the deserted looking cave. So this was Sacrificial Rock of which the Indian legends whisper tales of human sacrifices!

Legends, Indian born, sprang to mind. In ancient days, so the stories go, during pagan ceremonies of warring tribes who came to steal and plunder from the peaceable Taos Pueblos, human sacrifices were made on this boulder. In this high walled canyon a group of Taos Indians tried to hide from their evil pursuers only to be found and put to death. The *bruja*s that roam this area are thought to be evil witches and must be avoided by all sensible Indians.

At that moment, although it was nearly 10:30 in the morning, the sun came up making a dramatic appearance, gleaming down from the crevical rock cliffs like a halo above a shrine. It shone on the group of green-white aspens shimmering among the fir and pine. An occasional pine, tall and stately, rose above shrubs of dwarf juniper and birch.

"Let's send the boy back for our lunch and pillows while we explore the cave," suggested Mary.

We entered the amphitheater-like cavern. The insistent hum of hurrying water droned in our ears. One interesting feature of the cave was a side cavern at one end which goes back about ten feet.

The main cave is 50 feet deep, 100 feet wide and about 70 feet high. Solid rock forms the walls and ceiling, but not the floor, which is of soft dirt. The cave was devoid of insect or vegetable life.

Mary had gone on to the side cavern while I stood and listened to the metallic click of the falls echo back and forth in the dark hollow cave.

Marion Estergreen back from the falls trip and ready to write her story. Photo by Leo Zilavy.



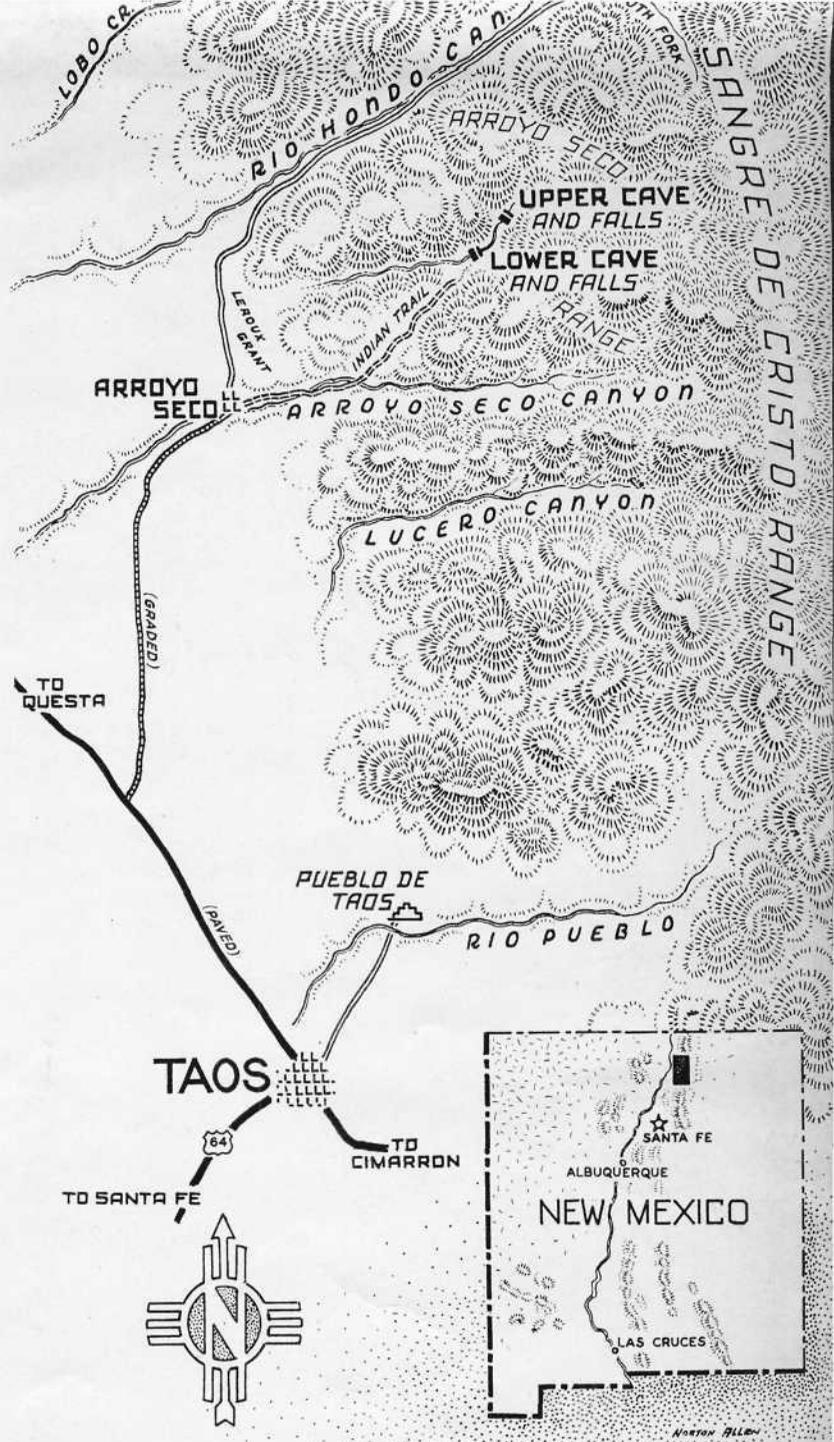
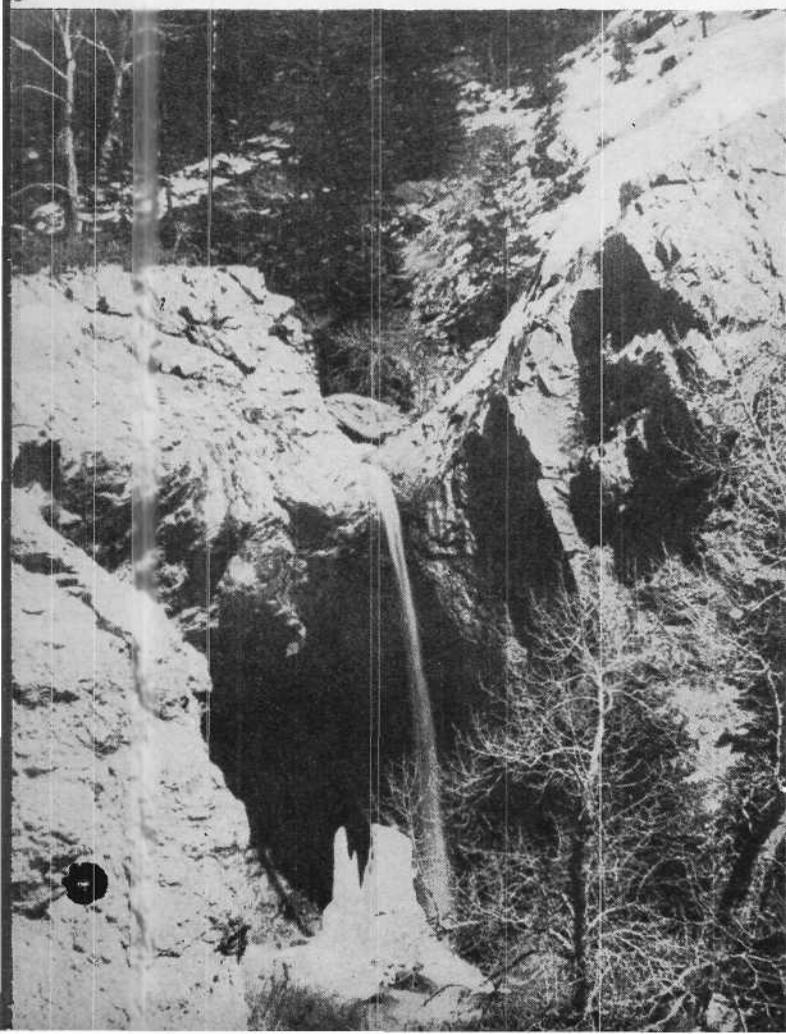
"Will you look at this!" Mary was pointing at something. I expected to feel a *bruja* swish past me. Then I laughed! When my eyes became accustomed to the darkness I saw a ladder made of small pine tree trunks. It had been placed to the roof of the rock cavern. Closer examination revealed a hole in the granite rock ceiling large enough to permit the passage of a very small person.

We asked the Martinez boy, who had just returned with the lunch and pillows, to climb to the cave room above. He called down through the opening that there was an enclosed, dark cavern *muy grande* (very large) with only the one opening. That description would have to suffice, for besides being too large to get through the opening, I was very eager to try to find the upper cave before lunch.

Mary wished to sketch the peculiar granite formation of the cliffs, and Brownie didn't like to hike. They stayed at the lower cave while Señor Martinez, his boy and I started on our three-fourths mile ascent to the upper cave. It was about 11 o'clock on that fine August morning. As the Martinez boy had been to the upper cave, he was our guide. I marveled at his agility as he scrambled over the rocks like a young mountain goat. He and his father would break the trail for me to follow through the tangle of fir trees and underbrush by the creek. I would have to crawl on my hands and knees in many places.

The slopes of the mountains where we detoured from the creek bed were so steep in places we had to pull ourselves by grasping protruding shrubs of juniper and oak, using rocks for footholds. Bluebells looking like blue stars in the rock crevices, grew more turquoise as we climbed higher. Tiny wild strawberries, far sweeter than any I ever had eaten, grew in grassy patches by the creek beds.

Remote cave and waterfall located in an unnamed canyon north of Taos, New Mexico. Unknown photographer mistakenly labeled it Lucero Falls, but they are not in Lucero Canyon. U. S. Forest Service photo, Albright album.



As the season advances, a gay succession of flowers carpet the mountain sides and wave in the high-altitude breeze—the red and yellow columbine, scarlet Indian paintbrush, the pink-throated blue pentstemon or the scarlet beard-tongue variety, red gilia, dainty purple verbenas, the rare star-shaped mentzelia which opens in the evening or when fooled by a sudden afternoon darkening of the sky for a thunderstorm, and a charming azure species of the gentian.

The saucy blue jay with his handsome crest dominates this region with his gay chatter.

We came to a steep cliff green with protruding dwarf juniper and flowering blue stargrass. But the earth was too loose for footholds, so we had to find another way to climb. I sat down on a boulder and listened to the gurgle of the water. I was tired. I felt that somehow we had missed the way to the upper cave, and was ready to give up when the boy appeared from around the bend with joyful yells, "It is there, it is there!" He pointed around the mountain.

Resuming our climb up the creek bed, pushing brush twigs from our faces and sidestepping rocks it was but a short distance to the brown-grey cliffs which housed the upper cave.

This spot held none of the eerie loneliness of the lower cave. The stillness was broken only by the soft sound of falling water as the slender lacy waterfall spun a silver thread across the deep, dark cave and fell into the flower-edged pool below.

Señor Martinez, his son and I rested on the grassy creek bank and looked down the steep canyon. It is a wild, untouched wilderness with vegetation so heavy and thick it is impossible to travel even by horseback. The rough canyon is adorned with red-stemmed dogwood, wild mock orange, snowberry shrubs, choke cherry bushes, fine-leaved birch, and the less decorative alder shrubs.

Taos Indians visit these upper falls on foot and use the water for medicinal purposes. They call it Medicine Water, as they call all good water.

Looking up we saw the summit of the steep water-polished granite cliffs. Here and there green shrubs flecked the rock's surface.

This upper cave, resting high in the walled cliffs, is deeper than the lower cave. The Martinez boy took matches—we had forgotten to bring a flashlight—and although he went far back, he couldn't find the end of the cave.

On the return trip I slid (with disastrous results to my breeches) down the mountain where we had so laboriously pulled ourselves up by shrubs. It took about half the time. We followed the stream too far down, coming to a deep precipice where the stream tumbled over with a bound. Far below on the gleaming boulder we saw a tiny figure basking in the sun.

"Hello there!" I yelled, and Mary answered, "Hello, yourself. Come on down. We're hungry."

"And so are we," I called back.

While Señor Martinez prepared to make coffee the boy gathered wood for a fire. Brownie and Mary spread the cloth and set forth our lunch of cold beef and ham sandwiches, fruit, cookies and a large bowl of potato salad.

The tantalizing aroma of mountain-cooked coffee occupied our minds for a time. Then I decided to learn what I could of the Spanish-American's superstition of the cave.

The señor smiled indulgently as he answered my question with, "My people have no belief about this cave. We call it Cascada, which means waterfall." He called my attention to the fact that the haunted cave and waterfalls weren't in Arroyo Seco or Lucero canyon, and asked me what the name is with my people for this canyon.

"I understand this canyon has no official name," I answered. "It is between Arroyo Seco canyon and Rio Hondo canyon, but certainly not in Lucero canyon as some wandering photographer erroneously labeled the pictures taken for Paul Albright's album."

Darkness comes early to this deep canyon, walled in by high cliffs. All too soon the sun was setting behind the mountains. Brownie packed the coffee pot in the lunch basket. Mary finished her sketch and suggested we had better start back as it looked like rain.

"Yes, I think we should. This is the time of year a cloudburst will wash you down the arroyo if you try to cross during a rain."

As the horses trotted down the mountain we could see all over the valley below us. We were in a vast bowl completely surrounded by mountains which now were obliterated by rain clouds in the west.

I couldn't help thinking of the war and this gas rationing. We could not visit these mountains again until it is over.

But the pinkish-lavender bee plants will grace the slopes, the columbine blossom, the yarrow, the vervain and the wild geranium will bloom again each year. The chattering blue jay will fly lightly to the highest pine branch where the thrush recently had sung his crystal welcome, and under the wild grass the red robin will search for worms. Whether I saw or heard, this will go on until I return again to the Sangre de Cristos—land of canyons and arroyos—where *brujas* dwell in Ceremonial Cave.

DESERT QUIZ . . .

Answers to more than one half of this month's quiz questions will be found in a recent issue of Desert Magazine. Several others will have been encountered sometime during the past year. Answers on page 28.

- 1—Famous art colony in northern New Mexico properly is called— Don Fernando de Taos.....
San Gerónimo de Taos..... Ranchos de Taos.....
- 2—Highest peak in the Henry mountains of Utah is—
Mt. Ellsworth..... Mt. Ellen..... Mt. Pennell.....
Mt. Hillers.....
- 3—Companion of Chas. F. Lumis on trips in Southwest and South America was— Adolph Bandelier.....
Edgar L. Hewett..... Joaquin Miller.....
Frederick W. Hodge.....
- 4—About the maximum number of eggs one would find in a Gambel quail's nest is— 6..... 12..... 22..... 28.....
- 5—Large reptile-like animals were characteristic of the—
Precambrian..... Paleozoic..... Permian.....
Mesozoic.....
- 6—Main evidence that prehistoric Indians of Arizona and Mexico traded with each other is—
Hieroglyphics..... Clay effigies.....
Shell money..... Copper bells.....
- 7—Irrigation has been known in Arizona for about—
75 years..... 500..... 1000..... 1900.....
- 8—President of United Indian Traders association, which handles large proportion of Southwest Indian handcraft, is— M. L. Woodard.....
John Wetherill..... Roman Hubbell.....
John Collier.....
- 9—Number of miles which have been explored in the connecting underground chambers of Carlsbad Caverns, New Mexico, is about— Six.....
16..... 32..... 64.....
- 10—Idar, Germany, is noted as a center of—Diamond cutting.....
Manufacture of precision instruments.....
Artificial coloring of gem stones.....
Watch making.....
- 11—Range between Panamint Valley and Death Valley is— Argus..... Amargosa.....
Funeral..... Panamint.....
- 12—Papago Indians of southern Arizona are of the same linguistic stock as the—Hopi..... Yuma.....
Apache.....
- 13—Albuquerque, New Mexico, was named for—
Indian chief..... Mythical figure.....
Spanish duke..... Pioneer founder.....
- 14—Navajo Indians call themselves—Navaho.....
Indios..... Diné..... Hohokam.....
- 15—Indians of Imperial Valley region were— Cocomah.....
Diegueño..... Kamia..... Chemehuevi.....
- 16—Sedimentary rock was made by— Solidification of molten material.....
Deposition of material by water.....
Processes acting on pre-existing rocks.....
- 17—The desert shrub Quailbrush is a member of the—
Buckthorn family..... Sunflower family.....
Buckwheat family..... Pigweed family.....
- 18—Mission San Xavier del Bac, in southern Arizona, was founded in— 1685..... 1700..... 1725..... 1768.....
- 19—Botanist who devised well known Plant Life Zone scale, to describe characteristic plant growth in various regions, was— C. Hart Merriam..... Philip A. Munz.....
Edmund Jaeger..... Willis L. Jepson.....
- 20—Best gem stone to use in hardness test for diamond is— Sapphire..... Quartz..... Flint..... Beryl.....

Victoria is growing fast. Along with her new braided hair-do, she is assuming added duties and responsibilities about the household of Yaquitepec on Ghost Mountain. She helps sort clay for pottery making. On twinkling feet she gathers dry sticks for the fuel baskets. She guards the water barrels from invading insects. She even is the self-appointed weather lookout for the rain-thirsty mountain top. But as a blow-pipe expert, her lusty lungs proved her undoing—and made Rudyard forget his chiv-dry.

Desert Refuge

By MARSHAL SOUTH

THE BIG ocotillo on the southwest slope of Ghost Mountain finally blew down, and a few days ago Rider and I went down to bring it home. For many months it had been slowly drying and getting more and more shaky in the winds. So when a last gale put an end to the drama, we went as quickly as possible in order to secure the wood before beetles and borers and all the other agents of decay could get ahead of us.

We like ocotillo wood for many reasons besides its excellent burning qualities. The thicker portions of the spiny wands, when peeled of their leathery armor of bark and spikes, make smooth white poles that are handy for a multitude of uses around a primitive establishment such as Yaquitepec. Also, when properly seasoned, the wood is tempting for carving purposes. It is not entirely satisfactory for this as it is a bit brittle and short grained, with an annoying habit of chipping off when the design calls for fine details. But it is nice to work with, nevertheless. And one can achieve quite satisfactory and ornamental bottle stoppers and knife handles and such nick-nacks from it. Rider and Rudyard, by means of boring and whittling, often make themselves whistles from the white wood—whistles which, as silence shatterers, are entirely too satisfactory.

It was quite a job lugging the fallen old monarch up over the tumbled boulders to a spot where we could divide it into sections for carrying. But the job was completed finally and all the good wood peeled and put up under the roof to season. The bark and spines and all the small sections went into the fuel baskets for immediate burning. Although dead ocotillos make marvelous fuel we have to be more careful in handling it than any other. The reason for this is that the spines are so distributed that no matter how small a fragment of broken stalk lies on the ground there always will be one or more spikes pointing upwards—like those devilish spiked iron devices which were used in early warfare for hindering the movements of infantry and cavalry. Yaquitepec is a barefoot establishment, and although our feet are toughened, the upturned ocotillo thorn is damaging. So ocotillo fuel always is burned first—and with scrupulous watchfulness that no fragment escape.

There are thorns AND thorns. Those of the much talked-about cholla—like a great many other things of exaggerated reputation—are probably the least dangerous. We don't worry about ordinary chollas. The staghorn, which is the kind most widely spread over Ghost Mountain, isn't half as bad as it is painted. The youngsters get spiked and pincushioned with them constantly—and yank the adhering sections from their feet by means of two stones, used pincer-wise, and go on as though nothing had happened. The silver cholla—Bigelovii—is different. That we do treat with respect. It has a nasty disposition. And if it doesn't actually *jump* at you, as it is fabled to do, it nevertheless is bad medicine. So we give it a wide berth. For-



Marshal South dragging a fallen ocotillo up the rocky slope of Ghost Mountain.

tunately those sections of Ghost Mountain which we range constantly are not over supplied with Bigelow's cholla.

The two types of spines which do call for constant watchfulness are those of the mescal (the agave) and the beavertail. Oddly enough these are at opposite ends of the thorn scale—those of the mescals being vicious, needle-sharp daggers from an inch and a half to two inches or more long, and those of the beavertail cactus being so small that one needs a magnifying glass to see them. If you run hard into the stiletto shaped weapons of the mescal, with any portion of your anatomy, you are in for trouble. The thorn, like a slender jade dagger, almost invariably breaks off deep in the wound in such a way that it often defies extraction.

On the other hand if you have an argument with the fuzzy brown spine fluff of a beavertail it may be hours, sometimes days, before you will get rid of the last of the intensely irritating, microscopic little stickers. The points of nearly all desert thorns seem to carry a poison particularly adapted to make punctured flesh ache. Perhaps, in this respect, the handsome Mojave yucca—the Spanish Bayonet—can claim highest honors. Yes, there are thorns AND thorns. But what true desert dweller would trade any one of them for fairest flowers or tenderest ferns of rain-drifted forests?

The cisterns are dropping lower and lower. Last season, just a few days before we returned to Yaquitepec from our year-long desert search, a heavy downpour passed over Ghost Mountain and we had hoped the anniversary of that shower would bring another. But so far we have been disappointed. There have been not even any promising showings of thunderstorm formations, despite the fact that Victoria faithfully stares off at the dark line of the horizon each night, looking for them. Several times fitful, distant flashes have brought her running to us with the breathless information that there was certain to "be a wain tonight" because "the distances are jus' full of lightling." But so far the lightning has been an empty promise.

A good many things now wait upon the rain. Walls and cistern building, as well as the replenishment of domestic water supply. Wool that needs washing before it can be carded and spun. A new garden frame. One acquires a high valuation of water when its supply is limited. It is true that our storage capacity steadily increases. But so also does our consumption of the precious fluid. As our little clan grows there are more and more demands upon the cisterns. And on summer days it is astonishing how quickly a big olla of water, swinging in the breeze to cool, can be emptied. Yes, we need rain.

Last night about midnight, I got up and went into the house to see how the pots were drying. Tanya had made a couple of large ones during the afternoon and had set them to harden on the inside table. There is always a thrilling uncertainty about the drying of handmade desert pottery. Clay is temperamental. Seemingly perfect ollas and bowls, fashioned with care, and a joy to behold when wet, on drying will develop mysterious

cracks which utterly ruin them. On the other hand a pot flung together in a hurry to serve some pressing need will astonish us by drying out as a perfect and flawless creation.

A brief inspection, by lantern light, of Tanya's handicraft convinced me that the drying process was not proceeding rapidly enough—there was danger ahead. So I carried the two jars outside and placed them in an angle of an unfinished wall where the free sweep of the desert wind would hasten their setting. The stars burned with crystal clearness. Through the broken thatch of the ramada the moon made patterns of ghostly light. Wind marched against the mountain with a steady roar, rocketing upward from the protecting edge of the cliff and hurtling past overhead with the rushing sound of an invisible torrent. Stray gusts of it, swooping downward, came charging around the house, slatting loose thatch and drawing weird music from an insecurely fastened sheet of roofing iron.

After I had settled the pots safely in their new position the mystery of the night held me. So, instead of returning to bed, I picked myself a nice comfortable vantage point upon the top of the outdoor work bench, squatting there, Indian fashion, in the moon-fretted shadow of the ramada, while the wind spirits trampled ceaselessly overhead and the moonlight wove blankets of jet and silver in the swaying branches of the junipers.

There is something about the feel of a moonlit desert night which calls to unfathomed depths within the heart; which stirs vague memories of long forgotten things. Small wonder that from desert lands and from their nomadic peoples, forced to solitude and the tending of flocks under sunlight and starlight, have come to us so much that is worth while. For it is by meditation that man increases his understanding. Times, and conditions of liberty and progress, have little to do with it. There have been as great minds and as great philosophers in all ages. Contentment, happiness and understanding come from within—not from one's surroundings.

Victoria's hair is long enough now to be easily braided. And a proud little miss she is with her new style of hairdressing. Busy and merry the whole day long, Victoria grows fast. She loves to work and always is hunting new duties. She gathers dry sticks among the bushes and rocks and trots tirelessly on twinkling feet to heap her loads in the fuel basket by the stove. One of her regular jobs is to guard the outside water barrel against bees whenever it has to be uncovered for filling ollas and house crocks.

Bees, both tame and wild, are water-thirsty in the summer desert. The tiniest opening serves as entrance to barrel or tank. Victoria's job is to stand by the barrel and whenever a bucketful is removed, to carefully shoo off the snooping bees and replace the cloth cover. Then, upon tiptoe, and with both little arms flung around the cloth to hold it down in the playful wind gusts, she stands guard until we return for the next bucket. Victoria is proud of this job. She usually sighs with regret when it is over and the cloth covers of the barrels have been securely tied down into place.

All the openings of water barrels and tanks on Ghost Mountain are cloth covered. No other scheme works. Ordinary lids will not serve. For here we have to make our containers tight not only against small animals, lizards and bees, but also against ants which can get through almost anything. A time saving trick for keeping a cloth securely bound down over a barrel top is to use one of those long coiled springs usually employed to pull screen doors shut, as a section of the tie cord. Then, when once you have the cord adjusted tight, you don't have to untie it each time. Simply stretch the spring a bit and slip it off. A stout rubber band cut from a section of old auto tube will serve equally well, but doesn't last long in the desert heat, as compared with a spring.

Last Sunday afternoon I dug out an old copy of the National Geographic magazine from the bookcase and read the youngsters an account of the excavations at the old Indian settlement of Pueblo Bonito in New Mexico. They are tremendously in-

terested in such things. Not only because their own desert existence approaches very closely the life led by the ancients, but also because on their recent long trek they became familiar with the type of country in which these old time Indian communities had their setting. So while the big scaly lizards waddled over the sun-scorched boulders and the heat waves danced across the distance of the thirsty lowlands, the three of them lay on a blanket beside me in the shade, listening with eager ears as the words on the printed page rolled back the sands and mystery from a chapter of desert life that was closed a thousand years ago.

To understand the story of ancient Pueblo Bonito, one must be familiar by personal experience with conditions which are similar. It was this knowledge which made my young audience so appreciative. They studied everything from a practical angle. All pictures were scrutinized with extreme care. The construction of ancient buildings and underground kivas was commented upon. Shapes and decorations of old pottery received careful attention.

Unhampered by modern fetishes or by the molds unconsciously imposed by association with mass thought, our youngsters have free rein to weigh and appraise the good points and the bad of both primitive and modern worlds. Armed also with an understanding of time, not as a make-believe span to be measured by clock-ticks or by the ephemeral duration of human life, but as a state which exists, they can better appreciate the significance of the rise and decay of communities and empires. It is life that counts, and the way it is lived, whether it be in Pueblo Bonito or at Yaquitepec. And as they roll out a bit of clay for a coil to build a pot with, or pound a mescal leaf to obtain a few strands of fiber, our youngsters get a great thrill out of the knowledge of that shadowy, but very real bond, which binds the present to the past.

Primitive methods, though, occasionally bring their moments of comedy. As yesterday when Rudyard, having decided that he would make a little wooden bowl by the process of burning out the center of a mesquite block by means of a coal and a blow-pipe, tried to teach the art to Victoria.

"You just blow it slightly," he said, handing her the little tube. "Just enough to keep the coal burning steadily. Blow just *slightly*—you understand."

So Victoria took the tube and blew "slightly." Victoria has a good pair of desert-grown lungs. The coal hopped from its charred hollow like a shot from a catapult and struck Rudyard squarely upon the tip of his nose. Rudyard has an explosive temper and there are times when he forgets chivalry. This was one of them. He made a pass at Victoria and hit her. And she promptly hit him back. They both are good scrappers. So for a time, before the "storm troopers" could be rushed to the spot, the uproar was considerable. Later on, however, when quiet had been restored and the two combatants had been sent outside with a piece of cake each, we heard them talking over the matter.

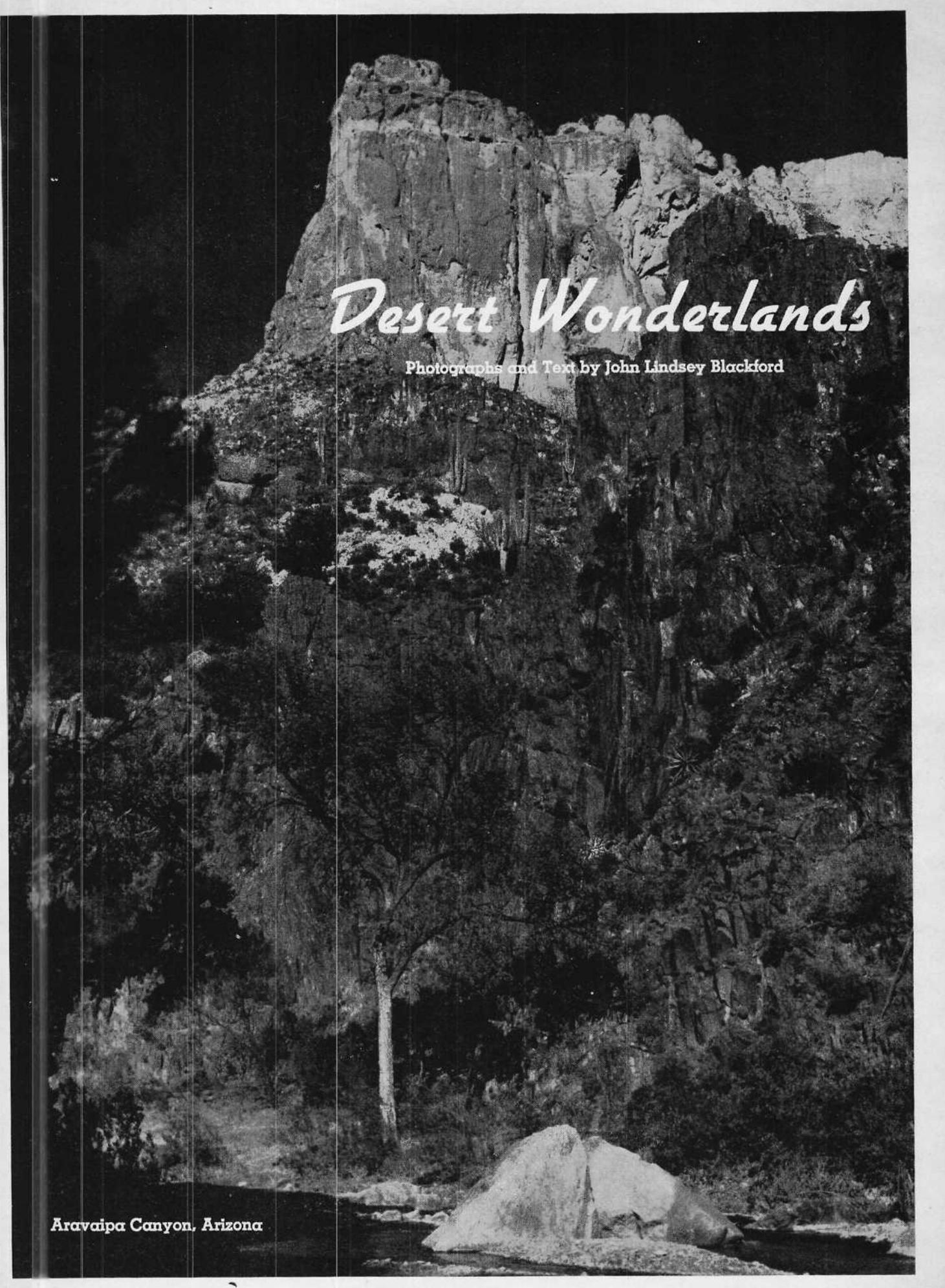
"You know I said you were jus' to blow it slightly," Rudyard explained, between munches.

"But I did, Ruggie, I did," Victoria protested. "I blowed it all the slightly I could. Really I couldn't have blowed it any more *slightlier*."

THUS LIVE

*Thus live: To give and not to gain,
To love—not hate;
To strive for Truth in every grain,
Nor fear your fate.
And face with courage, not despair,
Each little death
The soul encounters, as we fare
Life's endless path.*

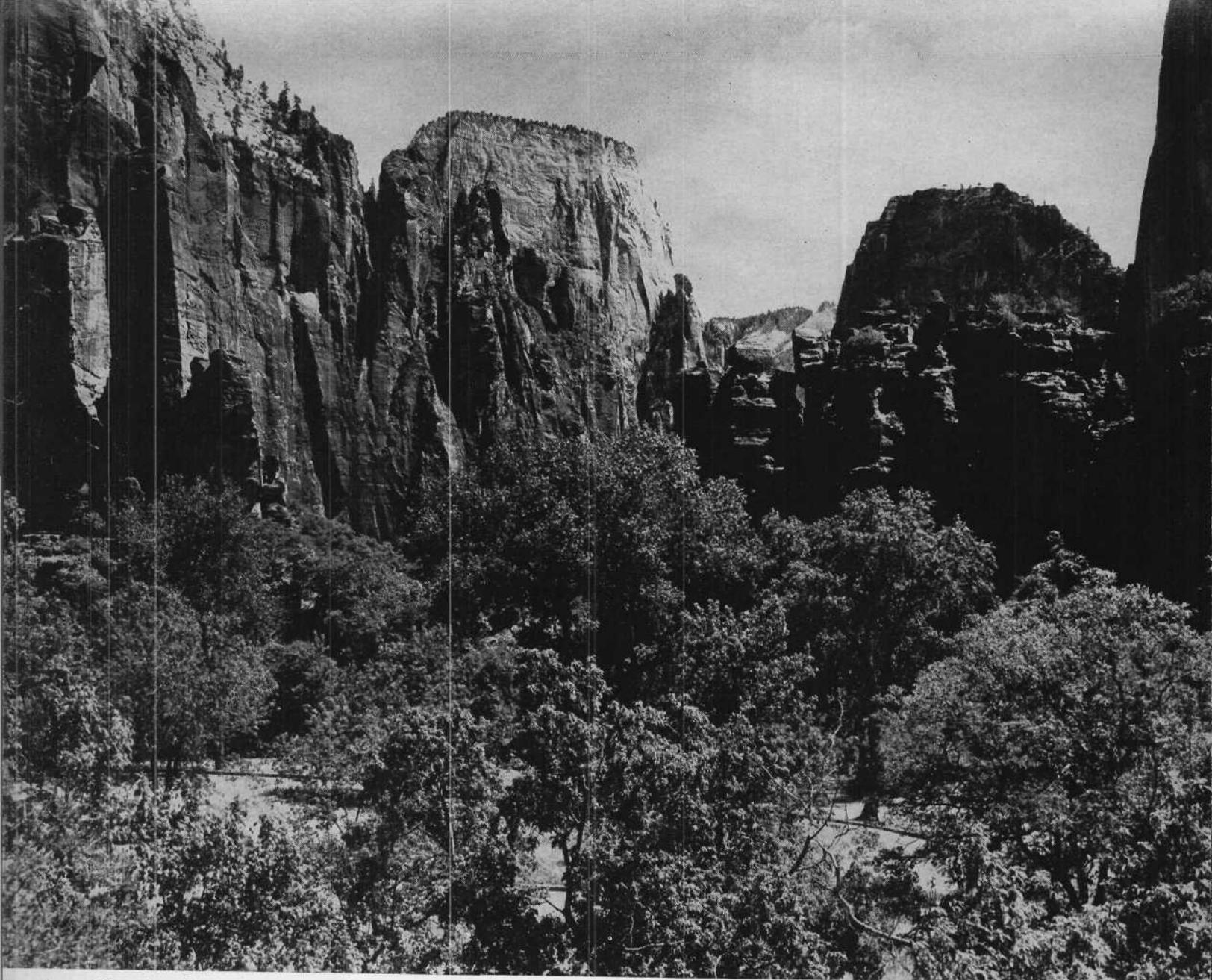
—Tanya South



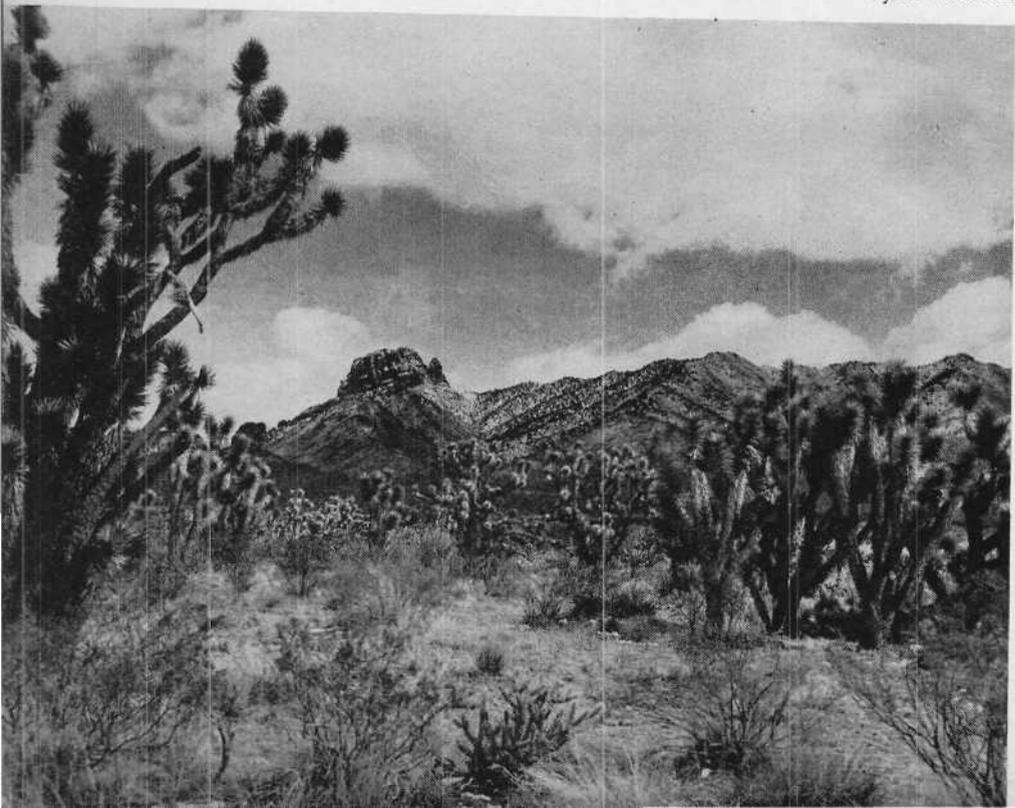
Desert Wonderlands

Photographs and Text by John Lindsey Blackford

Aravaipa Canyon, Arizona

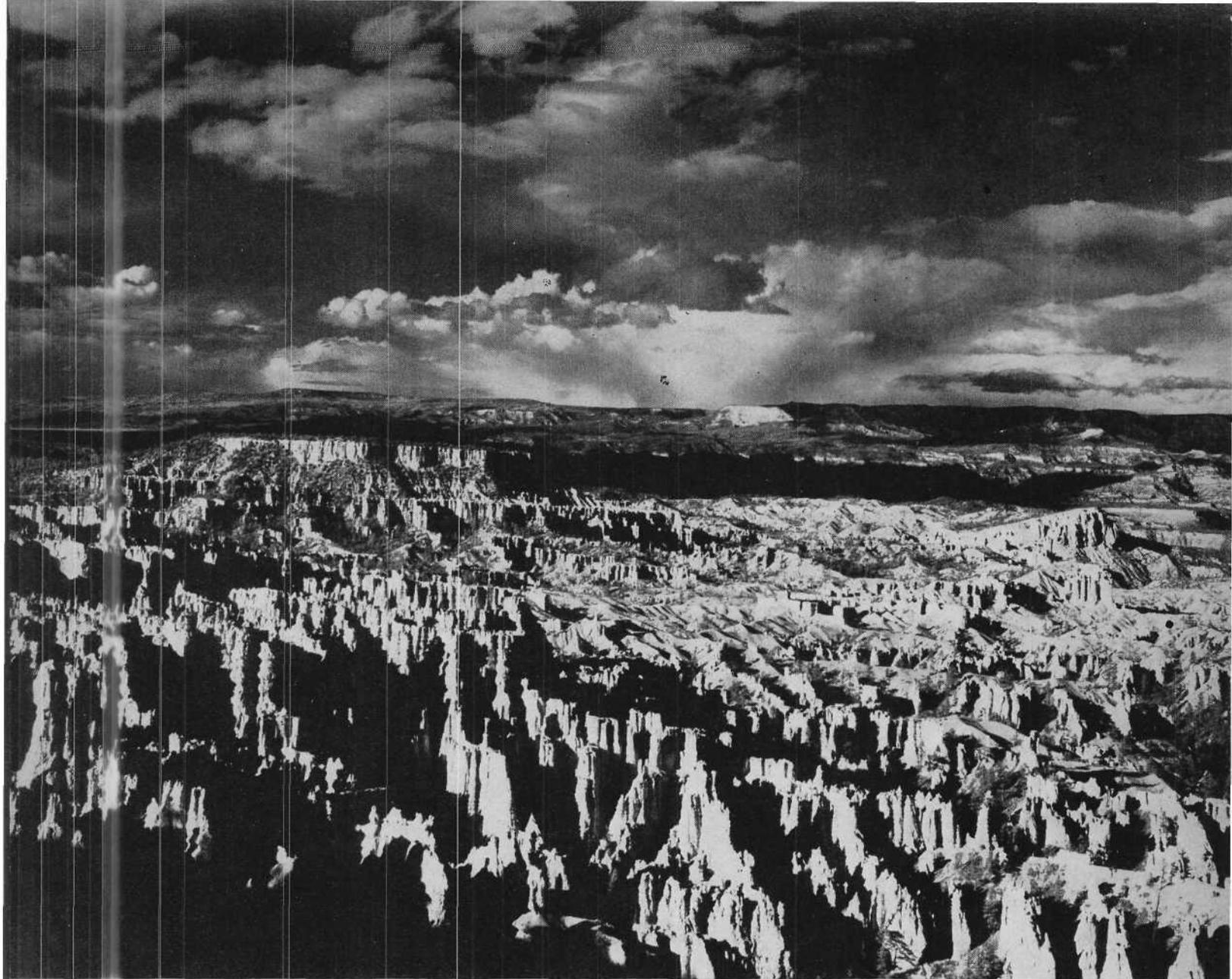


2 Towering dizzily from living green to blue vault of sky above, rocky bastions rim
Aravaipa Canyon and wall a hidden world (preceding page). Swiftly comes the magic
3 change from scorched plateau and cactus flat to bowered leaves and crystal stream.



DESERT WONDERLANDS

The desert is a land of wonderlands. Where the distances possess all, where the tawny desert floor wrinkles in terrible heat—where there is nothing it seems yet there is a palm filled canyon, weird badlands of exotic color, a fantastic forest. There may be a cliff dripping with coolness and tapestried with fern, a purple peak piercing the molten gold of sundown, or colossal monuments standing in splendor as at the funeral of the gods. Surprisingly here, unexpectedly there, will be discovered amazing wonderlands within this land of wonder.



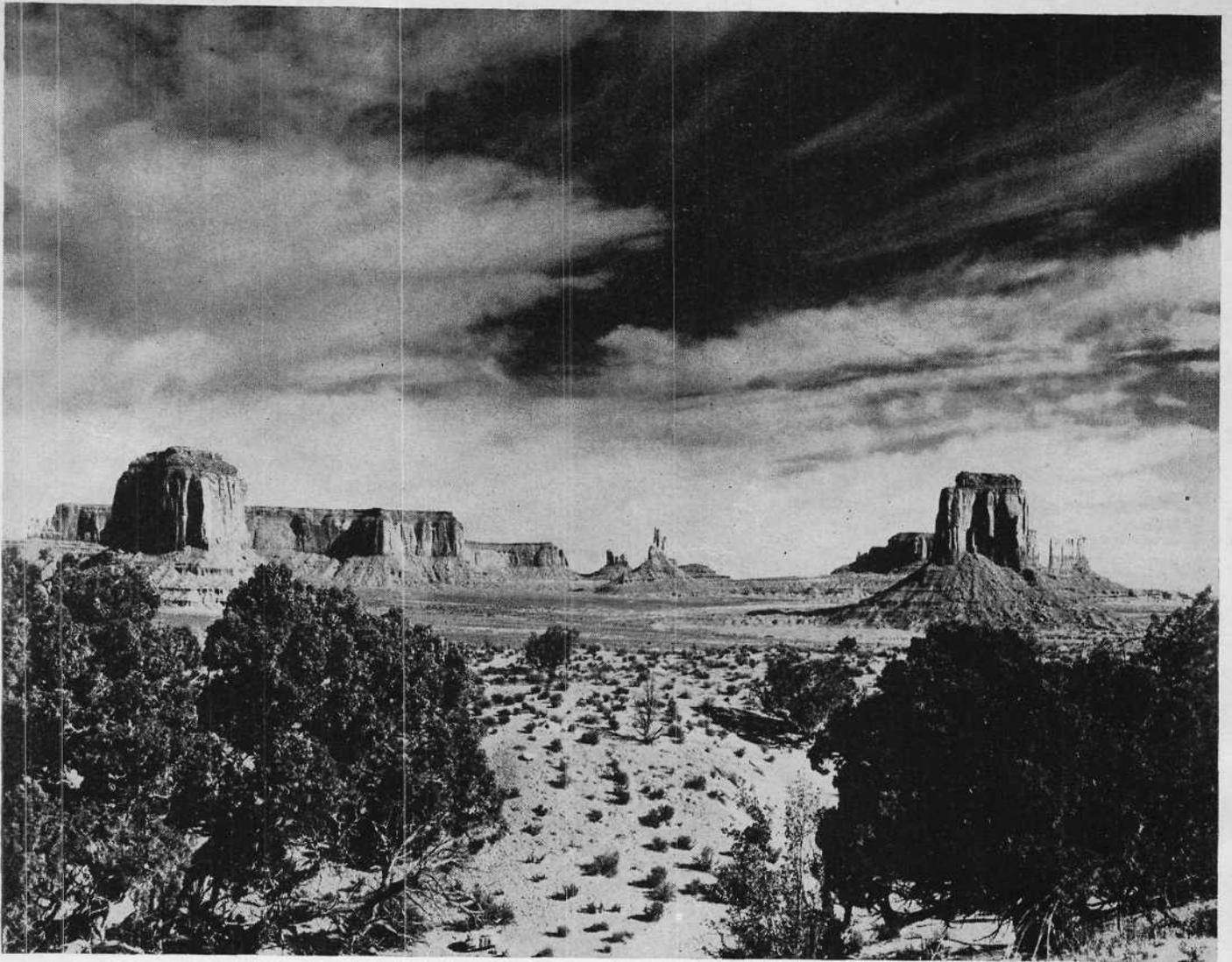
About the Temple of Sinawava in Zion Canyon, Utah, (2) is gathered the full majesty of that vividly tinted gorge. Thrones and summits, chasms and sentinel peaks tell an epochal story of the past. And in the depths of this coliseum of the ages lush verdure creates an oasis prodigal in its unforgettable beauty.

Weird as some forest of Carboniferous time is the great Joshua Tree forest (3) that ranges the northern Arizona slopes of Table Mountain north of Chloride and sweeps on beside the trail toward Gold Basin and Pierce's Ferry. Little else in the desert is like it; nowhere else save in the desert could it be found.

Half to the desert, half to the hills belongs the wonderland of Bryce Canyon (4). Washed from the passionately colored Pink Cliffs formation, its great amphitheater steps down to the White Cliffs and they in turn to the Vermilion, a giant stairs palisading Utah's romantic wastelands.

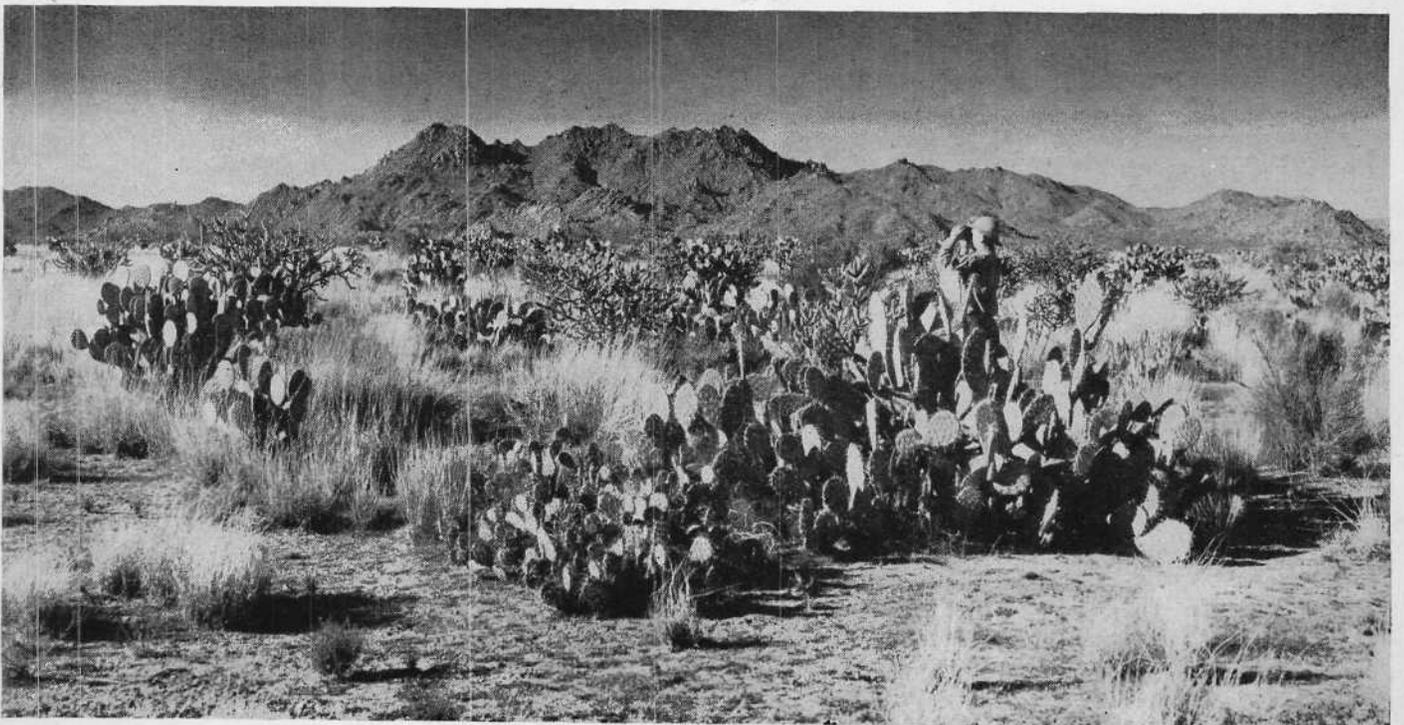
All the strangeness of the desert is typified by the giant saguaro cactus. In the great Saguaro Forest (5) at the foot of the Tanque Verde and Rincons in southern Arizona it is mysterious, defiant, forbidding, yet its charm and fascination are equally real. 4 5

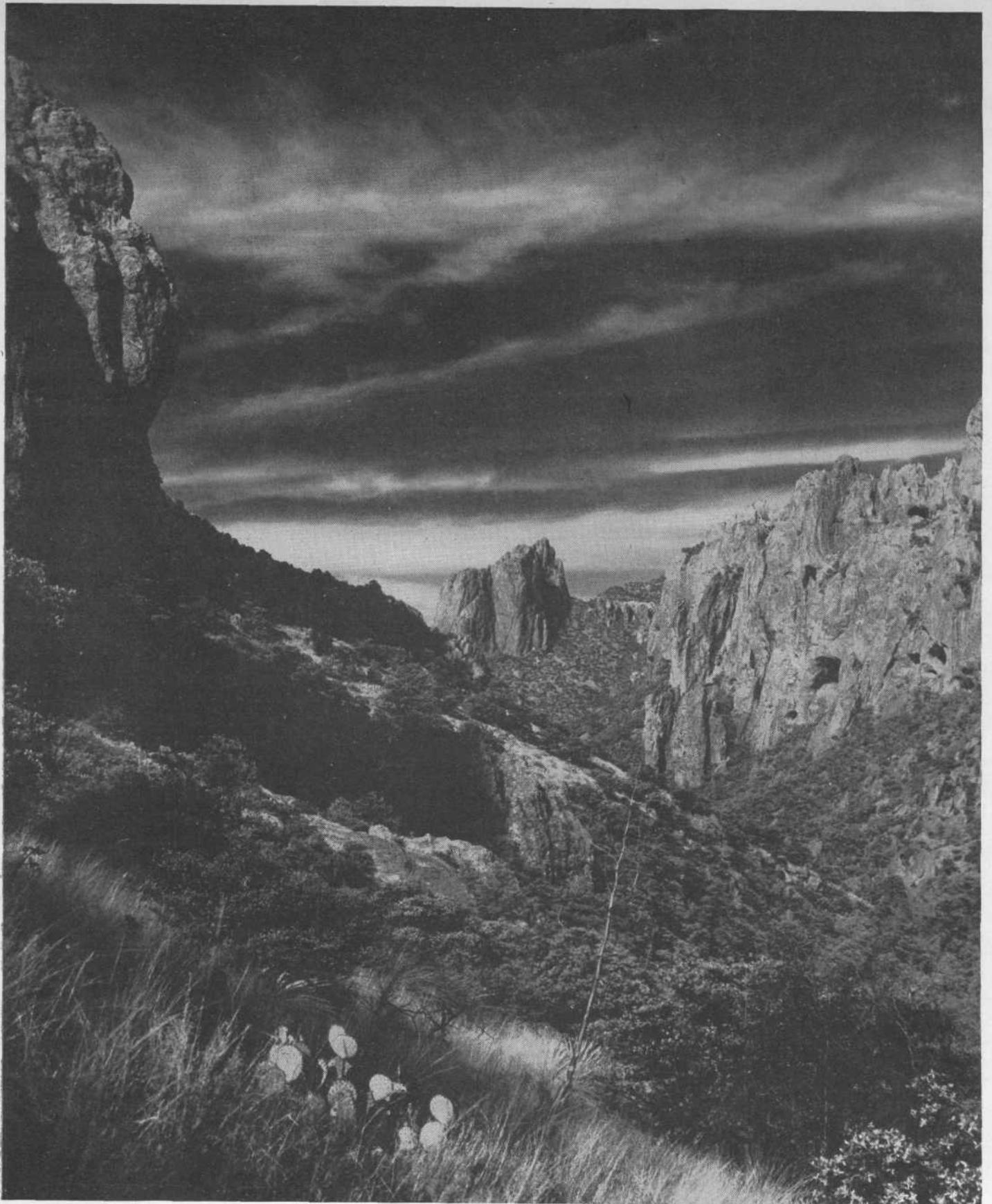




Like mighty ruins of a primal world or some Stonehenge of the giants, mesas and monuments of Monument Valley (above) rise in grandeur and sublimity from the measureless spaces of their vast basin in Utah and Arizona. In their timeless presence, wonder is transformed to awe, and volubility flees before silence.

Cane cactus, beavertail, flapjack and porcupine prickly pear, Joshua, hedgehog, and bisnaga—odd names describing even odder inhabitants of the Date Creek desert, central Arizona. Across its shimmering floor, between gaunt skeletal ranges, fantastic growths crowd together (below) in this garden of the sun.





Cave Creek Canyon

Chiricahua Mountains, Arizona. Along the South Fork of Cave Creek in the Chiricahuas, in a canyon of brilliant color whose cavern-pitted ramparts vault in stupendous bulwarks to the sky, we discover a fantasy of tree and flower. Yucca grows with feathery, long-leaved Arizona yellow pine and dapple-trunked sycamore. Mingling with them dark cypress merge with agave, oak, and prickly pear. Barely within the mountains' grasp, this wonderland is indisputably of the desert.

Mines and Mining . .

Washington, D. C. . . .

Immediate free world market for gold and relaxing of limitations on mining, as well as use of gold and silver in world fund were proposed at Bretton Woods international monetary conference in August. Resolutions passed at two-day meeting of mining officials from 11 western states will be presented to meeting of governors sometime this fall.

Henderson, Nevada . . .

War production board has ordered Basic Magnesium, Inc., in Clark county to close down two more units, leaving four out of ten in operation, cutting production 40 per cent. F. O. Case, manager, estimated that about 400 employees would be affected, leaving approximately 2000 to produce the 4,500,000 pounds of magnesium monthly now assigned to BMI.

Kingman, Arizona . . .

Keystone mill in Mineral Park recently was purchased and reopened by W. L. Witt and associates of Henderson, Nevada. Unit will be thoroughly renovated and equipped to handle 150 tons ore per day. Mines throughout district are already prepared to ship ore to custom mill and many other mines are expected to reopen because of new mill. Nevada group believe lead, zinc and copper will be in demand for some time to come and that gold and silver possibilities in area merit consideration also.

Winnemucca, Nevada . . .

Senator James G. Scrugham, chairman of subcommittee on mining and minerals industry, is planning immediate studies of postwar possibilities of all domestic mining operations. This will be integrated with foreign mineral procurement investigation, reports to be issued later in the fall. Data also will be gathered on wartime critical and strategic minerals program.

Brawley, California . . .

Amerada Oil company, it is reported, will start drilling operations in Brawley or Heber-El Centro sections of Imperial Valley within next six months, having invested nearly quarter of a million dollars in leases. Company recorded 100 leases on land in Heber-Jasper-Verde districts, August 1.

Goldfield, Nevada . . .

Henry J. Kaiser has purchased \$70,000,000 in gypsum plants and deposits throughout the West in preparation for mass scale postwar home building industry which is expected to employ hundreds of thousands of workers. By using lightweight steel for trusses, new plastic cement for exteriors and gypsum wall boards for interiors, cost can be cut 23 per cent under existing methods and materials, according to Kaiser.

Bozeman, Montana . . .

Only important U. S. deposit of corundum, second hardest known mineral, is being developed near Bozeman, J. Reed Lane, WPB deputy director announced. Fuller Corundum mine is scheduled to ship ore in late October, supplying most of nation's needs in this vital war mineral. It has abrasive qualities necessary in manufacture of precision instruments, grinding of lenses.

Santa Fe, New Mexico . . .

Famous Tiffany turquoise mines south of here recently were purchased by former Ambassador James W. Gerard, New York City. It is not yet certain whether mines will be reopened. Gerard recently acquired the 10,000-acre Mocho ranch in the area.

Denver, Colorado . . .

Largest of its kind on record is 44-pound quartz crystal found in Devil's Head area by Louis H. Binderup of Denver. Specimen is a single crystal 19 inches long. Crystal of optical and electrical quality are in high demand for production of precision-cut quartz wafers in army and navy radio sets and other instruments for war, but this specimen it is announced will be kept as a collector's item.

Salt Lake City, Utah . . .

Dr. L. U. Gardner of New York, one of nation's leading authorities on silicosis and tuberculosis, has stated that virtual extinction of the two diseases lies ahead if management and labor work together on reasonable preventive measures. Essential steps toward elimination are positive control of silica dust in mines and employment only of persons not predisposed to tuberculosis as determined by X-ray photographs.

El Paso, Texas . . .

International Mining day will be held by city chamber of commerce Nov. 10 and 11. American institute of mining and metallurgical engineers expects to hold meeting in connection with event, and visitors from entire Southwest are expected to attend.

Albuquerque, New Mexico . . .

New bulletins, Nos. 19 and 20, issued by state bureau of mines and mineral resources describe occurrences and future possibilities of silver and manganese-iron ores in Boston Hill and Chloride Flat, New Mexico. Also described is stratigraphy of northern New Mexico, of special interest to oil and gas operators in that district.

Carson, Nevada . . .

Nearly 100 operators of mines, mills and smelters in state have suspended work during last year because of manpower shortage and wartime federal control. Small operators and miners in quicksilver, gold and silver have been hardest hit, leaving only 146 units in operation in state.



TODAY . . .

Your motor needs all the protection you can give it for longer life. Wise owners look for the Green and White sign where quality QUAKER STATE Motor Oil is sold.

WE WILL BUY . . .

.. THE FOLLOWING BACK NUMBERS OF DESERT MAGAZINE

They should be in fair condition to permit resale. Check your list of Desert Magazines and if you have extras send them to us.

November, 1937	.....	\$3.00
December, 1937	.....	1.00
April, 1938	.....	1.00
June, 1938	.....	1.00
September, 1938	.....	1.00
January, 1939	.....	1.00
February, 1939	.....	1.00
April, 1939	.....	1.00
May, 1939	.....	1.00
July, 1939	.....	1.00
January, 1940	.....	1.00
March, 1940	.....	1.00
August, 1940	.....	1.00
March, 1941	.....	1.00

DESERT MAGAZINE

636 State Street El Centro, California

-10-44

Jacumba Hot Springs Sold . . .

JACUMBA—W. A. Hansen of Fullerton recently purchased holdings of Jacumba Hot Springs company, located on highway from El Centro to San Diego. Transfer includes four-story hotel, apartments, park, hot springs, bath house, swimming pool, auto court and cottages and nearly all surrounding real estate. Bert B. L. Vaughn had owned property since 1919, being founder, manager and unofficial mayor of mountain village until now.

Date Booklet Issued . . .

INDIO—Informative booklet entitled "Growing Up," publicizing Coachella valley's date industry, recently was compiled by M. C. McDonald and edited by officials of date cooperative. Many individuals, corporations and libraries have requested copies of booklet which describes history and growth of United Date Growers of California.

Air Station Expanded . . .

HOLTVILLE — Expansion costing \$734,147 is being made at Navy auxiliary air station here, Eleventh naval district disclosed August 10. Contract awarded A. Farnell Blair, San Francisco, includes two hangars, training building, three temporary barracks, bachelor officers' quarters, Waves barracks, officers' mess, brig, two storehouses and addition to dispensary.

Aqueduct Line Planned . . .

HEMET—Plans are being prepared for construction of large conduit from San Jacinto tunnel of Colorado river aqueduct to San Diego, according to word from Metropolitan water district of Los Angeles. Because of tremendous population growth in San Diego, supplying of dependable water ways long has been urged by army, navy, aircraft and civil authorities.

NEVADA

Nevada Silver for Nevada Sailors

CARSON CITY—Treasure chest of Nevada Magnesium will carry 2,000 silver dollars minted here to crew of U.S.S. Nevada, American battleship which aided in invasion of Europe, Governor E. P. Carville announced. Coins will be used by officers and crew members as good-luck charms . . . chest is expected to wind up on desk of commander for use as cigar container!

Indian Students Join Up . . .

STEWART—Approximately 300 students of Stewart Indian school have joined armed services since war, four of them girls who have enlisted in WAC. This represents larger proportion of enlistments than from any other school containing same age group. Nearly all young men from the school enlist upon reaching 17, and because of excellent physical education program they seldom are rejected.

Legion Convention Held . . .

WINNEMUCCA — This city was chosen as site for 1945 Nevada department convention of American Legion at session held at Las Vegas in August. Newly elected officers include J. William Schaefer, commander; I. A. Lougaris, national executive committeeman, and Theo Garrett, first vice commander.

Temperature Lower . . .

CARSON CITY—Average July temperature for state was 71.2 degrees, or 1.4 below mean for past 56 years. Highest recorded was 113 degrees at Overton on 17th while lowest recorded was 28 degrees at Mala Vista ranch on 10th.

Coal Company Formed . . .

GOLDFIELD—Sierra Coke and Coal company has become incorporated and plans to operate coal fields at Coaldale, north of here. Main product is to be ammonium sulphate, used as fertilizer. Experiments are being made for use of coal in coke, tar and by-products of tar.

Yacht Club Possibility . . .

LAS VEGAS—Plans are underway to form Lake Mead yacht club, sponsored by city chamber of commerce. Unusual setting and favorable year-round weather are lake's assets for this sport, according to Frederick C. Brewer, well-known yachtsman. Program would include complete clubhouse, commissary, moorings, marine railway launch, car ramp, bathing beach and maintenance and repair shops.

REAL ESTATE

For Imperial Valley Farms—
W. E. HANCOCK
"The Farm Land Man"
Since 1914
EL CENTRO — — — CALIFORNIA

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—
Actually about 1½ cents per thousand readers.

MISCELLANEOUS

SMALL POST-WAR BUSINESS FOR SALE—

A going business for six years necessarily discontinued during the war. One office man and one mechanic can resume as materials become available but now is the time to get ready. The products are The Johns Gem Cutter, The Johns Thin Section Cutter, The Johns Potters Wheel, The Johns Lineoleum Print-Press, The Johns Nick Remover and Polisher for Glassware. Manufactured parts, gated metal patterns, jigs and special tools, advertising set-ups, printed matter, good will, etc. No machine shop equipment included. Reason for selling is poor health of sole owner. Geo. McD. Johns, Rt. 3, Box 112-A, San Antonio 2, Texas.

WHY SPEND YOUR ENERGY trying something that cannot be done your way? Give Nature a chance to succeed? BASIC RESEARCH LABORATORIES SYSTEM, 785 Lafayette Street, Denver 3, Colorado.

FOR SALE—Indian relics, 23 assortments from which to choose, \$1.00 per assortment or \$20 for all 23. All perfect specimens. Choose from these: 10 beautiful prehistoric Indian arrowheads; 10 tiny bird arrowheads; 10 arrowheads from 10 different states; 2 stone tomahawks; 4 spearheads; 5 stone net sinkers; 10 fish scalers; 2 hoes; 4 agate bird arrows; 5 flint drills; 7 flint awls; 10 beautiful round head stunning arrowheads; 4 fine sawedged arrowheads; 4 fine flying bird arrowheads; 4 fine drill pointed arrowheads; 4 fine queer shaped arrowheads; 4 rare double notched above a barbed base arrowheads; 5 double notched above a stemmed base arrowheads; 12 small knife blades of flint; 1 rare shaped ceremonial flint; 3 flint chisels; 7 crystals from graves; 10 arrowheads of 10 different materials including petrified wood. Locations given. 100 arrowheads \$3.00. 100 very fine mixed arrowheads all perfect showy colors including many rare shapes such as drill pointed, double notched, saw edged, queer shapes, etc., location and name given, \$25.00. List free. Lears, Glenwood, Ark.

Large stock of petrified palm. Twenty tons of rock specimens. Navajo rugs, reservation hand hammered silver and baskets from many tribes. Many other handmade artifacts. Daniels Indian Trading Post, 401 West Foot-hill Blvd., Fontana, Calif.

Let us do your shopping. Our knowledge of merchandise is at your service. We will buy any article for you from "a button to a steam shovel" for a nominal service charge. Coast Cities Shopping and Buying Service, 623 Storey Bldg., Los Angeles 14, Calif., or 403 Maritime Bldg., Seattle 4, Wash.

Indian Relics: 20 genuine Indian arrowheads \$1.00, Catalog. Geo. Holder, Glenwood, Ark.

BALL BEARING ARBORS—¾-in. shaft 16 inches long \$11.75; one inch shaft \$15.75. These arbors are very good for grinders, sanders and buffers. This includes pulley and bolts ready to bolt to your bench. Send \$5.00 with order. All prices F.O.B. L. A. Calif. We also carry lapidary supplies. Open Saturday and Sunday from 9 a. m. to 7 p. m. 5118 Granada St., Los Angeles 42, California, in Highland Park.

WANTED, for general work and to assist cook in a small resort, a married couple or two women. Write giving all particulars and salaries required, to Desert Lodge-Rancho Borrego, Borrego, Julian P. O., California.

LIVESTOCK

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

"Karakul Fur Sheep — America's Great Livestock Opportunity—You can be a part of this fascinating business and have your Karakuls cared for by experienced rancher. Write for details, James Yoakam, National Distributor, 1128 No. Hill Ave., Pasadena, California."

NEW MEXICO

Ceremonial Profits Totaled

GALLUP—At least \$15,000 was received for Indian handmade arts and crafts during annual programs of Inter-Tribal Indian Ceremonial August 11-13, M. L. Woodard, secretary, announced. In normal times an estimated \$200,000 is spent during Ceremonial by visitors, and still larger amounts are anticipated during the postwar period. This 23rd annual presentation of event set new peak in attendance, an estimated 10,000 or 12,000 witnessing the five programs.

Murderer Was "Bewitched"

ALBUQUERQUE — Ignacio Candelaria, 59, confessed to fatal stabbing of estranged wife and her adopted son while believing himself bewitched. He said his wife cast spell over a doll and buried it, causing him to lose all his strength. She refused to cure him, and when Navajo medicine man could not break spell, Candelaria killed his wife and her son Adolfo Montoya, 23, when the latter attempted to defend her.

Poe Original Lost

SANTA FE—A. S. Bigelow has offered \$5000 reward for return of original copy of Edgar Allan Poe's "Tamerlane." He said that paper-covered volume was one most highly sought by book collectors and was lost or stolen early in August during move from a ranch north of Pecos to Santa Fe.

Tenth of Paguate Serves

ALBUQUERQUE—The 726 residents of Paguate village of Isleta Pueblo dedicated village service flag at ceremony August 11. List of 71 names, near ten per cent of population, was read and dedicatory address was made by Abel Paisano, councilman of pueblo.

Famous Pottery Maker Dies

SAN JUAN—Mrs. Keyasita A. Trujillo, well known pottery maker of San Juan Pueblo died here early in August. She and her husband had been Pueblo's representatives at Chicago world's fair, 1934, had gone on to Washington where they met President Roosevelt. Mrs. Trujillo had won many first prizes at Gallup Indian Ceremonials and Santa Fe Fiestas.

Frontier Leader Passes

SANTA FE—Miguel Antonio Otero, former territorial governor of New Mexico, died in his sleep August 7, aged 84. Frontier veteran at 20, Otero knew many famous men and women of early West and took an active part in its settlement. Late years were devoted to writing of memoirs including "My Life on the Frontier" and "My Nine Years as Governor of the Territory of New Mexico."

Five fishermen in August reported black bear and cinnamon bear in Hondo canyon, area rarely visited by bear.

UTAH

Scabies Endanger Sheep

SALT LAKE CITY — Epidemic of sheep scabies threatens to ruin eastern markets for Utah, Idaho and Nevada sheepmen, L. Tate, Minnesota law enforcement officer here on inspection tour, declared. Western sheep are free from disease up to point of shipment but contact it from contaminated transportation vehicles and feed and water pens. Measures are being taken to disinfect such items and check spread of scabies.

State Parks Considered

SALT LAKE CITY—Officials of Utah department of publicity and industrial development have designated nearly 40 areas in state for consideration for inclusion in system of state parks and monuments. Some areas would include extensive acreage and others only monuments commemorating state historical sites. At present, only one state park and no monuments are being maintained.

Many Predators Killed

SALT LAKE CITY—Efforts of federal fish and wild life service and hunters combined to kill and trap some 20,000 predatory animals throughout state during past year. Bounties of over \$70,194 have been paid for killing of 10,078 coyotes, 1501 bobcats, 47 cougars and one wolf.

Lake Dispute Settled

CEDAR CITY—Old controversy over water of Navajo lake, fishing and camping resort, was settled after meetings between interested parties and state fish and game commission in August. Dike, damaged last May by dynamiting, will be repaired and raised two feet, new headgates and spillways to be constructed also. Storage of 2000 acre feet of water will be turned over to Virgin river during irrigating season, river water users agreeing to pay one-fourth expenses of repairs and construction.

Great Lake Diminishes

SALT LAKE CITY—Great Salt lake has fluctuated some 18 feet in depth since first measurement by gauges in 1850, according to chart released by M. T. Wilson, U. S. geological survey engineer. Level of 1850 was 4201 feet above sea level, all-time high was almost 4212; lake is now just under 4195, showing steady decline of about foot and a half a year. Irrigation and evaporation may someday leave lake a dry bed of salt say some geologists.

For Nice Things

- INFANTS' AND CHILDREN'S WEAR
- LADIES' READY-TO-WEAR
- MEN'S FURNISHINGS
- FINE LINENS

CUSTER'S

206 W. TENTH STREET PHONE 246
LANCASTER, CALIFORNIA
THE HEART OF ANTELOPE VALLEY
RILLA CUSTER GALEN CUSTER

DESERT TRAVELOGS

Noteworthy scenic spots have been described in the "Mojave Desert Travelog." Ghost Towns, Crimson Canyons, Historic Mines, Rocks and Semi-Precious Stones, Desert Wildflowers, Ancient Indian writings are interestingly written, profusely illustrated with photographs and detail maps. Set of 12 travelogs, price 25c. Write to Barstow Printer-Review, Barstow, California.

A WESTERN THRILL

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

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

STUDENTS AND HOBBYISTS
ALIKE FIND THE

DANA MAGAZINE

A Source of Accurate and Always
Timely and Interesting Information
on the Absorbing Subjects of . . .

- GEOLOGY
- GEMOLOGY
- MINERALOGY

Subscriptions are \$2.00 Yearly
Single Copies 20c

TELEPHONE TUCKER 6801
428 Metropolitan Bldg.
LOS ANGELES, CALIF.

WE SUGGEST . . . A Christmas Gift from the Desert



During the coming year DESERT will feature articles by your favorite Desert Magazine writers on . . .

- INDIAN LIFE AND LORE
- DESERT PLANTS AND WILD LIFE
- GEMS AND MINERALS
- GEOGRAPHY AND GEOLOGY
- PERSONALITIES OF THE DESERT
- DESERT HISTORY AND ARCHEOLOGY

We haven't rationed DESERT . . . yet . . . but in order to enable us to know if we will have enough magazines to go around this year we hope you will consider our suggestion that you send in your order early. Then, too, by ordering now, we shall be able to give your order more personal attention.

. . . GIFT RATES . . .

1 year	\$2.50
2 years or 2 subscriptions	4.50
Each added gift subscription in the same order	2.00
Canadian postage 25c extra — Foreign postage 50c extra	

Desert Magazine subscriptions are especially appreciated by men and women in the service . . . both at home and overseas . . . and by our boys in convalescent camps here at home.

The first copy will be mailed to arrive just before Christmas accompanied by a desert gift card.

THE *Desert*
MAGAZINE
636 State Street El Centro, California

GEMS AND MINERALS

ARTHUR L. EATON, Editor

LOS ANGELES MINERAL CLUB HONORS PAST PRESIDENTS

Los Angeles Mineralogical society observed a past presidents' night August 17 at Boos Brothers cafeteria, 530 South Hill. Topic for the evening was "My Interest in Mineralogy as a Hobby."

Past presidents of the group are: Dr. Thomas Clements, 1932-33-34; Dr. Howard R. Hill, 1935; Mrs. Gertrude McMullen, 1936-37; Dr. John A. Herman, 1938; O. C. Smith, 1939; M. Ernest Peterson, 1941; B. Gordon Funk, 1942.

September field trip was at the home of president Richard Lehman. The mineral collection of the society was on display. Swapping was in order.

LAPIDARY SOCIETY HAS OUTSTANDING PROGRAM

One of the most interesting and instructive meetings of Los Angeles Lapidary society was held August 7. In the absence of program chairman Loren Mitchell, Fred Rugg took charge of the program. He spoke on the dangers of the desert, from personal experience dating back to 1910 when he drove a team through Imperial Valley.

Herbert Monlux, who spent July near Mono craters, spoke on that region and presented each member with a volcanic bomb. Mrs. Belle Rugg sketched a trip which she took into Chuckawalla mountains. Chas. G. Schweitzer entertained the group with narration of a trip to Horse canyon.

More than 100 members and guests enjoyed the meeting, presided over by president Rolland E. Willis. There was an unusually good display of polished stones.

ROCKHOUND'S PRAYER

By CARROLL DEWILTON SCOTT

Rock polishing is my hobby, I shall not want for exercise . . . It maketh me lie down in broad pastures, It leadeth me beside dry water courses . . . It restoreth my youth, It leadeth me in the paths of the desert tortoise, for my hobby's sake . . . Yea, though I walk thru Death Valley, I will fear no disappointment, for the gems are there also, the nodules and the crystals they comfort me . . . Thou preparest the tablelands before me with chalcedony, enough for me and my enemies, Oh for gas and oil till my tank runneth over . . . Surely this hobby shall follow me all the days of my life and I will dwell in a house full of rocks forever.

The spectroscope has been used for many years to discover and identify the elements and minerals in the sun's surface and corona. Each element when heated enough to become a gas, as in the sun's corona or the laboratory, shows its own distinct color or shade of color. Nearly all elements known on earth, except gold, phosphorus, mercury, and two or three others, have been identified in the past from the sun spectrum. Just recently, the spectra of gold and thotium, a rare radioactive element, have been discovered and checked.

SOUTHWEST MINERALOGISTS REPORT ACTIVE SUMMER

Jeanne M. Lippitt, corresponding secretary Southwest Mineralogists, Inc., reports the society has been active throughout the summer months. Study group under Mr. Eales has learned how to identify minerals by hardness and streak test. Moving pictures of Luray caverns of Virginia and Carlsbad caverns of New Mexico illustrated a talk by Victor Arcienega on limestone caverns, at July 21 meeting. July 30 marked the annual trip to Western Trails museum and the home of Mr. and Mrs. Marion Speers of Huntington Beach.

Roscoe A. Goodcell of the Automobile Club of Southern California gave the members an interesting talk on the Alaskan highway, illustrating his talk with 110 colored slides. August 26 field trip was to the home of Joe and Florence Vercellone in South Gate.

COLORFUL MINERALS

AMAZONITE

Amazonite or amazonstone is a variety of microcline feldspar, potassium aluminum silicate. Common microcline ranges from snow white to cream in color, often is beautifully lined, and has brilliant feldspar luster on cleavage faces. But amazonite boasts a light green to almost emerald green color, and sometimes fine hexagonal crystals with a low pyramid. Amazonite is found massive at Amelia courthouse, Virginia, and many other places, including San Diego county, California, and Arizona. Pike's peak area, Colorado, furnishes perhaps the most beautiful specimens—great masses of fine, deep green colored crystals.

Color Aids Identification

Field Book of Common Rocks and Minerals, by F. B. Loomis, is an excellent book for either beginner or professional. It contains simply worded sections on the six crystal systems, hardness, cleavage, etc. About 170 pages deal with minerals; another 100 pages with all types of common rocks—sedimentary, igneous and metamorphic, as well as coal, petroleum, etc. One of the most interesting and valuable parts of the book is the group of 73 plates of photos and drawings of rocks and minerals, most of them done accurately in full color. Many amateurs find these color plates useful in identification of their newly found specimens and crystals. \$3.50.

LAPIDARY SUPPLIES...

VRECO DIAMOND BLADES

Give better performance, longer life, faster cutting

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

Arbor holes 1/2, 5/8, 3/4, 1 in.

Lapidary supplies now available without priority: Norton Crystolon Grinding Wheels, Wheel Dressing Sticks, Crystolon Grain and Norbide, Drum Sanders, Sanding Cloth, By-field Polishing Buffs, Polishing Powders, Dopping Wax, Canada Balsam, etc.

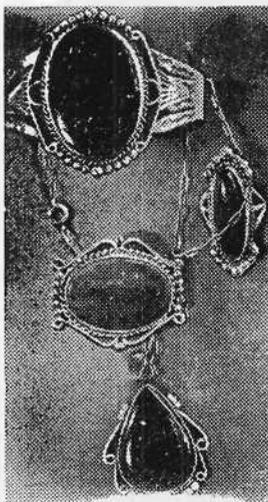
CUTTER'S ASSORTMENT. For \$1 we will send you a 3 lb. assortment of the following rough gem materials: Rhodochrosite, Variscite, Thunder Eggs, Eden Valley Wood Limb, Montana Moss Agate, Brazilian Agate, California Blue Agate, Turritella Agate, Petrified Wood and etc.

PETRIFIED WOOD—Washington. Asst. Varieties. 50c lb. Special 10 lb. asst. \$3. Slabs 15-25c per sq. in.

On all orders for gem material add 20% to cover Federal Luxury Tax. Residents of California be sure to add the 2 1/2% Calif. State Sales Tax.

WARNER & GRIEGER

405 Ninita Parkway Pasadena 4, Calif.
Our Phone Number is SYcamore 6-6423



HERE ARE THE GIFTS YOU'VE BEEN LOOKING FOR!

Rings, \$4.00 and Up Necklaces, \$5.00 and Up
Brooches, \$5.00 and Up

Bracelet and Ring Sets, \$15 and Up

Plus 20% Excise Tax and 2 1/2% Sales Tax

Petrified Picture Wood and Moss Agate — Jewelry
Hand Made in Sterling Silver Mountings

RINGS — BRACELETS — NECKLACES
BROOCHES — TIE SLIDES, ETC.

Mail Orders Filled Anywhere in U. S. A.

ELLIOTT'S GEM SHOP

26 Jergins Arcade Village Long Beach 2, Calif.

Entrance Subway at Ocean and Pine
Open 10 A.M. to 10 P.M. Daily

AMONG THE ROCK HUNTERS

Ernest Chapman talked on minerals and crystal cavities of the New Jersey region at August 11 meeting of Pacific mineral society. He emphasized zeolites and displayed many choice specimens.

GEM MART

ADVERTISING RATE
5c a Word — Minimum \$1.00

AURICHALCITE, the double carbonate of zinc and copper, a really beautiful mineral, from a new locality. Prices 50c to \$5.00 per specimen. W. T. Rogers, 1230 Parkway Ave., Salt Lake City 5, Utah.

ROCK COLLECTORS ATTENTION—FALL SPECIAL OFFER—24 different, labeled, rocks, minerals, crystals; my selection, colorful, rare, showy. Postpaid \$10.00. Also with this offer, a free cabochon, your choice of moss or marked agate, opal, moonstone, turquoise, petrified wood, carnelian. You name it. The Rockologist (Chuckawalla Slim), Garvey Trailer Park, 941 E. Garvey Blvd., Garvey 32P, California.

Have a hobby, spend the long winter evenings in happiness. Permit me to start you in mineral collecting. For \$10.00 I will ship you 15 beautiful Colorado minerals, size 2x2, each one labeled. Try it and find happiness. All ads in past issues still good. Jack the Rockhound, P. O. Box 86, Carbondale, Colorado.

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

Selling out. Army calls. Assorted gem rocks (rough). 10 lbs. \$2.50. Also cabinet specimens. Leon Hansen, Colfax, Calif.

Elba Iron Ore: Rare, in blade and crystal form, 25c up to \$5.00 piece. Something new for collectors. Valley Art Shoppe, 21108 Devonshire Blvd., Chatsworth, Calif.

Oregon Plume Agate in rough slabs for making ring, brooch or pendant sets, \$4.00 to \$15.00. Polished sets \$5.50 to \$20.00. A few exceptional pieces at higher prices. These are the finest agates of Oregon's sagebrush country. E. Lee Sigfrit, 211 Congress Ave., Bend, Oregon.

Rose Tourmaline in Quartz, \$3.00 to \$7.50 each. Gem Kunzite 75c gram. Specimen Kunzite, \$1.50 to \$20.00 each. Blue gem Tourmaline, 50c to \$3.00 each. Jasper spheres 3 and 6 in., 3 in. Jasper sphere \$10.00; \$25.00 for large Jasper sphere or 3 in. Jade sphere. The Desert Rat's Nest, 2667 E. Colorado St., E. Pasadena, Calif.

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

Pink Muscovite on Albite Quartz—Something new for the cabinet. Specimens, 75c to \$4.50. Jay G. Ransom, 3852 Arboleda St., Pasadena 8, Calif.

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

August mineral notes and news, publication of California Federation of Mineralogical societies, published a picture of Sequoia group taken at the Dinuba picnic.

Fred C. Johnson, for 14 years a resident of Africa, discussed diamonds and mining methods at August 11 meeting of Long Beach mineralogical society. Jesse Hardman has arranged a display of specimens in Long Beach main library as an advertisement of the mineral show October 15.

Peacock Copper Specimens. Beautiful specimens. Colors range from natural golden brown, blue purple, red pink, in wonderful combinations. No two specimens have same coloring, but all are specimens of beauty. Sizes range from 2x2 to 3 1/2x4. Any amount between \$1.00 and \$6.00 will bring you one of these beauties, add postage please. Jack the Rockhound, P. O. Box 86, Carbondale, Colorado.

Agate Chips, require no sawing, one pound assortment 75c. Small slabbed pieces 1/2 inch and up one ounce 30c, 1/4 pound \$1.00. ESCALANTE AGATE COMPANY, Box 941, Grand Junction, Colorado.

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

INTRODUCTORY OFFER—One dollar each lot. Five all different Fluorescent Agates—polished. Thirty rough Mexican Opals. Fifty nice pieces Turquoise. Twenty different polishing specimens. Postage ten cents. Minerals and gems on approval. DR. RALPH MUELLER, Professional Building, Kansas City, Missouri.

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

\$2.50 brings you prepaid six rare and beautiful crystallized Arizona minerals. Vanadinite, Diopside, Wulfenite, Willemite, Chrysocolla, Azurite. Specimens 1 1/2x2 or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

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

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

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

Quartz crystals of the finest water clear quality to be had. Single points from 10c to \$10.00 each. Groups from 50c to \$50.00 each. Outstanding specimens in groups for cabinets and advanced collectors from \$5.00 up. Several bushels of broken and blemished points, mixed quality, fine for rock gardens at \$12.50 per Bu. Good quality blemished points, all sizes at \$25.00 per Bu. Wavelite 50c per Lb. Novaculite, the beautiful gem material, in white, jet black, salmon pink, cream and blended material at 50c per Lb. Or six Lbs. Asstd. Colors for \$2.50. Delivery Charges extra and satisfaction or money back on every item I ship. J. L. Davis, 303 Ward Ave., Hot Springs, Ark.

Most of the mineral club monthly bulletins contain articles of information and interest to members. For instance, August Sequoia bulletin discusses sardonyx; Searles Lake, Hot Springs deposits of Coso mountains; Marquette, fossils; Pacific mineralogist, mineralogy as a hobby.

During June, July and August New Jersey mineralogical society did not issue bulletins due to transportation problem. Regular meetings were resumed September 5 at Plainfield public library. Speaker was Mr. L. Vogt of WPB, whose subject was radium.

Pacific mineral society on September 8 had a motion picture night through courtesy of Aluminum Company of America. Films, shown at Hershey Arms hotel, Los Angeles, were "Unfinished Rainbows," a technicolor production starring Alan Ladd, "Aluminum — Mine to Metal" and "Aluminum Fabricating Processes."

Searles Lake gem and mineral society continued activity through the hot summer months. Mr. and Mrs. John McPherson were hosts to the group August 16. Mr. McPherson talked on the history and mining development of his section of the Argus range, about 11 miles north of Trona. Robert L. Sherman gave the second half of his talk on astronomy, using his home made telescope. New members will join with old helping Ann Pipkin put on the annual hobby show October 21-22 in the high school auditorium. Attendance is expected to reach 1000.

Arthur L. Flagg reports that Mineralogical Society of Arizona found it worth while to hold informal meetings through the summer months. The group met on the Arizona museum lawn with all museum facilities available. Annual picnic was June 4 with 60 in attendance. Regular schedule will be resumed October 5, and continue on first and third Thursdays through May, 1945. Pertinent motion pictures will be shown once a month.

DESERT QUIZ ANSWERS

Questions on page 14

- 1—Don Fernando de Taos.
- 2—Mt. Ellen, 11,485 feet elevation.
- 3—Adolph Bandelier. 4—22.
- 5—Mesozoic.
- 6—Copper bells of Mexican origin have been found in excavations in northern Arizona, particularly at Wupatki Ruin.
- 7—Remains of Hohokam (People That Are Gone) irrigation canals still are to be seen south of Phoenix, Arizona, in Casa Grande ruin area. Scientists believe they were used between 200 B. C. and 500 A. D.
- 8—M. L. Woodard, Gallup, N. M.
- 9—32 miles have been explored, but only about seven miles have well lighted trails.
- 10—Coloring of gem stones for commercial use.
- 11—Panamint range.
- 12—Hopi. The Papago speak Shoshonean which is also the stock of the Hopi.
- 13—Spanish Duke of Albuquerque.
- 14—Diné, meaning The People.
- 15—The Yuman-speaking Kamia whose descendants now are found with the Yuma and Cocopah.
- 16—Deposition by water.
- 17—Pigweed, or Saltbush family.
- 18—1700. 19—C. Hart Merriam.
- 20—Sapphire. It is hardness nine, only the diamond will make a scratch on it.

Tables Identifying Minerals

Tables For the Determination of Minerals, by E. H. Kravs and W. F. Hunt, is the answer to a long felt need. Few prospectors or amateurs have either the exact technical knowledge or the necessary equipment to make careful chemical or other tests for the identification of minerals or deposits. Kravs and Hunt's book is made up of a series of tables of the physical characteristics of minerals which can be determined by anyone. It puts a vast fund of information about 250 common minerals at the service of all. 266 pages. Price \$3.00.

Western miners have been notified by the war production board that no further supply of iceland spar, used in the manufacture of gun sights, precision instruments, dichroscopes, etc., will be needed after October 1. H. G. Taylor of WPB said the army and navy have announced a reduction in requirements of iceland spar and estimate that their requirements soon will be filled by existing stock piles.

Marquette geologists association, Chicago, resumed meetings September 9.

Rocky Mountain federation has planned a traveling or loan collection of minerals. Each active member society contributes a small collection of rare or exceptional specimens from its locality. Mineralogical Society of Arizona started a group of 20 unusual minerals on its rounds October 1. Exchange is made monthly.

Sequoia mineral society met at Reedley August 1. Members displayed agate, with emphasis on sardonyx. A game of mineral identification intrigued participants. Bill Dyck gave a small Arizona peridot to each member who was born in August.

Fifty-six members and visitors of Orange Belt mineralogical society met for a covered dish dinner in Pinetum at Sylvan park, Redlands, August 13. First prize went to Dr. D. H. Clark for most interesting experiences as rock collector.

Members of Mineralogical Society of Utah enjoyed rare treat September 3 when they held their first annual dinner at CCC camp in beautiful Albin basin at upper Alta. Miss Betty Jones headed arrangements committee. Dinner marked last field outing of the year and members were free to bring guests.

New Jersey mineralogical society has elected following officers for 1944-45: Joseph D'Agostino of NBC, New York, president; H. Millson, Calco Chemical Co., vice-president; Dr. P. Walther, vice-president; G. R. Stilwell, Bell Laboratories, New York, secretary; Miss E. Hensel, Plainfield public schools, treasurer; D. A. Surina, Plainfield public schools, librarian; Dr. A. C. Hawkins, Lucius Pitkin Co., New York, curator.

Americans would wonder less about the demand for tin, and the apparent scarcity, if they knew of some of the numberless uses to which it is put in the war effort. The new battleship Missouri carries almost 100 tons of tin mixed with its other metals. Every warship, of every type, carries great quantities of this fine metal. The radio uses it in many of its parts, also the gas mask, the bombsight, and a thousand and one other military and naval instruments. Save your tin for the government, and you will be helping both the army and navy on their way to Tokyo and Berlin.

OCCURRENCE OF HERKIMER QUARTZ CRYSTALS DESCRIBED

By EDMUND EVERETT HOBBS, SR.

The famous Herkimer quartz crystals of Herkimer county, New York, occur either in pocket cavities in Little Falls dolomite, or, as this rock disintegrates, the many small doubly-terminated crystals locally called "Little Falls diamonds," are found loose in the top soil. The native rock of the vicinity is either massive dolomite, dolomite rhombs, or dolomitic limestone. The crystals are found only in certain phases of the dolomite itself, known as the Beekmantown formations.

In the deep railroad cut of the West Shore railroad at Little Falls, N. Y., one can see the strata to perfection. In the bottom of the cut, are seen Cambrian age rocks, such as Little Falls granite, gneiss, etc. Above this, Little Falls dolomite, and at the top, the strange and curious Little Falls Cryptozoan ledge.

Herkimer quartz crystals are hexagonal, with a six-sided pyramid on each end. In the smaller crystals, and even a few of the larger ones, the sides or faces of the main crystal all appear to be of the same uniform size and shape. But, in many large crystals, the sides are quite irregular in form and shape. These are known as trapezohedral or trapezohedrons (cf Dana). In this latter type, hardly any two of the faces are of the same shape or size.

Many small Little Falls "diamonds" are perfect brilliants, without striations, imperfections or inclusions. They have fine luster and many have been cut into gem stones for rings and brooches. However, the larger crystals are notably lacking in the fine luster and transparency so noticeable in the small ones, but have instead, fractures, flaws, drops of water or other liquid, specks of carbon or iron, and are thus unsuitable for gems or other uses.

While most of the Herkimer county crystals, the ones for which the collectors go in a big way, are doubly terminated, some with single terminations, often cloudy or smoky, are found at Diamond hill near Salisbury, N. Y. Also, even near the fine "Herkimer diamonds" dolomite cavities sometimes are coated with dirty-looking drusy quartz, and these cavities never produce desirable crystals. Most of the brilliant Little Falls crystals already have been collected. At Middlevale, about all of the largest doubly-terminated gems, and even the crystal freaks, have been gathered.

Fluorescent stones sometimes appear. Donald Hurley, a collector who specializes in quartz, states, "Much of our Herkimer quartz possesses fluorescent traits or possibilities with a cold quartz lamp, and some of my Middlevale, N. Y., quartz crystals fluoresce beautifully and show spots of green, gold and yellow fluorescence."

Doubly-terminated crystals are rare in the places where dolomite rhombs and calcite are in evidence. But there are exceptions to the rule. Arthur Davis on one of his collecting trips made an unusual discovery of a large calcite crystal with a cavity in one side, and within this county, a double-terminated Middlevale quartz crystal. The quartz termination lying deepest in the calcite and the inside of the calcite cavity itself both were deeply striated.

Other unusual finds have been a large crystal badly shattered inside, but with the other side still intact; a group of three large and two small inter-grown crystals, with a water bubble blown out of one of them so as to form a geode; and a large Diamond Hill crystal with one termination almost effaced by rubbing on the dolomite.

The area of Herkimer county, where good crystals have been found, is quite small but if one perseveres, good gem crystals still may be found in many places, although not as easily as in past years.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

Don't yu love to see a nexpert rockhoun meet up with a unknown specimen! He duz a little licking, hefts th rock, scratches at it with a pocket nife, uses a hand lens on all sides 'n corners, fondles it a while then consults Dana to see if maybe his guess at identification is purhaps correct, before takin th rok to the labratory to make further tests. By the time he's finished with it he shure knows all there is to know about it.

There'll probally be more rockhouns in the comin generashun than there is now bucuz rockhouns' children, 'n specially grandchildren, seems jus natcherally to be born rockhouns. Bout the first thing they duz when they starts navigatin is to find all th rox in reach. Then shure as shootin they licks um meditatively. Like gron ups exactly. Then when they can walk they cumz in proud as punch, sayin, "Here wok, Bumpo, here nice fresh wok." The future looks bright for attendance at gem 'n mineral clubs.

Mama rockhouns has to be patient bout clutter in th house. Papa rockhouns 'n their frens are adept at strewin rox over tables 'n uther flat surfaces, but not so good at cleanin up afterward.

Imperial Valley gem and mineral society is placing a display of cut and polished material in their showcase in county court house, El Centro.

Paragraphs in Long Beach mineral news are separated by the announcement: Long Beach mineral show, October 15, 1944.

Mojave Desert Gem and Mineral Shop . . .

On Highway 91, 11 Mi. E. of Barstow
One Mile West of Yermo, Calif.
E. W. SHAW, P. O. Box 363, Yermo, Calif.

INSTANT IDENTIFICATION

—faster analysis, sorting and grading of fluorescent ores

MINERALIGHT
SAVES TIME and MONEY

S CHEELITE

MINERS — PROSPECTORS — GEOLOGISTS!

MINERALIGHT works like magic — lighting your way to hidden values in fluorescent ores — identifying your finds with quick evaluation. Used for faster, better ore handling in mining operations.

Hydrozincite
Zircon
Willemite
Fluorite
Talc
Mercury
and many others

A model for every purpose—all fully guaranteed—20 ore samples free with each lamp.

Write for free 4-color catalog today. Dept. T

ULTRA-VIOLET PRODUCTS, INC.
3205 SANTA MONICA BOULEVARD • LOS ANGELES 27, CALIFORNIA

RX—the complete lapidary shop in one small machine

No more sales during duration

W. A. FELKER 3521 Emerald St., Torrance, California

Covington LAPIDARY EQUIPMENT

SPECIAL

10-lb. package 300 (FF) grit for use with Old Miser only and one jar Old Miser Lapping Compound, all for . . .

\$3.50 F.O.B. Redlands

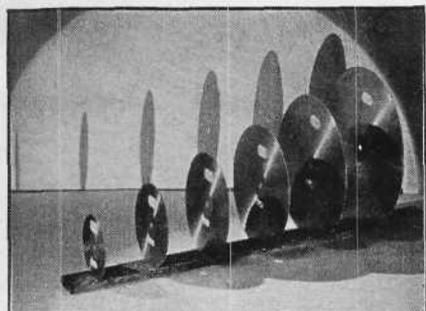
16-inch LAP UNIT

14-inch Power Feed DIAMOND SAW

Send for Literature to

Covington Lapidary Engineering Co. Redlands, Cal.

VRECO DIAMOND SAWS



We are now permitted to sell a limited number of these Improved Vreco Diamond Saws to civilian users.

Owing to production economies Vreco offers these faster cutting, longer life Diamond Saws at lowest prices,

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

Be sure to specify arbor hole size when ordering.

Vreco Lapidary Mfg. Co.
2020 S. W. Jefferson St. Portland, Ore.

HILTON'S Art and Gem Shop

JOHN W. HILTON, Owner

On U. S. Highway 99
Ten Miles South of Indio

Across from Valerie Jean Date Shop
P. O. ADDRESS, THERMAL, CALIFORNIA

AMATEUR GEM CUTTER

This page of Desert Magazine is for those who have, or aspire to have, their own gem cutting and polishing equipment. Lelande Quick, who conducts this department, is former president of Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, Calif.

By LELANDE QUICK

This isn't the place for it but I wanted to tell you that the war will be over on October 27. It happened this way. When I returned recently from the east a doctor friend told me this story in all seriousness. A patient of his had been to New York in April. It was her first trip there so she thought the best way to see a lot of it quickly and cheaply would be from the top of a bus. She boarded one and climbed upstairs. The only seat available was next to a Chinese and as she sat down he tipped his hat and smilingly handed her a dime. Before she had a chance to protest the seeming effrontery he told her that she would need it to pay her fare as she had left her purse on the bureau in her hotel room. Tearing open her handbag she found it was true and she was properly confused. She was filled with wonder and questions of course but try as she would she could not form one question of the many she wanted answered when her samaritan invited her to do so. He soon had to alight from the bus so he said "perhaps madame would like the answer to the question that is on everyone's lips. The war will be over on October 27." And with that he was gone.

Now there could be many interpretations of that prediction. The war could be over before this appears which wouldn't make the prophecy so ridiculous because it would still be true. Perhaps there are many versions of this tale, a tale that Alexander Woolcott would have drooled over, but I have heard no others.

I mention it because it started a train of thinking that has been bothering me for weeks. I would like to employ the services of "Ching" to tell me which one of a load of Chocolate Mountain geodes contains red crystals, to tell me just when they plow at Nipomo so that I could arrive while they were doing it and fill a sack with agates, to tell me when the best stones are "running" at Redondo Beach, to tell me where there is another Virgin valley, to tell me just where to dig for the best thunder eggs and to tell me of many undiscovered gem areas. Sometimes I get unreasonable requests like the one that came recently: "Mr. Quick, I'm just going to put myself in your hands for the duration. Tell me all the spots in San Bernardino county (the largest in the country) where I can find agate and chalcedony." I would turn over correspondence like that to "Ching" for reply. I could use him in so many ways. Before I ground a gem at all I would ask him if the final result would be worth it all and I'd take his advice—if the war IS over on October 27.

Having recently had occasion to purchase an expensive piece of carved coral for my collection I was gratified to learn that there was no 20 per cent federal tax on it "because," said the clerk, "there is only a tax on mineral figures, none on animal or vegetable and coral is vegetable matter." I tried to correct her by telling her it was animal matter but she ridiculed the idea for hadn't she seen the coral reefs growing like flowers with her very own eyes? It seemed futile to tell her that coral is the skeletons of countless polyps turned to carbonate of lime so I completed my purchase, grateful that I did not have to pay the heavy tax. But since it is a mineral it seems the government has missed a bet and I wonder if one could refuse to pay any tax on jewelry made of petrified wood on the ground that it was "vegetable matter." There is no tax on ivory because it is animal matter and these points are good to know.

While jade, ivory, coral and other carved gem figures always have commanded fancy prices they never again will be sold for as little as they are now for a world is coming soon where no artisan will work for four cents a day as did the Chinese who carved most of the figures now in existence. It is safe to say that any figure purchased at a hundred dollars today will be worth many times that in the markets of a few years from now. In purchasing such materials remember to purchase carving and not size. Purchase hard hand labor and not just material. A two inch figure intricately carved with great imagination is far greater in value than a six inch figure with large smooth areas and little carving.

Following last month's advice on coloring agates red I am giving herewith the methods used in Idar, Germany, for coloring agates blue.

Dissolve nine ounces of potassium ferrocyanide in a quart of water and permit the stone to be colored to soak in it about three weeks. After washing it thoroughly it should be placed in a saturated solution of ferrous sulphate made by adding that chemical to a quart of water until no more will dissolve. In about ten days the stone is removed and dried in the sun. If the stone is not the desired shade it is returned to the ferrous sulphate solution until the desired shade is attained. Chalcedony and jasper colored in this manner is referred to as "Swiss lapis."

If a dark blue is desired a few drops of nitric acid and a few of sulphuric acid should be added to the ferrous sulphate or the first solution can be changed to ferri-cyanide instead of ferrocyanide (red prussiate of potash instead of yellow).

The chemicals used in these coloring processes can be bought by the pound for very little from your local laboratory supply house or direct from chemical companies. Remember that sulphuric acid and water has an explosive action when warm and too concentrated. Otherwise no danger attends the use of these acids. All of these coloring agents work better if a way can be found to keep the solutions warm during the soaking.

DID YOU KNOW . . .

- Amygdaloid is the Greek word for almond and agates, usually almond shaped, are referred to as being amygdaloidal.
- Most agates are small, being rarely larger than an orange except agates from South America. The geodes found in this country are a combination of agate and quartz and are larger than solid agates.
- The largest agate ever found weighed two tons.
- Agates usually occur wherever trap rock exists.
- Unless chalcedony is banded it is not agate.
- Despite the appearance to the naked eye there are thousands of bands to an inch of thickness. As many as 17,000 to the inch have been counted.
- Until recently the agate was the birthstone for June having been superseded by the pearl.
- The largest agate diggings in the world at present are in the Catalan districts of Artigas, Uruguay.

LETTERS . . .

Souths Would Be Self-Sustaining . . .

Grand View, Idaho

Dear Desert:

Mrs. Baur, in her "chest-thumping" letter, seems to have missed the fine high glow that burns in all of Marshal South's writings. The lady cannot know any intimate things about desert life or she would realize that all he writes is of vital interest to one who knows his desert.

Sustaining life on any desert is no small matter. I have never felt the slightest degree of the "I-am-better-and-wiser" attitude in any of his articles. One must be wise, that is true, to live on the desert. One must be wiser than the city dweller—to the ways of the desert—to sustain life there. Marshal South might be helpless in the city, but I do not believe he would. He is too inventive for that.

Mrs. Baur asks what the South family would do for food and paper and doctor bills if it were not for the city folks. My answer is that the South family would get along all right. There is a spirit in his and Mrs. South's writings that is vital, strong and full of courage that could not die out.

About all this criticism he must smile in tolerance. You cannot open some people's eyes to the desert. Mr. South must feel as the great artist did when he with others stood before his painting of the Master standing by the door with a lighted lantern in His hand. Someone said to the artist, "You have not finished the painting—you have forgotten to put a handle on the door." The great artist replied, "Yes, it is finished. That is the door to the human heart. It can be opened from the inside only."

E. A. BRUBACHER

No Ego in South Articles . . .

Marion, Ohio

My Dear Miss Harris:

Please tell Marshal South to pay no attention to the Los Angeles lady with the shoulder chip who seems to regard herself superior to those who live outside city limits. She no doubt can secure the information she wants by writing Washington, D. C., for bulletins on the subjects she likes. Many of your readers are not vitally or practically interested in making adobe bricks or preparing a mescal roast, but all the charm of his letters would be lost if such items were omitted.

Many of us are exiled from the desert, just now, much farther away than Los Angeles, and the South letters help greatly in bringing the desert to us here in the east.

We have read all South's letters and found no trace of ego in any of them.

MRS. C. L. DOBBINS

Open Letter to Marshal South . . .

Figarden, California

I have thought for a long time I would write in protest of your superciliousness but I waited to cool off. Then your article of May, 1944, was the last straw in your effrontery to the Southwest.

As a native of this country, born and bred of people who have been here not two or three generations but seven and eight and longer, I feel it is a duty to let DM know how I and other readers I have consulted feel about the space accorded you in this otherwise fine magazine. I have known life firsthand from early childhood, barefooted, among the rattlesnakes in the back countries of Texas, New Mexico, Arizona and California. And that childhood dates back to more than 50 years. I knew it in the raw and this sham of yours is pretty stupid stuff.

If you were on the square with yourself you could see as well as we that you are gratifying your own selfish desire to make and dominate your own little world. You are kidding yourself that you are doing something big for your children, but you are making inhibited little snobs of them—not the aristocratic type but more brutish and uncouth and even more artificial than your hated aristocrat, as Rudyard's vocabulary shows. Being a misfit is your privilege but it is society's business when you set up a small dictatorship to manufacture misfits, even if they are your own children.

You have gone off on a tangent of getting back to nature in a physical way which is as futile as the one in which the Balzac character went in the "Search of the Absolute," and like his, your family will be sacrificed on the altar of your fetishism. If you made a fraction of the effort to do some original thinking that you do to make some spectacular physical imitation of a Southwest native, you really would benefit yourself and mankind.

You will not rise above that "realm of tooth and claw," in which you mention living, by climbing a mountain. Tanya's poems show that she knows this truth, but you are so concerned with platitudes of barefoot health and diet fads, to say nothing of poor Indian craft counterfeits, that you seem to have no sense of values. But in the meantime you write down to us that we are all out of step but you in this grand march. My friends and I have grown up with the Indians. They are our friends, and they do not need a tenderfoot's pretended defense.

SUSAN GROENE

Are Desert Men Egoists? . . .

Baker, California

Dear Desert Mag:

Mrs. John C. Baur, Jr., writes a delicately suggestive letter of disapproval to which most of us Desert dwellers will have to plead guilty, with extenuating circumstances.

Desert dwellers do not display nearly as much trepidation and ignorance when in the city as city people do in the desert. City people on their first trip to the desert nearly always are disgusted until they have spent enough time to become sensitive to its beauties and peacefulness. Then they often display more enthusiasm than the oldtimers and wish to remain indefinitely. Desert dwellers enjoy a city visit for a short time but the longer they stay the more disgusted they become. Ever hear of a desert dweller wishing to *escape* to the city? Lots of us desert dwellers spend our vacations seeing more of the desert. Ever hear of a city man spending his vacation seeing more of the city?

Select any city man you wish, put him where he can get no manufactured supplies; put Marshal South in the same position and Mr. City Man will lag so far behind that there would be no comparison. With a small fraction of the raw materials City Man will require, Marshal will keep his family in opulence. I will give hearty odds on that, and I have never seen Marshal. But I do know many desert dwellers, and I doubt that Marshal is below par.

How can any desert dweller always hide the feeling of "I-am-better-and-wiser-than-you-because-I-live-on-the-desert." Everything animate that lives on the desert has that look.

ELMO PROCTOR

More Power to Chest-Thumping . . .

Utica, Ohio

Dear DM:

Why must you publish such a letter as Mrs. Baur's in the August issue? Her distorted viewpoint and destructive criticism ruins an otherwise harmonious page of letters. More power to Marshal South and his chest-thumping! They have found peace, solitude and independence. They are free from the veneer of civilization.

B. JAY PURDY

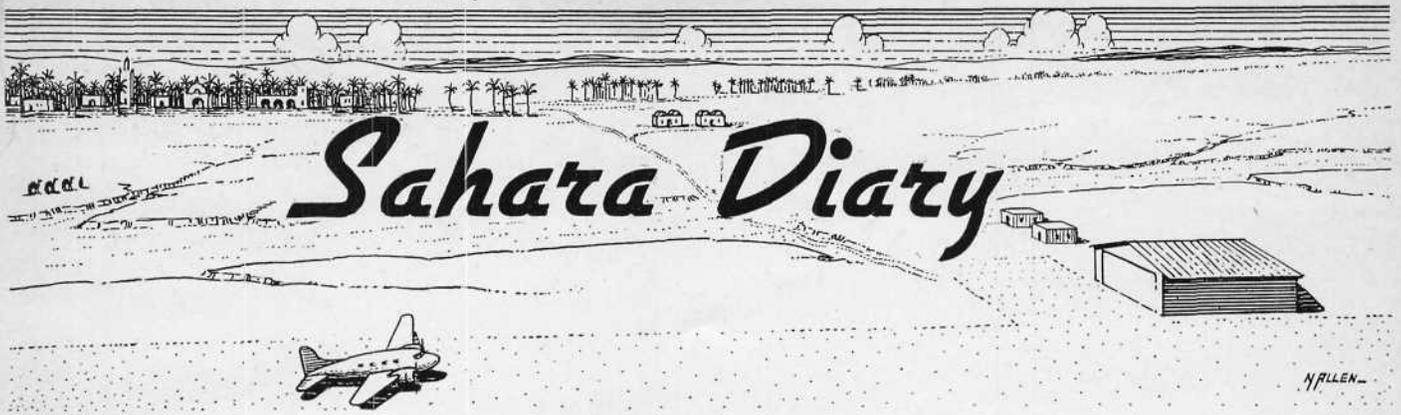
South Not a Chest-Thumper . . .

Prescott, Arizona

Editor Desert Magazine:

Marshal South is not, and never will be, a "chest-thumper." He is so humble, so thoroughly imbued with a love of nature in her lowliest forms that people "of the world" sometimes mistake him. He speaks of the things of the soul—lasting things—and he finds them in a desert land amid a desolation that would strike terror to the heart of a person less attuned to the Infinite.

DORA SESSIONS LEE



By RANDALL HENDERSON

WITH THE ALLIED FORCES IN NORTH AFRICA—Early in May when the temperatures at this Sahara oasis reached 113 degrees at midday I was ready to predict that we were in for a long hot summer. But I have had to revise many of my schoolbook notions about arid North Africa. I have learned that the Sahara is neither an unbroken expanse of rolling sand dunes, nor a region where unbearably hot days follow each other with such monotony that only the strongest can survive and keep their sanity.

Neither of these concepts is accurate. It is true there are great plains of sand. I have flown over them for hours. But it also is true that these sand wastes are broken by mountain ranges, gorges, escarpments, plateaus, buttes and in fact all the topographic features which give endless variety to our own American desert.

As for the weather in this western region of the Sahara, it is unpredictable—at least for a tenderfoot from southwestern U.S.A. One day in June the traffic crew loaded two big generators on a transport plane at noon—and the metal was so hot the men had to use thick pads of rags to protect their hands. Ordinary gloves were not adequate. And that night we slept under a blanket. There are many days when a haze of yellow dust closes in around us until we cannot see the high escarpment four miles from the field. At the same time there is hardly enough breeze to fill the windsock that gives landing direction to the pilots.

The weather officer explains that this haze is due to sandstorms elsewhere on the Sahara. The fine dust is carried aloft at some distant point, and when there happens to be no wind overhead here to keep it moving it descends on us in a yellow fog. Likewise, the sand that whirls aloft when we have a strong wind may shower down many hours later on the black tents of desert nomads many hundreds of miles from here.

So we get the dust both going up and coming down. When the wind blows we are blasted with our own dust. And when the wind stops we are showered with a thick haze of yellow flour that was carried aloft elsewhere on the desert. There is always a sandstorm blowing somewhere on the Sahara.

But I do not mean to imply that summertime on the Sahara is a season of perpetual dust. The nights, with few exceptions, are delightful. The air generally clears after sundown. There are no malarial mosquitoes here and we sleep out under the stars. Toward morning a cool breeze nearly always makes it necessary to pull on a sheet or even a blanket. This refreshing breeze continues until eight or nine o'clock. If you were to fly into our field for a brief visit during these early morning hours you would go home and tell your friends that the Sahara has the most delightful summer climate on earth. But if your plane was delayed a few hours and you stepped off your transport into the scorching dust-laden blast of early afternoon you would ever after vow that this climate was manufactured in hell—and not too far away at that.

Anyway, we have lots of variety. Too much of it at times.

For instance at noon today while a plane circled overhead getting landing instructions the wind changed directions three times in 18 minutes. The pilot finally decided we were all crazy down here in the radio room, and hung up his headphone and picked his own runway. That was the smart thing to do under the circumstances.

With all its sandstorms and dust-fogs, the Sahara has its advantages. I prefer it to the humid sticky atmosphere of tropical Africa where I was stationed a year ago. It took six months to get the musty smell out of my clothes after that tropical assignment. Here there is sand in our salt at times, but we never have to unscrew the top of the shaker to get the seasoning out.

* * *

Our first summer shower came late one afternoon while we were eating our evening chop. The sky clouded over and a blast of wind filled the air with dust. I looked out the window just in time to see the top blow off my jeep. Then the rain came. Rain on the desert! You have to spend months on a dry parched desert to appreciate the miracle of rain. There was a hum of excitement around the mess table. Some of the men rushed out on the porch to see the shower. Others started a song. The half-naked Arab mess boys went out to feel the cool drops of water on their bodies. Two of them tackled the job of restoring the top on the jeep—glad for an excuse to be out in the rain.

When it was over I went outside with the others. Everyone was in high spirits, but there was something lacking. Then I knew what it was. The scent of creosote. Rain on my home desert fills the air with the pungent odor of greasewood. I like that smell. Rain and creosote have been associated together in my life for so many years that this Sahara shower did not seem quite natural. There is no greasewood here—but it was a welcome shower for all that.

* * *

This evening just before sundown I heard singing so weird and familiar that I rushed out of my quarters to see from whence it came. The picture it brought to my mind was of painted Indians—the Antelope clansmen coming out of their kiva and trotting along in single file toward the open court where they are to participate in the annual Snake Dance of the Hopi Indians in northern Arizona.

At first there was no one in sight, but the chant grew louder, and then around the corner of a mud building a half block away came a motley gang of blacks—Senegalese, not Arabs. Many of them live on this oasis. Two of them pulled a two-wheeled cart, others were pushing, and some were just straggling along. Their song was not the falsetto of the Navajo, but the guttural chant of the Hopi mesa with a staccato emphasis at certain intervals. It was a chord that one unconsciously identifies with primitive people. Such music stirs something deep within one—it never can be forgotten.

The blacks, many of whom are on slave status—although under French law they could have their freedom if they wanted it



The Sabara Oasis where Capt. Henderson is stationed extends for many miles along the dry sandy bed of an African wadi. This picture, taken by the Desert Magazine editor, shows just a small section of the oasis. These are all native date palms, and underneath the dunes in which they are growing is a great underground reservoir—a catch basin filled at irregular intervals by the storm waters from the surrounding rains. Two grass huts which are occupied by nomad Arabs during the annual date harvest season are seen among the trees.

It is easy to understand why 14-year-old Wadou is a favorite with the American soldiers. He is one of the native laborers employed to maintain the airfield. Until they have passed the adolescent age Arab boys wear a scalp lock for religious reasons. They are all good Moslems.

Street in the native village located in the oasis. These dwellings are of mud and stone with mud roofs. They are extremely cool during the summer and provide comfortable housing, but are almost without furniture. The Arabs sleep on goatskins spread on the mud or stone floor. Meals generally are cooked in a small stone fireplace, and the prepared victuals are served on the floor with the family seated around them on skins or rugs. Only a small part of the desert population lives within such settlements as these—a majority of the Arabs being nomads who seldom come to "town."

—dance and sing in the oasis nearly every evening. These evening festivals are more like darky camp meetings than the ceremonial dances of the aborigines. But somewhere out of the past this little group of mud-haulers had revived a chant from the ancient jungle or desert—and that was the song that brought me out of my quarters with visions of the dancing clansmen of Hopi. Only once in the six months I have been here have I heard that unforgettable music.

* * *

Houmadi, the chief of this oasis, is building a new business block in the market place. Rather, Houmadi sits by in a flowing white tunic while his Senegalese laborers haul mud and make the adobe bricks for the structure. It was one of his work gangs who sang the ancient chant I mentioned above.

Throughout central Africa the mud for a new building normally would be carried on the heads of the workers. But Houmadi is progressive. He salvaged some old automobile wheels. They came from the junk yard where lie the relics of vehicles once used for the long stage run from the seacoast to this oasis. With these wheels, the chief made carts, also of salvaged material, to speed up the transport of mud and rocks, or whatever is to be hauled. One cart with a half dozen men will move as much mud as would require a hundred head-carriers. This oasis is becoming civilized.

* * *

Many of the air travelers who pass through this desert service station and off-load for a few minutes while the plane is being refueled, now carry souvenirs. I have given permits to two of the native metalsmiths who turn out crudely hammered paper knives and ingenious padlocks of brass and copper, to bring their products to the airport. They are picturesque salesmen in their blue robes and turbans. They speak only a few words of English, and when the customer is unable to understand their broken French, they squat down and draw figures in the sand. The prices always are quoted in francs, for that is the only kind of money we ever see here—ragged paper francs issued by the various French territorial governments in many sizes and designs.

The two Arabs are very jealous of each other. One of them is a better craftsman than the other. The inferior workman complains that his competitor charges too much for his wares. I have been assured by each of them that the other is "no good."

Every few days Hamed offers me a bribe to cancel the permit of Sidi, and vice versa. But I am against monopoly. We have some of it in America. It is no good.

* * *

If any of the readers of Desert Magazine are curious to know the location of this oasis on the Sahara; I can give them exact information without violating any of the army's rules for security. Our geographical position is identified by a sign which one of the boys stuck up along the runway. It reads:

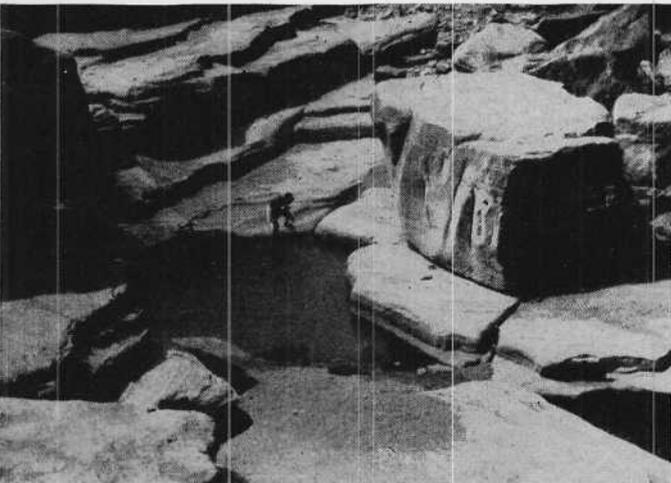
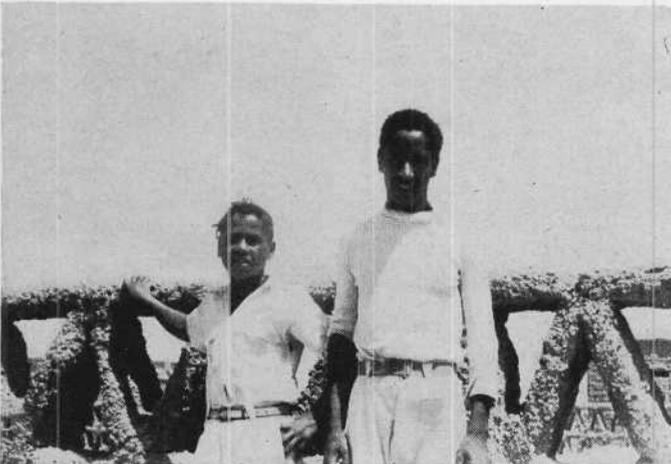


I overheard some of the men arguing about the distance to hell. The soldier who put the sign up was defending his figures by explaining that it happened to be a cool day when he took the measurement.

* * *

In previous Diary notes I described my camel trip to the fishing and swimming pools we found in a canyon about 11 miles from our camp. When I returned from that trip and told the men in my outfit about the fine swimming hole I had found, they all wanted to go there. So we arranged a weekly camel excursion. Every Saturday afternoon a caravan treks out of camp with GI's perched on a half dozen or more of the camels. The trippers sleep that night on the floor of the rocky canyon where the natural tanks are located, and return Sunday afternoon, having had a fish dinner cooked on an open fire, and "plenty good swim," as Taleb explains it. Taleb usually goes along as interpreter.

Recently I made a return visit to the tinajas. This was in mid-summer, and after a three-hour camel ride on a 112-degree aft-



- 1—It's a sandy desert—but these date palms have their roots in water.
- 2—Bopepe would like to return to America with his soldier friends.
- 3—Brabeme (left) and Ahmed are employed as houseboys in the American camp. They are devout Mohammedans and faithful workers. They speak Arabic and French, and have learned enough English since the American soldiers have been stationed at their oasis to serve as interpreters.
- 4—The Sabara has its waterholes—refilled at long intervals by storm water.

ernoon, I assure you the cool water in the bottom of the canyon was a gift from heaven.

The dates were beginning to ripen and several families of nomads were camping in the little oasis that grows near the water. One of the Arabs wore the insignia of a high chief. They were all very friendly, and visited our camp and gave us a generous supply of their dates. We slept that night on the sand among the palms, and the rustle of wind blowing through dry palm fronds brought the same drowsy contentment I have felt scores of times before, camping among the native palms of the oases on the Southern California desert.

But my dreams of rustling palm fronds on the home desert received a rude interruption before morning. For reasons which I probably will never know, Hou-ao, our cameleer, decided during the night that he wanted to sing. Maybe the army chop which we fed him for supper did not agree with him, or perhaps he was happy over having the first full meal he had eaten in many months. Anyway, about three a. m. he opened up with a loud chant that awakened everyone in camp. His voice was raspy and his music without melody. We stood it for about 15 minutes and then I asked Taleb to explain to Hou-ao that while his singing was very grand, the Americans requested that he go a mile down the canyon to finish his concert. And that was that. We heard no more from Hou-ao. Apparently he felt no resentment—at least not after we had stuffed him with a good breakfast.

We took a last dip in the cool water, and returned to our base camp in midafternoon, reaching the barracks just as a sandstorm blotted out the landscape. The camels were so glad to be rid of us they even omitted the usual groaning and bellowing when we off-loaded. And the GI's were glad too. Three hours in the pocket-seat of a camel saddle is about all a tenderfoot can take at one sitting—and enjoy.

* * *

The nomads are trekking in from all this desert region for the date harvest. There will be singing and dancing and camel-racing in the oasis. This is a time when everyone will have plenty to eat. These desert folks are still living in an economy of scarcity. The main problem of their existence is food. Yet despite the ever-present struggle for enough to eat they appear to be quite contented with their lot. No less so, I suspect, than my American neighbors at home who under normal peace-time conditions are living in an economy of abundance—and haven't yet figured out a way to distribute that abundance equitably.

But we will solve that problem. The pace of human progress is very slow at times—but over a long span of time it is always forward. In the meantime the mighty German military machine appears to be near the point of collapse. We already are making plans here for a joint celebration of French, Arabs and Americans, to be held on Surrender Day.

I am sure the local Arabs will put much enthusiasm into the festivities. Relations between the native tribesmen and the American soldiers have been very cordial. The Arabs will miss the food and payrolls and goodwill we have passed along to them. And on our part there will always be in memory a kindly feeling for the dark-skinned neighbors who never failed to greet us with a smile and a military salute.



Rand

EARLY in July, I believe it was the 5th, Rand wrote me: "No doubt you've been wondering what has become of one son, GI Model 1920. The question cannot be answered yet. But I am in fine fettle and spirits are good . . . My head is buzzing with ideas for my next editorial for Desert Magazine. Nothing on paper yet but with the proper cooperation I will have it out in two or three weeks."

Two days later Rand was killed in action—on Saipan. He was with the 2nd Marine division. The message was relayed to me in Africa August 3. I know now the heartache that the daily casualty lists bring to hundreds of parents. Those daily lists in the newspapers are something remote and impersonal—until one you love is among them.

Rand was an idealist, and like all idealists, something of a philosopher. He and I have camped together on the desert and in the mountains since he was eight. In the evenings he would sit on his bedroll by the flickering campfire and discuss his philosophy of life, and his plans.

He believed his generation would create a world in which there would be more of cooperation, more of tolerance, less of greed and fear and hatred. When he enlisted in the Marines he felt that he would be fighting for those ideals.

Rand was never bitter. He felt that the human family is involved in a great world-wide struggle between freedom-loving people on the one side, and those who would impose some form of racial or economic slavery upon their fellow-men on the other. And that the conflict, in its broader concept, is not merely a conflict between nations, but a horizontal cleavage in which men of good will in every race and nation are opposed to those with ignorant and selfish motives.

The war, he felt, is merely a symptom of a deep-seated unrest in the hearts of men and women around the world. The Axis powers must be defeated. But that would not be the final answer. The "master race" would be beaten—but there still would remain the problem of the "master men" within every race and nation—men who regard themselves as superior because their skin is white, men who take advantage of human inertia to make a racket of unionism, men who form combines and cartels to restrict production and control prices, men who resent strongly centralized government because it interferes with the "free enterprise" of powerful and ruthless capital.

Rand felt that excessive wealth and extreme poverty no less than Germans and Japanese are the enemies of peace and happiness. He was planning to be a writer because he wanted to be a crusader for the things in which he believed, and he felt that his most effective weapon would be a typewriter.

There are many men and women in America who share Rand's ideals. We have a small but potent group of them on the staff of Desert Magazine—associates who will carry on because we want to keep faith with the men who have given their lives in this war, and we believe in the ultimate triumph of ideals for which their lives have been sacrificed.

—RANDALL HENDERSON

A

Abeyto, Josefa Sep 44 p5
 Acoma, New Mexico Dec 43 p11, Sep 44 p13
 Adams, Frank and Dick.
 Desert Philosopher Dec 43 p10
 Feb 44 p22, Mar 44 p13, May 44 p8
 Adams, Thomas C. Feb 44 p4
 Adobe, construction Dec 43 p14
 Jan 44 p29, Feb 44 p27
 Adobe home, decoration Dec 43 p14
 Adobe home, whitewash Mar 44 p17
 Jul 44 p27
 Aguirre, Teso Mar 44 p14
 Aleson, Harry Jan 44 p31
 American Magnesium Co. May 44 p9
 Anaconda Copper Co. Jun 44 p10
 Anderson, Clinton Aug 44 p13
 Anderson, Helen Ashley. *Miner's Wife in
 the Copper Hills* Aug 44 p13
 Antelope Island, Great Salt Lake Feb 44 p4
 Ants, harvester Aug 44 p17
Apis glacialis Jun 44 p4
 Armer, Laura Adams and Sidney.
 Close-ups Nov 43 p3
 Armer, Sidney. *Desert Garden in
 Navajo Land* Nov 43 p20
 Arnold, Adele and Oren.
 Adobe Home Dec 43 p14
 Arnold, Oren. Author of—
 He Did It For Fun Jan 44 p25
 Craftsman in Cactus Wood Apr 44 p10
 *Swing yore partner round 'n
 round* Aug 44 p9
 Artists—
 Rufina (Blue Water) Feb 44 p9
 Santee, Ross Jan 44 p25
 Assassin bug Aug 44 p17

B

Bagdad Copper Corp. Aug 44 p13
 Baker, Jim Nov 43 p5
 Bandelier, Adolph Sep 44 p13
 Basic Magnesium, Inc. Jun 44 p10
 Baxter, Wm. T. May 44 p36
 Beal, Mary. Author of—
 Meet the Trailing Milkweed Nov 43 p28
 Rubbery Milkweed Clan Jan 44 p4
 *Shrub That Smells Like Turpentine—
 But Isn't* Feb 44 p8
 *You're Sure to Meet the
 Blue Daleas* Mar 44 p19
 The Changeable Gilias Apr 44 p24
 Desert's Scarlet Buglers May 44 p17
 Parade of the Pentstemons Jun 44 p9
 *Desert Tobacco Grows on
 Trees and Bushes* Aug 44 p2
 *Quailbrush and Holly Belong to This
 Salty Family of the Desert* Sep 44 p27
 *Golden Rabbitbrush is
 Indian Chewing-gum* Oct 44 p10
 Beard, John May 44 p4
 Beckwith, Frank Nov 43 p5
 Ben Wittick Arch (Royal Arch) Jan 44 p10
 Betatakin Indian Ruin, Arizona Jan 44 p16
 Birdlife, Ghost Mountain, Calif. Dec 43 p27
 Jan 44 p29
 Birdlife, Western Colorado May 44 p5
 Birds—
 Butcher bird (White-rumped
 Shrike) May 44 p15
 Gambel quail Sep 44 p17
 Roadrunner (Chaparral Cock) Nov 43 p19
 Jan 44 p22, Mar 44 p25, Apr 44 p9
 Western Horned Owl Mar 44 p8
 Black Butte, California Dec 43 p29
 Black Canyon, California Feb 44 p3
 Mar 44 p5
 Black Horse, Navajo Indian Jan 44 p10

Black Mountain trading post Nov 43 p20
 Blackford, John Lindsey. Author of—
 Nomads of Inside-the-Rocks Feb 44 p17
 Desert Landscapes Apr 44 p19
 *Photographing Quail Babies in
 the Desert* Sep 44 p17
 Desert Wonderlands Oct 44 p17
 Blind Valley, Utah Jun 44 p4
 Blue Water (Rufina) Feb 44 p9
 Bonneville Lake, Utah Aug 44 p19
 Book reviews—
 Alter (Trans.), *Father Escalante's Journal*,
 May 44 p39; Armer, *Southwest*, Feb 44 p2;
 Cleland, *Cattle on a Thousand Hills*, Mar 44
 p31; Dana, *Textbook of Mineralogy*, May 44
 p39; Eddy, *Down the World's Most Danger-
 ous River*, Feb 44 p2; Greenwood, *Down to
 Earth Mapping for Everybody*, Sep 44 p39;
 Groves, *Famous American Indians*, Sep 44
 p39; Haselton, *Cacti and Succulents*, Feb 44
 p2; Haycox, *The Wild Bunch*, Jun 44 p14;
 Hewett, *Campfire and Trail*, Jul 44 p39;
 From Cave Dwellings to Mount Olympus,
 Sep 44 p39; Hinds, *Geomorphology*, Mar 44
 p 31; Kent, *Range Rider*, Nov 43 p37; Lav-
 ender, *One Man's West*, Dec 43 p2; Lipp
 and Besso, *Conversación, Conversational
 Spanish*, Jun 44 p14; Lockwood, *Life in Old
 Tucson*, Dec 43 p2; *More Arizona Charac-
 ters*, Feb 44 p2; Martin, *Hills of Home*, Jul
 44 p39; Mera, *Pueblo Indian Embroidery*,
 Jun 44 p14; Nichols, *Crazy Weather*, Jun 44
 p14; Oliver, *99 Days in the Desert*, Nov 43
 p37; Pannell, *Civil War on the Range*, Mar
 44 p31; Reichard, *Spider Woman*, Nov 43
 p37; Schiller, *Mexican Time*, May 44 p39;
 Short, *Ramrod*, Nov 43 p37; Sinclair, *In Time
 of Harvest*, Jul 44 p39; Sloane, *Clouds, Air
 and Wind*, Sep 44 p39; Smith, *History of the
 Comstock Lode*, Jun 44 p14; Valadez, *Desert
 Spanish Pronto*, Mar 44 p31; Walker, *South-
 ern California Indians*, Jul 44 p39; Warren,
 Only the Valiant, May 44 p39; Watkins, *The
 Navajo*, Mar 44 p31; Adair, *Navajo and
 Pueblo Silversmiths*, Oct 44 p2; Bruff, *Gold
 Rush*, Oct 44 p2; Laut, *Pilgrims of the Santa
 Fe*, Oct 44 p2.
 Botany (see also Cactus, Plantlife)—
 Daleas Mar 44 p19
 Desert Holly Sep 44 p27
 Desert tobacco Aug 44 p2
 Gilias Apr 44 p24
 Joshua tree Jun 44 p19
 Pentstemons Jun 44 p9
 Quailbrush Sep 44 p27
 Rabbitbrush Oct 44 p10
 Rubbery Milkweed Jan 44 p4
 Scarlet Buglers May 44 p17
 Trailing Milkweed Nov 43 p28
 Turpentine Broom Feb 44 p8
 Botany—Creosote, uses Jul 44 p12
 Botany—Desert Herbs, medicinal Apr 44 p25
 Botany—Desert landscape types Apr 44 p19
 Botany—Desert plants, character-
 istics Jul 44 p8
 Boyd, Keith and Lucille Feb 44 p23
 Bradt, George McClellan. *Close-ups* Jan 44 p3
 Bradt, George McClellan. Author of—
 Desert's Cuckoo Bird Jan 44 p22
 Horned Owlets Mar 44 p8
 Desert Butcher May 44 p15
 Bransford, Wallace May 44 p23
Brothers of Light Apr 44 p3
 Brothers of Light Apr 44 p5, Sep 44 p13
 Brown, Bertha Greeley. *He Found
 Beauty in Salt* Aug 44 p19
 Brown, E. K. Aug 44 p19
 Brown, Mora M. Jun 44 p27
 Brown, Mora M. *Spider House* Apr 44 p15

Burcham, Dr. Rose LaMonte Apr 44 p31
 Bushnell General Hospital Feb 44 p31
 Byron, George "Scotty" Feb 44 p32

C

Cactus, emigration Mar 44 p26
 Cactus, furniture Apr 44 p10
 Cactus, gardens Nov 43 p20
 Cactus, landscape photos Apr 44 p19
 Cactus, saguaro Apr 44 p10, Jun 44 p15
 Cactus, whitewash recipe Jul 44 p27
 Cactus "wool" Nov 43 p18
 Calexico, California Jul 44 p20
 Call, Frank Aug 44 p19
 Camels May 44 p37
 Jun 44 p37, Aug 44 p37
 Canaries, in Death Valley Aug 44 p23
Cañon Maid, Major Powell's boat Nov 43 p5
 Canyon de Chelly, Arizona Jan 44 p16
 Carboniferous Age Sep 44 p19
 Carlsbad Caverns, New Mexico Nov 43 p11
 Carricart, John Mar 44 p5
 Carrington Island, Great Salt Lake Feb 44 p4
 Carrizo Mts., Ariz.—Geology Jan 44 p10
 Carson, Kit Jan 44 p10, Feb 44 p4
 Caruthers, William. *Close-ups* Aug 44 p3
 Caruthers, William. Author of—
 Shorty and the Lost Chinaman Nov 43 p25
 *The Man Who Heard Music in
 the Desert Darkness* Aug 44 p23
 Cassell, Lt. Richard L. *Close-ups* Jun 44 p3
 Cassell, Richard L. *Intimations of an
 Unseen World* Jul 44 p20
 Cassidy, "Butch" Mar 44 p10
 Castle Dome Mts., Arizona Oct 44 p5
 Cave of the Meadows,
 Organ Mts., N. M. Mar 44 p14
 Ceballos, Francisco de la Mora Jul 44 p13
 Chalfant, W. A. Jan 44 p31
 Child of the Earth (*Niño de
 la Tierra*) Jul 44 p27
 Clay, Norman William. *Close-ups* May 44 p3
 Clay, Norman William. *The Rock Hunter
 is a Queer Character* May 44 p20
 Colorado River, boat expeditions Jan 44 p31
 Colorado River, Lee's Ferry Nov 43 p5
 Confusion Mts., Utah—Geology Jun 44 p4
 Cookery, Yaquitepec style—
 Baked beans Apr 44 p29
 Juniper berry Indian cakes Dec 43 p27
 Mescal roast Jun 44 p25
 Tortillas Feb 44 p27
 Unleavened bread Apr 44 p29
 Crafts (see also Indian crafts)—
 Basket making, Yaquitepec May 44 p13
 Cactus furniture Apr 44 p10
 Pottery making, Yaquitepec Feb 44 p27
 Creosote, uses Jul 44 p12
 Crocker, Thomas Nov 43 p9
 Cummings, Dr. Byron Jan 44 p16

D

Date Palms, Sahara desert Jun 44 p37
 Jul 44 p37
 Death Valley country Nov 43 p25, Aug 44 p23
 Death Valley dunes, photo Jan 44 p5
The Delight Makers Sep 44 p13
 De Luce, Mrs. Eliza Oct 44 p5
 De Oñate, Don Juan Apr 44 p5, Jul 44 p13
 Desert Refuge Each issue
 Devil's Canyon ranch, Colorado May 44 p4
 Docey Doe club (Square-Dancers) Aug 44 p9
 Dodge, Henry Chee Jan 44 p10
 Dodge, Frank Nov 43 p5
 Dorr, Susan Elva. *Pagan Easter in
 New Mexico* Apr 44 p5
 Douglass, Prof. A. E. Jan 44 p16

E

Eaton, Arthur L. (Ed.) Gems and Minerals department Each issue
 Eaton, Louise. *Cogitations of a Rockhound* Each issue
 Ekker, Neilus Sep 44 p9
 El Alisal, C. F. Lummis' home Sep 44 p13
 El Morro mesa, New Mexico Jul 44 p13
 El Paricutin volcano, Mexico Jun 44 p33
 Emise, C. A. May 44 p23
 Enchanted Mesa, N. M. Sep 44 p13
 Escalante, Fr. Silvestre Velez Nov 43 p5
 Escalante Crossing, Colorado river Nov 44 p10
 Escalante Crossing, Colorado river Nov 43 p5
 Estergreen, Marion. *Cave Where Brujas Dwell* Oct 44 p11

F

Fairbanks, Ralph Jacobus "Dad" Dec 43 p31
 Fairy Stones (Staurolite) Jul 44 p33
 Five-acre tracts Aug 44 p27
 Fluorescence Mar 44 p13
 Fluorescence Nov 43 p36, Aug 44 p33
 Fort Defiance, Arizona Jan 44 p10
 Fort Lowell ruins, Arizona Nov 43 p4
 Fossil Mountain, Utah Jun 44 p4
 Fossils—Ordovician, Utah Jun 44 p4
 Fossils—Permian, Arizona Sep 44 p19
 Foster, Mark Sep 44 p36
 Fountain, Col. A. J. Mar 44 p14
 Franciscan Order, history Apr 44 p5
 Frazier, Guernsey Jun 44 p10
 Frazier, Dr. Russell G. Nov 43 p5
 Freeman, Catherine and Dick. *Mojave's Giant Lily* Jun 44 p19
 Fremont Island, Great Salt Lake Feb 44 p4
 Fremont, John C. Feb 44 p4

G

Gabbs Valley, Nevada Jun 44 p10
 Galloway, Nathan Nov 43 p5
 Gallup, New Mexico Jul 44 p13
 Garrison, Lon. *Hard Rock Shorty* Nov 43
 to Jan 44; Apr 44, Jul 44
 Gem Cutter department Each issue
 Gem and mineral collecting—
 Arizona, northwestern Aug 44 p13
 California, southeastern Jun 44 p15
 Colorado, western May 44 p4
 Nevada, southwestern May 44 p20
 Sahara desert Sep 44 p37
 Utah, Great Salt Lake Aug 44 p19
 Gem and Mineral department Each issue
 Gems and minerals—
 Amazonite Oct 44 p27
 Brochantite Oct 44 p27
 Cat-eyes May 44 p27, Sep 44 p36
 Chalcedony, California locations Mar 44 p36
 Chanite (new alloy) Nov 43 p34
 Corundum Jan 44 p35
 Diamonds Jan 44 p35
 Feb 44 p35, Sep 44 p33
 Dolomite, test Jan 44 p35
 Feldspar Mar 44 p33
 Fluorite Aug 44 p33
 Garnets Apr 44 p35
 Hematite Feb 44 p35
 Iceland spar Nov 43 p34
 Jan 44 pp 14, 37
 Indium Nov 43 p33
 Jade Jan 44 p38
 Feb 44 p35, Jul 44 p36
 Lucite "jewelry" Jan 44 p38
 Mar 44 p36, May 44 p36
 Magnesite Jun 44 p10
 Magnesium sulphate (Epsom salts) May 44 p9
 Mica-and-albite Sep 44 p33

Nu-lite Feb 44 p35
 Opal Mar 44 p36
 Jul 44 p33, Aug 44 p33
 Pectolite Apr 44 p35
 Quartz Nov 43 p27, Jun 44 p33
 Oct 44 p29
 Salt crystals (halite) Aug 44 p19
 Stannite (tin ore) Nov 43 p33
 Staurolite (fairy crosses) Jul 44 p33
 Aug 44 p27
 Turquoise, Lower California Nov 43 p34
 Vermiculite Jan 44 p35
 Wavellite Dec 43 p35
 Wulfenite May 44 p33
 Zincite Nov 43 p35
 Zircon Feb 44 p34
 Gems, artificial coloring Sep 44 p36
 Oct 44 p30
 Gems, birthstones Feb 44 p37
 Gems, cutting Mar 44 p33
 Gems, displaying Dec 43 p34
 Gems, drilling Feb 44 p34
 Gems, grinding wheels May 44 p36
 Gems, mounting Nov 43 p36
 Gems, polishing Nov 43 p36
 Apr 44 p38, Jul 44 p36
 Gems, U. S. production, 1942. Nov 43 pp 33, 35
 Geologic time-table Aug 44 p5
 Geology, Arizona Jan 44 p10
 Aug 44 p5, Sep 44 p19
 Geology, California Dec 43 p21
 Mar 44 p20
 Geology, Utah Jun 44 p4
 Sep 44 p9
 Gilbert, Hope. *Close-ups* Sep 44 p3
 Gilbert, Hope. *He Discovered the Southwest for Americans* Sep 44 p13
 Goblin Gulch, Colorado May 44 p4
 Goulding's trading post, Utah Feb 44 p17
 Grand Canyon, geologic cross-section Aug 44 p5
 Great Salt Desert, Utah May 44 p23
 Great Salt Lake, Utah Feb 44 p4, Aug 44 p19
 Grey, Zane Jun 44 p15
 Gronning, Mrs. Chris Nov 43 p5
 Guadalupe Day, New Mexico Dec 43 p18

H

Haines, Peculiar Aug 44 p9
 Hamblin, Jacob Nov 43 p5
 Hanson, "Panamint George" Nov 43 p30
Hard Rock Shorty Nov 43-Jan 44
 Apr 44, Jul 44
 Harris, Shorty Nov 43 p25
 Harrison, A. W. May 44 p9
 Hassayampa river, Arizona Apr 44 p25
 Hastings, Lansford W. (Hastings Cutoff) May 44 p23
 Hearst, Wm. Randolph May 44 p23
 Helium, uses Jun 44 p32
 Henderson, Corp. Rand Oct 44 p35
 Henderson, Corp. Rand. *Close-ups* Dec 43 p3, Mar 44 p3, Jun 44 p3
 Henderson, Rand. *Just Between You and Me* Dec 43 p39, Jun 44 p39
 Henderson, Randall Jun 44 p15
 Henderson, Randall. *Close-ups* Nov 43 p3
 Jan 44 p3, Apr 44 p3, Sep 44 p3
 Henderson, Randall. Author of—
Just Between You and Me Nov 43-Apr 44
Sahara Diary May 44-Oct 44
 Henderson, William Penhallow Dec 43 p31
 Henderson, Nevada Jun 44 p10
 Henry Mts., Utah—Geology Sep 44 p9
 Hewett, Dr. Edgar L. Nov 43 p30
 Sep 44 p13
 Hieroglyphic Canyon, Utah Nov 43 p17
 Hilton, John. *Close-ups* Dec 43 p3
 Hilton, John. Author of—
"The desert is still waiting for you" Jun 44 p15
Nuggets to Bullets at Castle Dome Oct 44 p5

Holladay, C. E. Nov 43 p5
 Hollenbeck, Capt. May 44 p9
 Holmes, George and Kenneth Oct 44 p5
 Hovenweep Indian ruins, Utah Jan 44 p16
 Howe, Maurice Nov 43 p5
 Howell, Dave Aug 44 p5
 Howell, Wilson Jul 44 p4
 Hubbell, Charley Jan 44 p10
 Huntington, C. A. Nov 43 p5

I

Indian art Dec 43 p5, Feb 44 p9
 Indian cookery Nov 43 p12, Sep 44 p5
 Indian crafts—
 Laguna pottery Nov 43 p12
 Tesuque pottery Feb 44 p9
 Zuñi beadwork Mar 44 p39
 Zuñi jewelry Aug 44 p4
 Indian customs, family life—
 Acoma Dec 43 p11
 Isleta (Tortugas) Dec 43 p18
 Laguna Nov 43 p12
 Navajo Feb 44 p17
 Taos Sep 44 p5
 Tesuque Feb 44 p9
 Indian education (Navajo) Jan 44 p10
 Indian herbs and medicine Apr 44 p25
 Indian language (Navajo) Dec 43 p31
 Indian legends—
 Acoma Sep 44 p13
 Laguna Nov 43 p12
 Navajo Dec 43 p5
 Pahute Sep 44 p9
 Taos Sep 44 p5, Oct 44 p11
 Indian petroglyphs, pictographs Nov 43 p17
 Feb 44 p17, Mar 44 p5, Jul 44 p13
 Indian ruins—
 Betatakin, Hovenweep, Inscription House, Keetseel, Kinishba (Ft. Apache ruin), Mesa Verde, Montezuma Castle, White House, Wukoki Jan 44 p16
 Indians—
 Acoma Dec 43 p11, Sep 44 p13
 Apache Mar 44 p10
 Chemehuevi (ancient) Mar 44 p20
 Isleta (Tortugas) Dec 43 p18
 Laguna Nov 43 p12
 Navajo Nov 43 p20
 Dec 43 p5, Jan 44 p10, Feb 44 p17
 Taos Sep 44 p5
 Tesuque Feb 44 p9
 Zuñi Mar 44 p39, Aug 44 p5
 Indians, prehistoric Jan 44 p16
 Mar 44 p5, Jul 44 p13
 Inglesby, Dr. A. L. Nov 43 p5
 Inscription House Indian ruin Jan 44 p16
 Inscription Rock, New Mexico Jul 44 p13
 Insects Jul 44 p20
 Inside-the-Rocks (Monument Valley) Feb 44 p17
 Iron Chief mine, Calif. Apr 44 p34

J

Jeep, reconditioning May 44 p27, Sep 44 p12
Jewelry, Gemcutting and Metalcraft May 44 p36
 Johns, A. A. (Tony) Jul 44 p29
 Johnston, William R. Jan 44 p31
 Jones, John E. Feb 44 p4
 Joshua Trees, petrified Dec 43 p21
 Joshua Trees, development of flower Jun 44 p19
 Juniper berries Dec 43 p27

K

Kaiser, Henry J. Apr 44 p34
 Kayenta, Arizona Feb 44 p17
 Keagle, Cora L. *Tale of the Mono Rail* May 44 p9
 Keetseel Indian ruin, Arizona Jan 44 p16

Kelly, Charles. Author of—
Lee's Ferry on the Colorado Nov 43 p5
*They Built an Island Home
in the Desert* Feb 44 p4
*Trailblazer of the
Great Salt Desert* May 44 p23
Fossil Treasures of Wah Wah Jun 44 p4
Arrows From the Rainbow Sep 44 p9
Kenny, Jack Aug 44 p23
Kern, R. H. Jul 44 p13
Kinishba (Fort Apache ruin), Ariz. Jan 44 p16
Kraft, J. L. Jun 44 p15

L

Laguna Pueblo, New Mexico Nov 43 p12
Lakeside, Utah Aug 44 p19
The Land of Poco Tiempo Apr 43 p3
..... Sep 44 p13
Land of Sunshine magazine Sep 44 p13
Lapidary, lapidist, lapidarist,
gemologist—definition Feb 44 p34
La Rue, Padre Mar 44 p14
Las Cruces, New Mexico Mar 44 p14
Lattimer, Mary Oct 44 p11
Laudermilk, Jerry. *Close-ups* Jan 44 p3
Laudermilk, Jerry. Author of—
Wood, Time and Stone Dec 43 p21
Sand—Why Take it for Granted? Jan 44 p5
Basalt—The Rock From Hades Mar 44 p20
Desert is an Indian Drugstore Apr 44 p25
Stone From Time's Beginning Aug 44 p5
Fossil Weather Sep 44 p19

Laudermilk, Jerry, and Philip Munz.
*To Save Their Lives—
They're Tough* Jul 44 p8
Layton Canyon, California May 44 p9
Lee, John D. Nov 43 p5
Lee, T. K. Apr 44 p15, Jun 44 p27
Lee's Ferry, Arizona Nov 43 p5
Leeson, R. V. May 44 p9
Le Roy, V. V. May 44 p9
Light, spectrographic analysis Aug 44 p5
Little Chuckawalla Mts. Calif. Jun 44 p15
Lizards, Bailey's Colored Feb 44 p23
Lonely Dell, Arizona Nov 43 p5
Lost Mines—
Lost Adams, Arizona May 44 p27
Lost Chinaman, California Nov 43 p25
Spirit Springs, Organ Mts.,
New Mexico Mar 44 p14
Lost Palms canyon, California Jun 44 p15
Lubbinga, John "Opal Jack" Mar 44 p27
Lummis, Charles Fletcher Sep 44 p13
Luster, characteristics Dec 43 p35

M

Macmillan, Jim Mar 44 p5
Magnesium, processing Jun 44 p10
Magnesium, producers Jun 44 p32
Makoti Soldiers
International Hearth May 44 p36
Marble Canyon, Lee's Ferry Nov 43 p5
Marleau, Louis Etienne Mar 44 p33
Marmon, Miriam Jan 44 p3
Martinez, Nieves Oct 44 p11
Meader, Susan Elizabeth Mar 44 p10
Mengel, Carl Jul 44 p29
Merriam, Dr. C. Hart Sep 44 p28
Mesa, Cañon and Pueblo Sep 44 p13
Mesa Verde Indian ruins, Colo. Jan 44 p16
Mescal roast Jun 44 p25
Mexico, mining laws Nov 43 p33
Mexico, Rocky Point, Sonora,
highway Dec 43 p31
Mice, Desert white-footed Jul 44 p17
Milliano, Maximo Mar 44 p14

Mineral societies. See Gems and
Minerals department Each issue
Minerals, field tests Apr 44 p35
Mining—
Copper, Arizona Aug 44 p13
Lead ore, Arizona Oct 44 p5
Magnesite ore, Nevada Jun 44 p
Magnesium sulphate (epsom salt),
California May 44 p9
Opal, Virgin Valley, Nevada Sep 44 p36
Vanadium and uranium, Utah Sep 44 p9

Minor, Will. *Close-ups* May 44 p3
Minor, Will. *Trailing the Ghosts and
Gnomes of Goblin Gulch* May 44 p4
Mono rail, Layton Canyon, Calif. May 44 p9
Montezuma Castle Indian ruin Dec 43 p31
..... Jan 44 p16
Monument Valley Feb 44 p17
Morada (Penitente chapel) Apr 44 p5
Morang, Alfred Apr 44 p3
Mountain Meadows massacre, 1857. Nov 43 p5
Muench, Joyce Rockwood. Author of—
They Lived Up There Jan 44 p16
*Sword Points and
Dreams in Stone* Jul 44 p13
Mundy, Charlie Aug 44 p9
Munz, Philip A. Jul 44 p3

N

National monuments—
Canyon de Chelly, Hovenweep, Montezuma
Castle, Navajo, Sunset Crater, Walnut Can-
yon, Wuparki Jan 44 p16
Chiricahua, Punch and Judy Apr 44 p14
El Morro (Inscription Rock) Jul 44 p13
National parks—
Carlsbad Caverns, photo Nov 43 p11
Mesa Verde Jan 44 p16
Navajo Bridge, Lee's Ferry Nov 43 p5
Navajo national monument, Ariz. Jan 44 p16
Nellie Powell, Major Powell's boat. Nov 43 p5
Nevills, Norman Nov 43 p5
Nieto, Don Francisco de Silva Jul 44 p13
North Africa—natives,
vegetation Dec 43 p38

O

Ocotillo wood, uses Oct 44 p15
O'Hara, Uncle Dan Aug 44 p9
Organ mountains, New Mexico Mar 44 p14
Out West magazine Sep 44 p13

P

Pack rats Nov 43 p9, Dec 43 p27
Paguete Indian village, N. M. Nov 43 p12
Palm Canyon, San Jacinto Mts.,
California Jul 44 p4
Panamint Valley, California May 44 p9
Paria river, at Lee's Ferry Nov 43 p5
Patton, General Jun 44 p15
Penitente Brotherhood Mar 43 p3
..... Apr 44 pp3,5, Sep 44 p13
Permian Period, Arizona Sep 44 p19
Perry, R. O. Apr 44 p10
Petrified wood, formation Dec 43 p21
Petrified wood, Henry Hts., Utah Sep 44 p9
Phillips, Bert Oct 44 p11
Photographs, covers by—
Josef Muench, Nov 43; E. F. Hudson, Dec
43; Harold Kellogg, Jan 44; John L. Black-
ford, Feb 44; George McClellan Bradt, Mar
44; H. Cady Wells, Apr 44; Frashers, May
44; Nicholas N. Kozloff, Jun 44; Josef

Muench, Jul 44; Hubert A. Lowman, Aug
44; Arthur Penter, Sep 44; E. F. Hudson,
Oct 44.

Pillsbury, Dorothy L. *Close-ups* Dec 43 p3
Pillsbury, Dorothy L. *Christmas Trail
to the Sky City* Dec 43 p11
Pipestone (catlinite) Aug 44 p5
Pisgah Crater, California Mar 44 p20
Plantlife—
Arizona, northeastern Nov 43 p20
Arizona, northwestern Aug 44 p13
Colorado, western May 44 p4
Plantlife, fossil Sep 44 p19
Plant Life Zones Sep 44 p28
Plaster of paris, sawing mounts Mar 44 p36
Poetry Each issue
Powell, Major John W. Nov 43 p5
..... Sep 44 p9
Punch and Judy, Chiricahua
national monument Apr 44 p14

Q

Quartz Family Minerals Sep 44 p35
Quick, Lelande. Author of—
Amateur Gem Cutter Each issue
*Miracle Metal From
Nevada Hills* Jun 44 p10

R

Railroads—
Mono rail, Mojave desert Mar 44 p9
Western Pacific, Utah May 44 p23
Rattlesnakes Mar 44 p25, May 44 p13
Rattlesnakes, effect of sun on Dec 43 p29
..... Mar 44 p25, Sep 44 p12
Red Rock country, Arizona—
Geology Jan 44 p10
Red shale, Arizona—geology Aug 44 p5
Redin, Carl Aug 44 p31
Resser, Dr. Charles E. Jun 44 p4
Ribbonwood, Santa Rosa Mts., Calif. Jul 44 p4
Rishel, Wm. D. May 44 p23
Rito de los Frijoles, N. M. Sep 44 p13
Roosevelt, Theodore Sep 44 p13
Rose, Mark Jul 44 p29
Rufina (Blue Water), Indian artist Feb 44 p9

S

Saguaro cactus—form and use
in crafts Apr 44 p10
Saguaro cactus, found in Calif. Jun 44 p15
Sahara desert—
Date palms Nov 43 p38, Jun 44 p37
Topography Nov 43 p38
Weather Oct 44 p32
Salt creek wash, Colorado desert Jun 44 p15
San Gabriel de los Españoles,
New Mexico Jul 44 p13
Sangre de Cristo Mts., N. M. Oct 44 p11
San Jacinto Mts., Calif. Mar 44 p4
..... Jul 44 p4
Sand, origin, distribution,
characteristics Jan 44 p5
Santa Rosa Mts., Calif. Jul 44 p4
Santele, Ross Jan 44 p25
*Santos, The Religious Folk Art of
New Mexico* Apr 44 p3
School of American Research Nov 43 p30
..... Sep 44 p13
Searles, John Nov 43 p25
Sheep, bighorn Dec 43 p31

ShIPLEY, Dana	Jan 44 p10
Shoshone, California	Aug 44 p23
Sierra la Plata, Colorado	Dec 43 p5
Silicosis	Apr 44 p38
.....	May 44 p36, Jun 44 p36
Simonson, John P.	Nov 43 p17
SIMPSON, Lt. James Henry	Jul 44 p13
Sinajinih, Van, Navajo artist	Nov 43 p3
.....	Dec 43 p5
Sitgreaves, Capt. Lorenzo	Jan 44 p16
Slate range, Panamint valley	May 44 p9
Smith, Grant H.	Sep 44 p32
Smith, Vernon. <i>Sheep Hunting Artists of</i> <i>Black Canyon Walls</i>	Mar 44 p5
Snider, Agner Meader	Mar 44 p10
Songer, Nan	Apr 44 p15
.....	Jun 44 p27
South, Marshal. <i>Desert Refuge</i>	Each issue
South, Tanya, poems	Each issue
Spanish explorers	Jul 44 p13
Spectroscopy	Aug 44 p5
Spiders	Apr 44 p15
.....	Jun 44 p27, Jul 44 p20
Spiderweb silk	Feb 44 p3
.....	Apr 44 p15, Jun 44 p27
Spirit Springs colony, N. M.	Mar 44 p14
Spruce Tree House ruin	Jan 44 p16
Square dancing	Aug 44 p9
Steward, Dr. Julian H.	Nov 43 p5
Stone, Julius F.	Nov 43 p5
Stone, Margaret. Author of— <i>Toli Goes Back to Laguna</i>	Nov 43 p12
<i>Blue Water—Artist of Tesuque</i>	Feb 44 p9
<i>Where the Eagle Feathers Fell</i>	Sep 44 p5
Sunset Crater, Arizona	Jan 44 p16

T

Tabaseca Tanks, Colorado desert	Jun 44 p15
Tackhole dot (telescopic gunsight)	Apr 44 p15
.....	Jun 44 p27
Taos Pueblo, New Mexico	Sep 44 p5
.....	Oct 44 p11
Tea, Sahara desert style	Aug 44 p37
Titus Portal, Death Valley	Jul 44 p3
Toli, Laguna Indian child	Nov 43 p12
Tree-ring dating method	Jan 44 p16
Trilobite fossils	Jun 44 p4
Trumbo, Theron Marcos. <i>Close-ups</i>	Dec 43 p3
Trumbo, Theron Marcos. Author of— <i>Fiesta in Tortugas</i>	Dec 43 p18
<i>Go—Where the Gold Lies</i> <i>Buried</i>	Mar 44 p14
Turtle Mts., Mojave desert	Jun 44 p15

U

Udden, Dr. J. A.	Sep 44 p19
Uintah prehistoric museum, proposed	Aug 44 p31
United Indian Traders Assn.	Aug 44 p31

V

Valle, Martin	Sep 44 p13
Van Valkenburgh. Author of— <i>The Gods Walked Up There</i>	Dec 43 p5
<i>Black Horse of the Red Rocks</i>	Jan 44 p10
Victorio, Apache chief	Mar 44 p10
Virgin Valley, opal mining	Sep 44 p36

W

Wah Wah valley, Utah	Jun 44 p4
Walnut Canyon Indian ruins	Jan 44 p16

<i>Wanderer of the Wasteland</i>	Jun 44 p15
Ward, Joe	May 44 p9
Warner, Arthur	Oct 44 p5
Washington, "Uncle Bill"	Feb 33 p31
Waterless mountain, Arizona	Nov 43 p20
Watson, Jack	Jun 44 p4
Weather, prehistoric	Sep 44 p19
Weaver, Leo W. and Billie	Nov 43 p5
Wenner, Miss Blanche	Feb 44 p4
Wenner, U. J. "Judge"	Feb 44 p4
Wetherill, John	Jan 44 p16
White House Cliff ruin	Jan 44 p16
Wickenburg, Arizona	Apr 44 p25
"Wild Bunch"	Mar 44 p10
Wildlife, western Colorado	May 44 p4
Willis Palm oasis, Calif.	Jan 44 p31
Wilson, J. Winn	Jul 44 p4
Wilton, Mabel. <i>Close-ups</i>	Jul 44 p3
Wilton, Mabel. <i>Paradise—Above the</i> <i>Palms</i>	Jul 44 p4
Wingate Pass, California	May 44 p9
Woods, Betty and Cleo. <i>Close-ups</i>	Mar 44 p3
Woods, Betty. <i>She Defied Victorio With an</i> <i>Empty Rifle</i>	Mar 44 p10
Woods, Lynda. <i>Escape From</i> <i>Navajo Land</i>	Feb 44 p15
Woodson, Weldon D. <i>Adventure of</i> <i>Boomer</i>	Feb 44 p23
Wright, Harold Bell	Jul 44 p29
Wright, Thomas H.	May 44 p9
Wukoki Indian ruin, Ariz.	Jan 44 p16

Y

Yaquitepec, photo of	Nov 43 p9
Young, Brigham	Nov 43 p5
Young, Robert W.	Dec 43 p31
<i>Yucca whipplei</i> , photo of	May 44 p19

UNITED WE STAND In Opposing Ratification of Water Treaty with Mexico...BECAUSE...

- The treaty abrogates the Boulder Canyon Project Act which declares that flood waters conserved by Boulder Dam shall be used "exclusively within the United States."
- Boulder Dam was built entirely on American soil by American initiative, engineering genius and money.
- The United States has solemnly contracted with American communities and states to deliver them quantities of Boulder Dam water and power, which are indispensable to their development.
- Relying on the Project Act and those contracts, American citizens have committed themselves to pay hundreds of millions of dollars for construction of works with which to use their Boulder Dam water and power.

- AMERICAN COMMUNITIES, not the United States, are, under their contracts, standing the entire cost of the Boulder Dam.
- During cycles of dry years, such as have regularly occurred, and will recur, American uses of water would have to be curtailed to supply Mexican lands.
- The Treaty "guarantees" Mexico, for all time 1,500,000 acre feet per annum of Colorado River water—twice what Mexico had ever used prior to construction of Boulder Dam—twice what Mexico could possibly use without Boulder Dam.
- International Good-Will does not require, nor justify sacrifice of the natural, irreplaceable resources of the United States.

IF AMERICAN CITIZENS FAIL TO MAINTAIN THEIR FREEDOM, WITH ITS RIGHTS AND PRIVILEGES ON THE HOME FRONT—VICTORY OVER THE AXIS AGGRESSORS WILL HAVE BEEN IN VAIN!

Imperial Irrigation District



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



THE DE LUXE CHRISTMAS GIFT . . .

Beautifully packaged gift box of the DESERT'S finest date confections . . . Sweets that come from trees . . . Delightful creations of VALERIE JEAN . . . This is a gift de luxe for that boy or girl overseas. The one- and three-pound sizes meet weight and size requirements, are wrapped airtight. The popular overseas pack which the boys themselves re-order—after trying a sample.

A SAMPLER from which to make your choice of favorites in the future. Contains Jumbo Stuffed Dates, Date Loaf, the New Date-Nut-Honey Confection, and Date Cake . . .

5-lb. size \$5.50 3 lb. \$3.50 1 lb. \$1.25

A Book of 250 Delicious Date Recipes Will Be Included in Each Package for 50 Cents Extra per Book.
When sending your OVERSEAS order, remember too the boy or girl in camp.
A CHRISTMAS OR YEAR-ROUND TREAT!

Valerie Jean will take care of your overseas mailing problems. Just remember that Christmas packages for all armed forces overseas must be mailed between September 15 and October 15 . . . the sooner the better. Packages shipped postpaid. Please send your gift cards to be enclosed.

VALERIE JEAN'S

R. C. NICOLL, Owner
THERMAL, CALIFORNIA