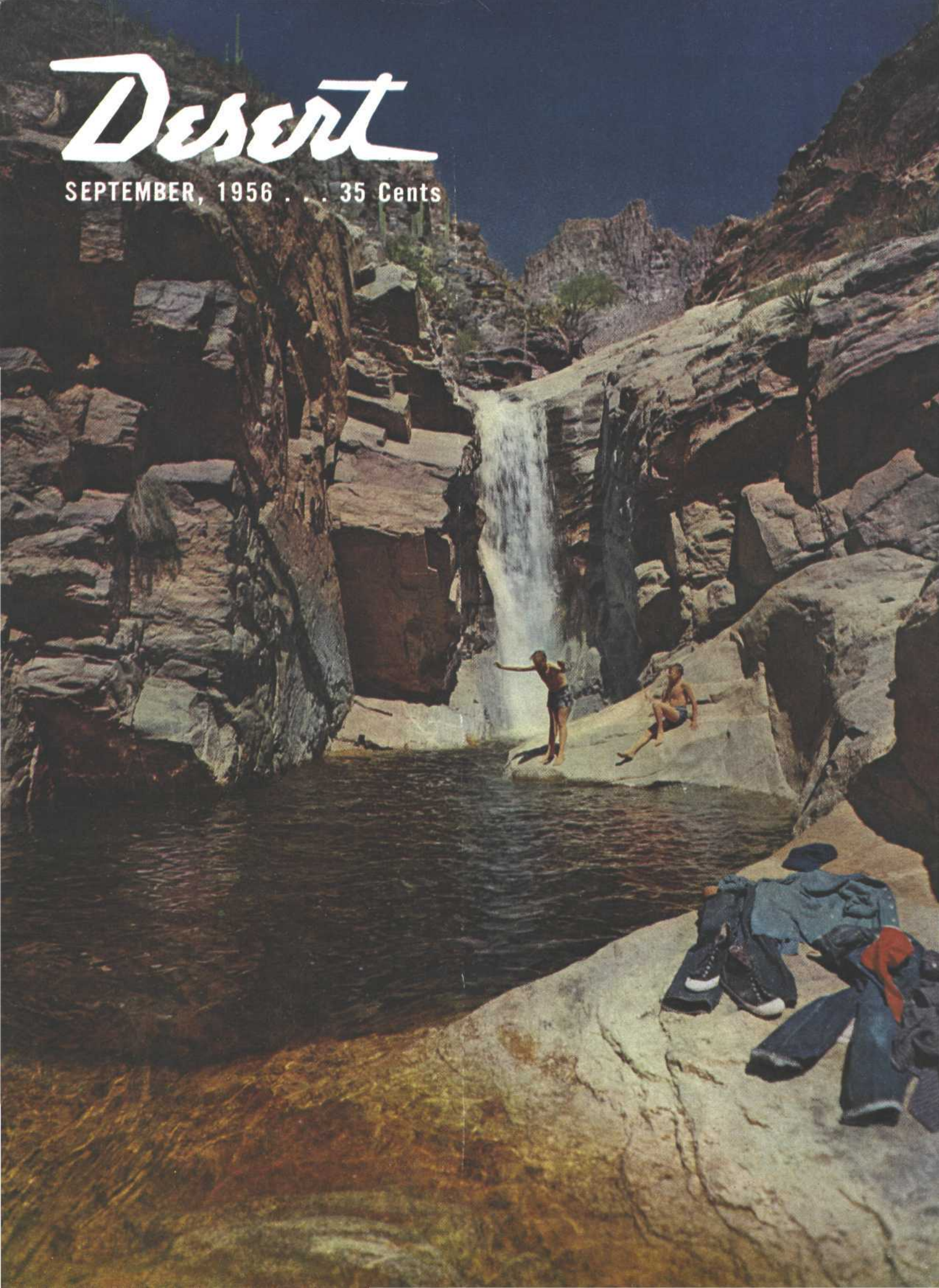
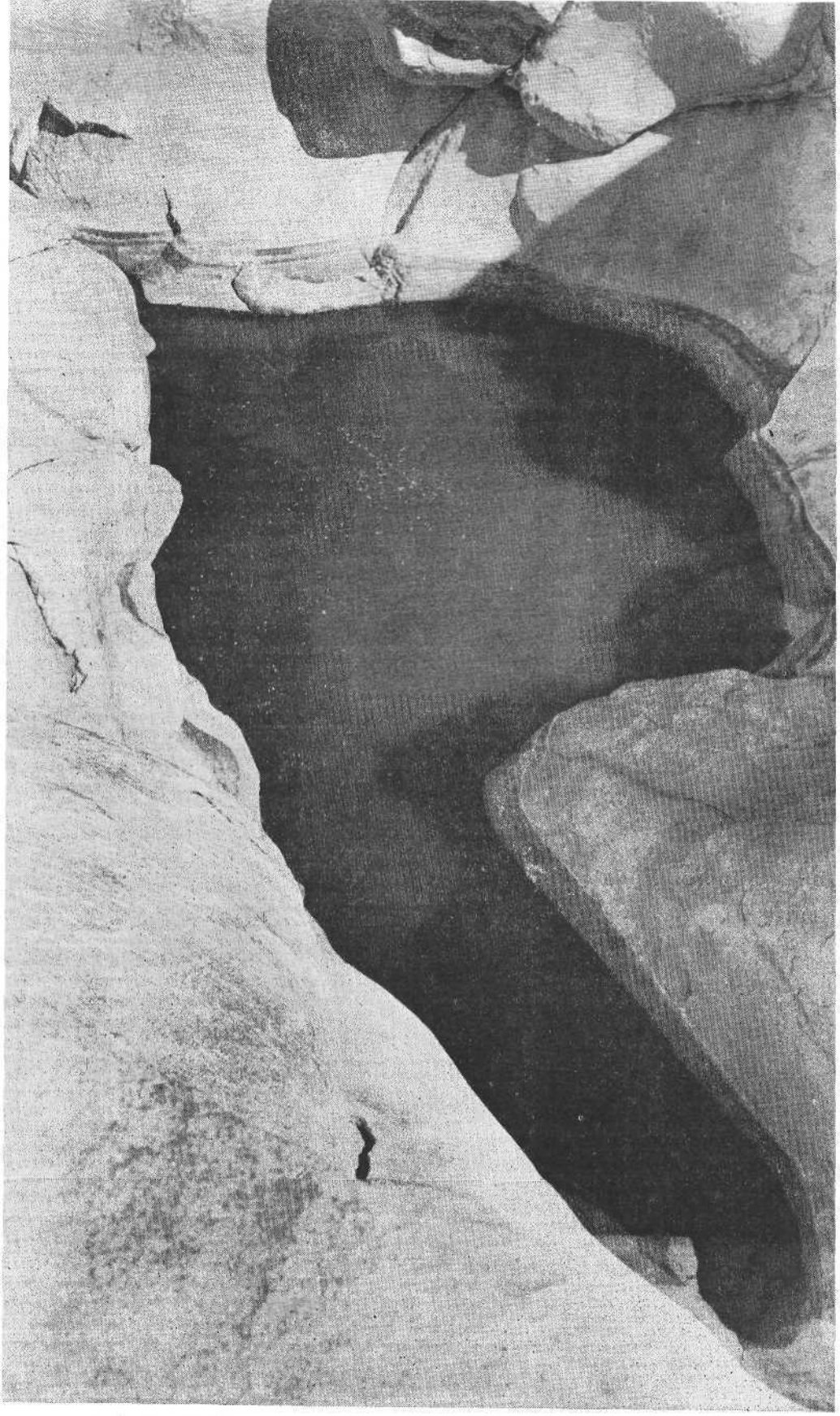
Desert

SEPTEMBER, 1956 . . . 35 Cents





Spring Tank in the Chuckawalla Mountains. This natural tank in solid granite, fed by a submerged spring, is five miles from Desert Center, California—two miles by road and three miles hiking.

VICTORY

By Constance Walker
Los Angeles, California

In desert places dry and still,
Upon a lonely sandy hill,
Each tiny flower's Godlike face
Reveals the strength of gentle grace,
Uplifts its glory quietly
To bloom in spirit victory.

JEWELS OF VULCAN

By Grace R. Ballard
Santa Barbara, California

Stark, brown rock ridges rise
From desert floor;
Lean fingers point derisively
At cloudless skies—
As if defying centuries to tame
The cataclysmic force of Vulcan's flame.

Deep Water Hole

By Anona McConaghy
Bellflower, California

The crimson and mauve of the twilight
Has deepened and darkened until
All brilliance is gone and the sky light
Is fused with the edge of the hill.
The sand dunes and chaparral, basking
Through day in the warmth of the sun,
Have cooled and a quiet unmasking
Of restorative peace has begun.
From ledges and level expanses
By thirst driven toward the same goal,
The desert life shyly advances
To drink from the deep water hole.

• • •

O, DESERT WIND!

By Lena Gamble Bixler
Tucson, Arizona

O desert wind, refreshing, cool you blow
Across the heated sand, when ev'ning falls,
You bring glad hope when weary travelers call,
Relief from sun and burning earth below.
You play. You swirl the dust, both high and low
And roll the tumbleweed like balls.
To reach the Cereus petals, you climb the walls.
She wakes. The night is filled with perfume' flow.
You scatter clouds and bring the welcome rain
And invite the thirsty Cacti to drink their fill.
You touch the glassy beads from spines, in vain.
O desert wind, a mission you fulfill.
Strong winds in jungle, winds at sea, but ours the gain,
You chose the desert. Pray, be with us still.

• • •

CONTENTMENT IS MY CLOAK

By Anona McConaghy
Bellflower, California

My robes are not the cloth of kings
But that of simpler folk,
I covet not the costly things,
Contentment is my cloak.
No incense of the orient
No perfumes now the rage
Are mine, but flower's gentle scent
And pungent desert sage.

The paintings that are my delight
Come not from galleries,
My canvas is the white moonlight
With scrolls of Joshua trees.
I want no house from mason's hands
With ornate rooms and halls,
Far finer than his labored plans
Are my own canyon walls.

Today

By Tanya South

There still is left for you today.
Whatever hatred or dismay
Still lingers in you, drive it out.
Cast out all fear, or brooding doubt.
Do you the right! Do you the just!
And never falter in your trust
In Light Divine, and Love and Truth
To make your passage smooth.

A broader concept well can heal
All wounds, and higher Light reveal.

DESERT CALENDAR

August 31-September 3—Elko County Fair, Elko, Nevada.
August 31-September 3 — Santa Fe, New Mexico, Fiesta.
September 1-3—28th Annual Nevada Rodeo, Winnemucca, Nevada.
September 1-3—Annual Pow Wow, Apple Valley, California.
September 1-3 — All Indian Championship Rodeo and Tribal Fair, San Carlos, Arizona.
September 1-3—Lions Club Stampede and '49er Show, Fallon, Nevada.
September 2—World's Championship Steer Roping Contest, Clovis, New Mexico.
September 2 — St. Stephen's Fiesta and Ceremonial Dances, Acoma Indian Pueblo, New Mexico.
September 3-4—Rodeo, Williams, Ariz.
September 6-8—Sierra County Fair, Truth or Consequences, New Mexico.
September 6-8 — Washington County Fair, St. George, Utah.
September 6-8—Harvest Dance, San Ildefonso Pueblo, New Mexico.
September 6-9—Antelope Valley Fair and Alfalfa Festival, Lancaster, Cal.
September 7-8—De Baca and Guadalupe Bi-County Fair, Fort Sumner, New Mexico.
September 8-9—Socorro County Rodeo, Socorro, New Mexico.
September 11-12—New Mexico State Garden Club Convention, Roswell.
September 11-15—Eastern New Mexico State Fair, Roswell.
September 12-16 — Yavapai County Fair, Prescott, Arizona.
September 13-16 — Washoe County Fair, Reno, Nevada.
September 14-15—Old Timers Celebration, Randsburg, California.
September 14-15—Otero County Fair and Ranch Hands Rodeo, Alamogordo, New Mexico.
September 14-16—Navajo Tribal Fair, Window Rock, Arizona.
September 14-16 — Valencia County Fair, Belen, New Mexico.
September 14-16 — Navajo County Fair, Holbrook, Arizona.
September 14-23 — Utah State Fair, Salt Lake City.
September 15 — Ceremonial Races and Dances, Jicarilla Apache Reservation, New Mexico.
September 15-16—Fair and Rodeo, Silver City, New Mexico.
September 18-20—Union County Fair, Clayton, New Mexico.
September 18-21—Roosevelt County Fair and Rodeo, Portales, N. M.
September 19—Indian Fiesta, Laguna Pueblo, New Mexico.
September 19-22—Curry County Fair, Clovis, New Mexico.
September 20-22—Quay County Fair and Jr. Rodeo, Tucumcari, N. M.
September 21-23—San Juan County Fair, Farmington, New Mexico.
September 21-23—10th Annual Rough Riders Stampede, Barstow, Calif.
September 28—Annual Chisum Trail Roundup, Artesia, New Mexico.
September 28-29—San Miguel Fiesta, Socorro, New Mexico.
September 28-30—33rd Annual Indian Fair, Shiprock, New Mexico.
September 29-30—Fiesta of San Geronimo, Taos Pueblo, New Mexico.
September 29-October 7—New Mexico State Fair, Albuquerque.



Number 19 **SEPTEMBER, 1956** **Number 9**

COVER	The sixth waterfall of Bear Canyon's Seven Falls, near Tucson, Arizona. Photograph by ESTHER HENDERSON	
POETRY	Deep Water Hole and other poems	2
CALENDAR	September events on the desert	3
EXPLORATION	Exploring Anza's Unknown Canyon By WILLIAM L. KENYON	4
HISTORY	Old Bill Williams' Modern Mountain Men By RALPH FREESE	7
FIELD TRIP	Icicle Agate in the Gusty Silver Peaks By HAROLD O. WEIGHT	10
DESERT QUIZ	A test of your desert knowledge	14
CEREMONIAL	Navajo Sing in Cross Canyon By EDITHA L. WATSON	15
CONTEST	Picture-of-the-Month Contest announcement	16
NATURE	Not All the Thorny Plants Are Cacti By EDMUND C. JAEGER	17
CLOSE-UPS	About those who write for Desert	20
FICTION	Hard Rock Shorty of Death Valley	20
GARDENING	Choosing a Hedge for Your Garden By RUTH REYNOLDS	21
PHOTOGRAPHY	Pictures of the Month	23
ART	Pablita of Santa Clara Pueblo By W. THETFORD LeVINESS	24
LETTERS	Comment from Desert's Readers	27
NEWS	From here and there on the desert	28
MINING	Current news of desert mines	33
URANIUM	Latest developments in the Industry	34
HOBBY	Gems and Minerals	36
LAPIDARY	Amateur Gem Cutter, by DR. H. C. DAKE	41
COMMENT	Just Between You and Me, by the Editor	42
BOOKS	Reviews of Southwestern Literature	43
PRE-HISTORY	Montezuma Castle By JOHN L. BLACKFORD	Back Cover

The Desert Magazine is published monthly by the Desert Press, Inc., Palm Desert, California. Re-entered as second class matter July 17, 1948, at the postoffice at Palm Desert, California, under the Act of March 3, 1879. Title registered No. 358865 in U. S. Patent Office, and contents copyrighted 1956 by the Desert Press, Inc. Permission to reproduce contents must be secured from the editor in writing.

RANDALL HENDERSON, Editor — EUGENE L. CONROTTO, Associate Editor
BESS STACY, Business Manager — EVONNE RIDDELL, 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.

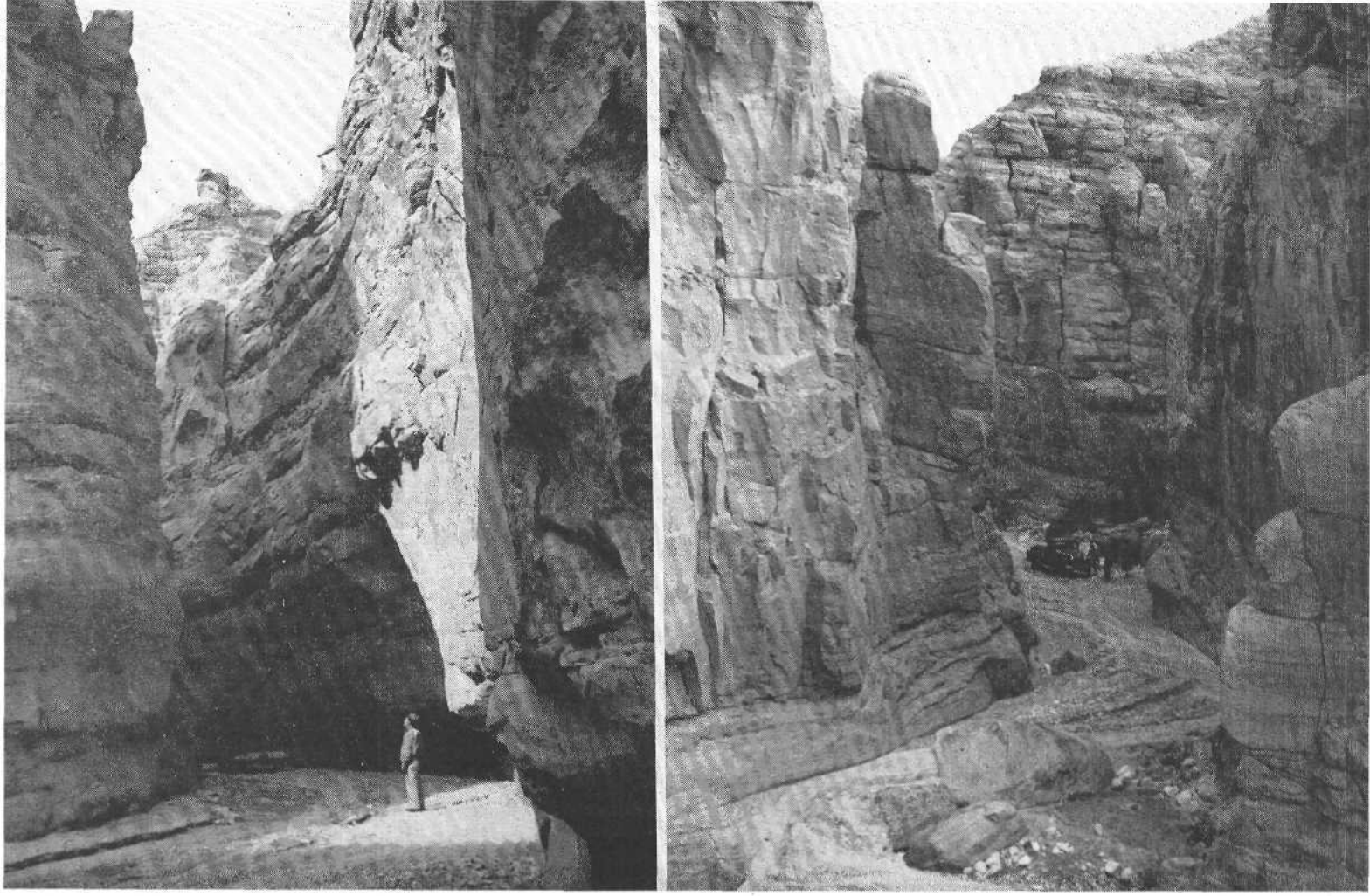
SUBSCRIPTION RATES

One Year.....$4.00 **Two Years.....$7.00**

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, Palm Desert, California



Sandstone Canyon. Narrowest portion, photograph at left, is a mere 14 feet. Photo at right shows how the canyon's vertical walls are seamed and cracked.

Exploring Anza's Unknown Canyon . . .

As State Park Superintendent for the vast Southern California district, William Kenyon's responsibility stretches over thousands of square miles. It is no wonder, therefore, that when park personnel reported seeing a hitherto unknown canyon in the Anza Desert State Park, he organized a party to explore it. They named it Sandstone Canyon for its cracked and precipitous walls, and jeep adventurers will find it a welcome addition to their long list of fascinating places to visit on the desert.

By WILLIAM L. KENYON
Photographs by the author
Map by Norton Allen

LAST DECEMBER, Park Supervisor Carl Whitefield and I with our wives set out on a one-day search excursion of what was believed to be a previously unexplored canyon —a deep chasm of which the authorities had no record.

The existence of Sandstone Canyon —the name recently given to the place —was discovered by Whitefield and Assistant District Superintendent Leo Crawford from the side of Whale Peak in Anza Desert State Park's bleak Vallecito Mountains.

From this high vantage point the two men saw an intricate network of canyons and arroyos comprising the southerly watershed of the Vallecitos. Far below them in the distance they saw the outlines of a canyon which neither of them recognized. They took pictures of the area and determined later, with the aid of a quadrangle map, that the newly-discovered gorge probably was a tributary of Fish Creek Wash.

My interest was aroused by their discovery and I determined to personally visit the canyon at the first opportunity. It came in December and on a bright Monday morning the four of us started off by jeep from park headquarters at Tamarisk Grove on Highway 78.

We followed the highway 15 miles to the little community of Ocotillo Wells where water, gasoline and food are obtainable, and then turned south on the paved county road leading to the gypsum mines in Split Mountain and Fish Creek Wash.

From Ocotillo Wells it is 4.3 miles to the state park boundary sign and from this point on our entire trip was within the park boundaries. The jeep route starts 2.2 miles further south of the sign, at the entrance to Fish Creek Wash.

Growing on both sides of the dry bed were healthy smoke trees, desert willows and mesquite. This is a popu-

lar drive and there were many wheel tracks left by those who had preceded us since the last water cleared the wash. The great floods of water which occasionally rush down this canyon usually clear the bed of vegetation, but quite a few desert shrubs were still grimly holding on to their footholds in the sand.

At 1.5 miles from the start of the jeep route, we entered Split Mountain whose conglomerate walls reminded us of poorly mixed concrete. Here and there a creosote bush, catsclaw, desert holly or desert aster mingled with the previously mentioned larger plants. At 2.4 miles we also noted some galleta grass and at 3.6 miles we started into the narrowest portion of Split Mountain.

The vertical canyon walls here tend more towards a sandstone formation rather than to conglomerate, and their appearance was spectacular.

The sandstone again changed back to conglomerate by the time we were out of the Split at 4.0 miles. In another .3 mile the jeep trails branch and if one is not careful at this point he may start off up a wrong wash leading to the right.

I have found that cloudburst runoff can completely alter the appearance of a desert canyon from season to season, and consequently I don't rely too greatly on my memory to guide me to my destination. No matter how many times I travel a particular canyon, I always have the feeling of being in a strange and new place, which is one of the most fascinating things about this great desert country. Even from hour to hour the light changes, shadow shiftings and color variations paint new effects in the canyons.

At 5.7 miles we skirted close to the base of a mustard-colored cliff on our right and in this area we drove through mud hills on both sides of the wash. In another mile we came to the shell masses—the product of some ancient sea. Here thousands of tons of fossiliferous material which, upon close examination, can be seen to be solidly packed sea shells of many kinds, added to the fascination of this canyon. These shell masses run along the top of a ridge in the clay-like hills for quite a distance in both directions.

Where Fish Creek Wash has cut through these masses, chunks of the material have broken off and settled in and around the stream bed. This is a popular place for photographers, but we did not stop for we were anxious to locate the side opening in the wall of the canyon for which we were searching—if such an opening existed.

The entire Anza area is a great "badlands," a fantastic labyrinthine area where many upheavals were followed by ages of erosion by water, wind, heat and cold. This is an intricately carved landscape of mud hills, oddly eroded formations, sandstone layers and conglomerate masses—all tinted with the soft-toned colors of the desert. Vegetation is scarce and there is seldom any water. This is a place for artists, either with brush or camera, geologists, botanists and all the other people who simply enjoy fresh air, sunshine and the subtle beauty of Nature.

At 10.1 miles I drove the jeep past hundreds of smoke trees which were growing in the wash. They averaged between three and four feet in height. Ahead were more interesting rock formations and the canyon began to narrow.

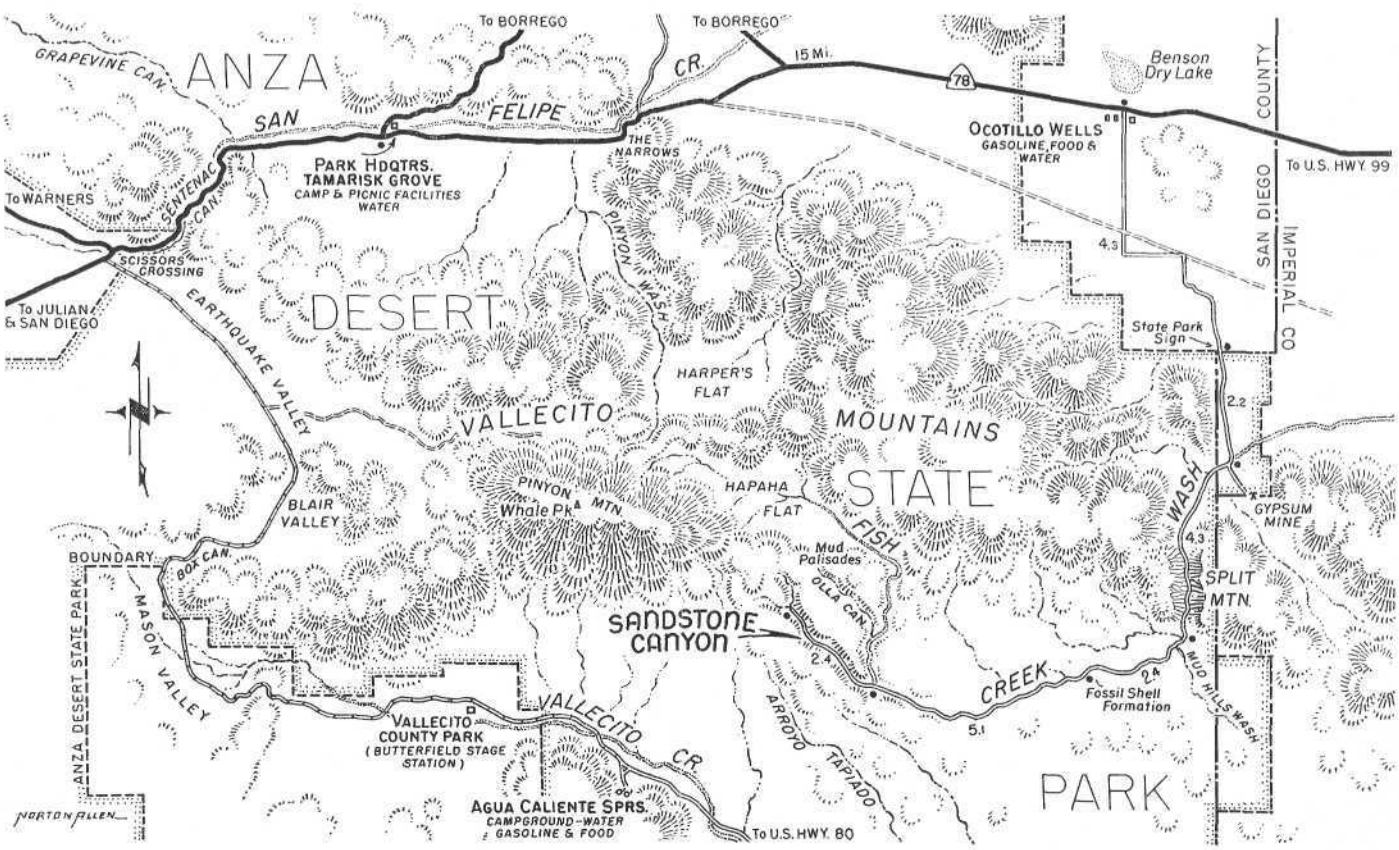
As we neared Olla Wash, the route of access to the Mud Palisades, we very carefully examined the western wall of the canyon. At 11.4 miles the jeep brought us to a vertical cliff formation identical to that from which we expected the mystery canyon to be carved. At 11.8 miles we saw a break in the wall, but it did not appear significant and we drove on.

After more fruitless searching, we could find no other break, so we returned to the one at 11.8 miles.

As we drove in it, I guessed that the jeep would be able to go no further than a hundred feet or so, so narrow were its walls. But as we proceeded up the smooth wash, it turned sharply to the right and then opened up.

We had found our canyon!

This wash is characterized by its vertical sandstone walls and its relatively narrow width. The canyon walls are of light brown with the darker,





Fish Creek Wash, the main water course in a watershed of 30,000 acres, draining part of the Vallecito Mountains.

chocolate brown of desert varnish in many places. The floor of the wash contains light, bluish gray granite sand, cobbles and boulders which have washed down from the mountains.

At one place the canyon narrowed to only 14 feet where its walls were undercut by the stream currents. Great slabs of stone clung precariously to the mother wall above our heads and we all agreed that this was no place to be during an earthquake.

We saw several tarantulas in the canyon. These harmless creatures usually put up with a lot of molestation before attempting to bite. We saw no snakes in Sandstone Canyon nor in Fish Creek Wash for that matter, but we did see a few lizards scurrying away with tails held high.

Shadows crossed the dry stream bed and although it was not cold, we found a sunny spot quite free from the threat of falling wall 1.3 miles from the mouth of the canyon. We spread our picnic lunch and relaxed.

It was here that we discovered the evidences of previous visits to this canyon by other people, although apparently only a few. Faintly scratched in one of the walls and barely legible was a name and a date of May, 1930. There were no jeeps then and the person who carved his name in this wall must have back-packed into this area for it is a great distance from the road and the nearest supplies.

The trip could have been made in a Model T or later in a Model A, but under no conditions can a modern highway sedan make the trip into Sandstone Canyon.

If you do not have a four-wheel drive vehicle but still wish to see this country, there is available at Borrego Springs a state licensed desert tour service. It can take you to remote and interesting points throughout these desert parks. And if you want to camp out, it can take you and your party, camping equipment and all, to any of these isolated places, leave you there, and return for you at some predetermined later date.

There is little litter in Fish Creek Wash and none in Sandstone Canyon. The park rangers endeavor to keep the cans, bottles and garbage cleaned up, and in my opinion they do a fine job.

The State Park Service permits camping along the washes, but requests that those who do so take their own oil stoves and refrain from building open fires or using any vegetable matter in the area as fuel. Even the deadest appearing bush may be very much alive.

They also ask that you leave your dogs and firearms home, for all State Parks are wildlife preserves. Also take your cans and rubbish home with you when you leave. Litter should never be buried for it has been found that buried cans and garbage will be quickly dug up and scattered by animals soon after a campsite is vacated.

If you plan to visit Anza, take plenty of water with you and as with all desert trips, be sure someone at home knows where you are going and when you expect to return.

Also remember that these desert parks are no places to visit in the summer when temperatures might rise to 125 degrees in the shade. The atmosphere is extremely dry, and it is not possible for a person to walk very far without carrying and drinking much water to compensate for dehydration. Consequently, a breakdown of your jeep or an accident or injury to a member of your party could be disastrous. Summer thunder storms and cloudbursts in this area are not uncommon, and a great volume of water may suddenly rush down one or more of the washes with little or no warning, trapping anyone unlucky enough to be in them. Except during the summer, however, there is relatively little danger. Winter rains are usually light and there is not the sudden and terrific runoff which often follows a summer storm.

After lunch, we drove another mile into Sandstone Canyon and came to the end of the jeep passage. At this point the canyon forks and we walked an easy mile or so up the left or westerly branch to the saddle of the mountain where a fine vista spread out before us.

We made an unhurried trip back to Tamarisk Grove, watching the hundreds of swifts in the sky above the canyon floor and some owls.

We also stopped at a fissure in the wall of the canyon which created a natural animal access to the wash floor from the mesa above, and here we saw signs of foxes and coyotes. We also passed an island-like growth of Bigelow cholla cactus. Otherwise, most of the cacti, together with ocotillo, grows above on the mesas.

At 5:30 that afternoon we reached Tamarisk Grove after spending two hours on the return trip. By then the shadows of still another day lay long and heavy across the Vallecito Mountains and Sandstone Canyon.

NAVAJOS ADOPT BUDGET, INCREASE OFFICIALS' PAY

The Navajo Tribal Council adopted a $3,254,325 budget, a million dollars of it surplus from last year's budget.

Paul Hand, former assistant general superintendent, has been named manager of a new industrial department that received a $425,890 allocation to create job opportunities for Navajos on and near the reservation.

Tribal administration will receive $373,698; law and order, $586,762; community services, $834,014; and resources, $983,715.

Salary increases were approved by the council. Henceforth members will receive $20 a day instead of $16. The Council Chairman will receive $9000 his first year, $10,000 his second; $12,000 his third; and $13,500 his fourth. If the chairman is elected again, he will receive $15,000 per year. The vice-chairman's pay scale was set at $7000, $8000, $9000 and $10,000, with an annual salary of $11,000 for a second term.—*Adahooniligii*



The Bill Williams Mountain Men start their annual trek to Phoenix from 6762-foot high Williams, Arizona, where snow covers the ground in early spring.

Old Bill Williams' Modern Mountain Men

One of the Southwest's most colorful chapters—the story of the Mountain Men—has been borrowed from out the pages of the past by a group of civic-minded men in Williams, Arizona. For six days each year, when they ride out of Williams for a rendezvous in Phoenix, these Arizonans relive the epoch of those rugged individualists who pursued the valued fur-bearing animals into unexplored territory, and who left trails through the western wilderness for those who came after.

By RALPH FREESE

BILL WILLIAMS — Mountain Man, Trapper, Indian Scout, Trail Blazer — lived and died many years ago, but his memory remains in the country where he and his rugged companions did so much to shape history.

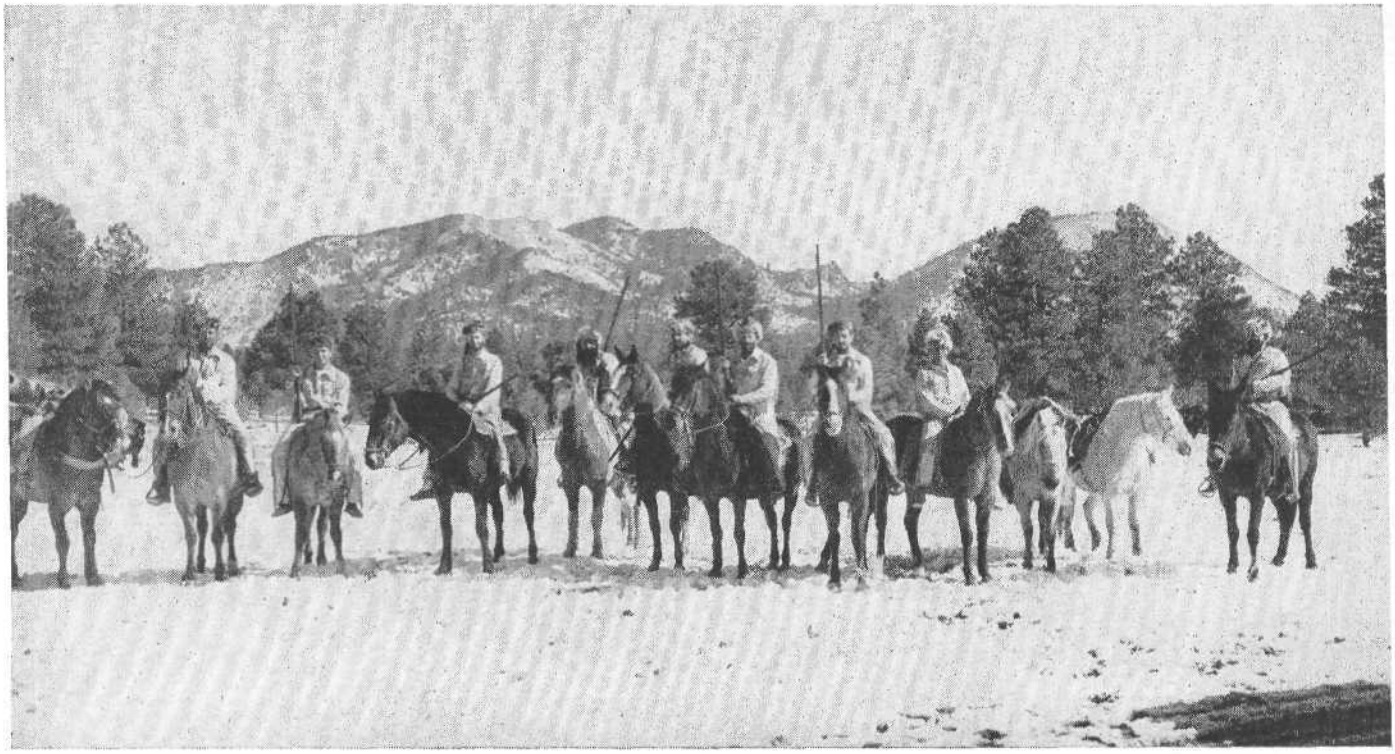
Dedicated to the preservation of that fascinating segment of our inheritance and especially to the recollection of Old Bill Williams, is an organization formed several years ago and known as the Bill Williams Mountain Men, with headquarters in the Arizona city named in Williams' honor.

The modern Mountain Men do not make their livings trapping beaver. They represent a wide occupation background — judge, garage owner, service station manager, doctor, dentist and others.

As nearly as possible, these men try to emulate the costumes and customs of that lusty group of pioneers who forsook civilization for the raw frontier in the days when the Southwest was held by Spain. Through the winter, beards are grown and their long Kentucky rifles are cleaned and polished. Then, in early spring, the Mountain Men change into buckskins and moccasins, load their pack animals with grub, fine furs and their caged mascot, a young mountain lion, and then, as in the early days, they ride out of the mountains across the 185 rugged miles from Williams southward to an imaginary rendezvous in Phoenix. The trek takes six days and is an annual event conveniently planned so that the pack train arrives in Phoenix in time to enter the parade and for the members to participate in the Phoenix World's Championship Rodeo.

Old Bill Williams was a rugged frontiersman.

He was a contemporary of Kit Carson, Jim Bridger, David Jackson and Peter Ogden. Each of these famous



Snow was on the ground when this ride to Phoenix began.

Mountain Men and Trail Blazers have made lasting contributions to the West and are honored today by the many geographic locations that bear their names.

In addition to the town of Williams there are a river and mountain in Arizona named for Mountain Man Bill. Carson gave his name to Carson City, Nevada; Jim Bridger is the patron of Bridger, Montana; Jackson and Jackson Hole, Wyoming, immortalize David Jackson; and Ogden, Utah, was named in memory of Peter Ogden.

Williams was born January 3, 1787, in North Carolina. As a child, his family moved to St. Louis which was then the center of the fur trade and a distributing point for trading and trapping west of the Mississippi. Young Bill grew up in the rowdy and lusty atmosphere of the frontier and most of his playmates were Indian children. From them he learned to speak their language and to understand and appreciate their way of life. It was an education that well fitted him for the adult life he was destined to lead.

At 17 Bill left home to become a circuit preacher. To supplement the meager income from this work, he hunted and trapped with the Osage Indians. In 1813 the young preacher-trapper married an Osage girl who bore him two children. Williams remained with these Indians for 12 years and following his wife's untimely death, he left his adopted people and journeyed west.

Meanwhile, in 1820, John Jacob Astor pushed his American Fur Company into the lead in the race to open the Western Fur trade. In active competition with American were the Hudson Bay Company and other concerns eager to claim the fine animal pelts in such high demand by Eastern markets.

It has been estimated that there were no more than 250 Mountain Men west of the Missouri River before 1825. With the opening of the fur markets, additional hundreds poured into the West. These men took their lives in their own hands for the Western land was the home of savage Indians, wild animals, an unfriendly Spanish government, and worse—the cold relentless winters of the vast, unexplored mountain wilderness.

Trapping is done in early spring when the ice-covered streams begin to thaw, to the first of June, and again in September until the freezing weather sets in. When Mountain Men could find a good camping place with wood and game and free from hostile Indians, they wintered in the mountains. More often, however, they spent the winters in the frontier posts or in the Rio Grande settlements such as Taos or Santa Fe. During the summer, the Mountain Men pulled their traps and "headed for points of rendezvous."

A rendezvous was an outdoor mar-

The Mountain Men stop at several villages along the way to Phoenix where they demonstrate that some of the old rifles still can be fired.



ket where the Mountain Men had opportunity to trade amongst themselves, with professional traders and with the Indians, gossip, learn the latest news from the States and have fun. At these rendezvous, which sometimes attracted several hundred Indians, trappers and traders, there was an unwritten law that there would be no fighting between the Indians and the white men. Dancing, singing, shooting matches and horse races were intermixed with the trading and carousing until the trappers had spent all their earnings. Then the traders would grubstake them for the next season and the Mountain Men would quietly slip out of the rendezvous areas for the wilderness and more pelts.

In 1825 Congress authorized the survey and marking of the Santa Fe Trail. The expedition was headed by Major Sibley who hired Bill Williams as guide and interpreter. Williams preceded the party by several days laying the ground work for treaties with the Indians, and after his trail-work was completed, he stayed on a short time in Santa Fe and Taos. It was here that he started his life as a Mountain Man.

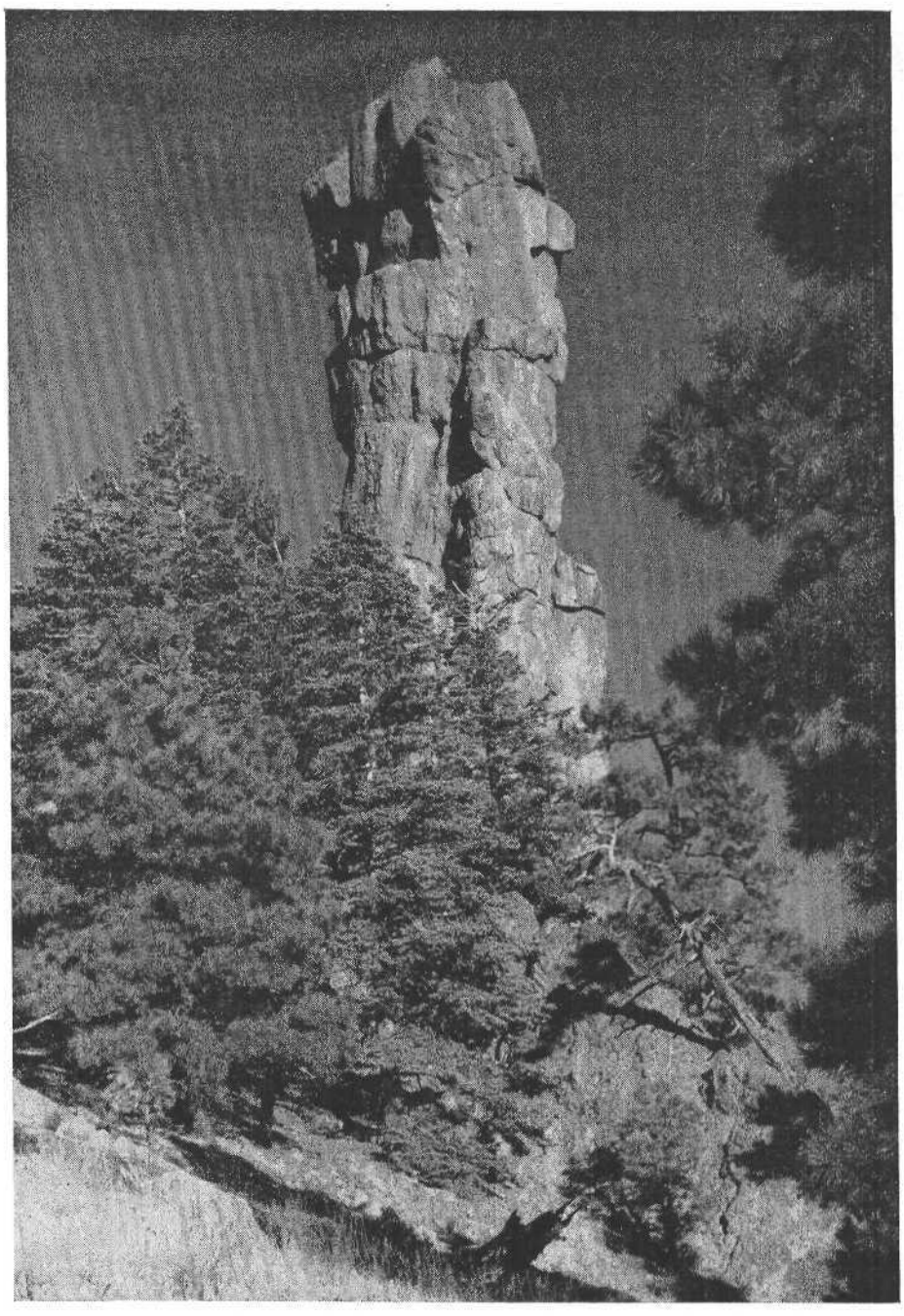
For the next 15 years, Williams roamed the West, hunting, trapping, trading and establishing for himself a reputation. He was known in Wyoming, Oregon, California, Arizona, New Mexico and Old Mexico.

With the eventual collapse of the fur market, Williams and many of his fellows turned to other pursuits. In the company of desperate men, he is reputed to have participated in horse stealing raids into California and Old Mexico. This activity, plus the trapping and hunting, made him familiar with the shortest and best routes between various points of the Southwest. A few years later, when the gold seekers began their rush to California, this information was invaluable. Bill Williams and his contemporaries were hired by immigrant trains as well as the Army and other government expeditions to lead them across the wilderness to the coast.

At 63, Williams met a typical Mountain Man's death. He was killed in his camp by a band of Ute Indians recently escaped from an Army punitive campaign.

Legend has it that the Indians did not recognize Old Bill and after they realized whom they had killed, they returned to his camp and gave him a chief's burial.

They carried his body to Old Bill's favorite spot in Northern Arizona, the legend continues, and buried it at the base of a massive natural rock shaft which stands nearly 100 feet high, well up the western slope of the mountain named in his honor.



Bill Williams Monument, a massive stone shaft high up the side of Bill Williams Mountain.

Some historians believe that the Ute Indians deliberately killed Williams because he had betrayed them. The Old Mountain Man had taken a Ute wife and for many years had lived amongst the tribesmen. One source said he was killed because it was he who had led the Army against the Utes; another declares that some Utes had given Williams many pelts to take into Santa Fe to trade and he had squandered the money from their sale on such activity as buying bolts of calico, gathering all the peon women he could find, and unrolling the cloth in the street merely to watch them fight over it.

Williams, Arizona, was for many years known as Rogers Station after C. P. Rogers who camped at the foot of Bill Williams Mountain while out locating ranch land. It was a place free of hostile Apache Indians where game was plentiful, so Rogers stayed on. When the railroad came through, the name was changed to Williams.

Today, Williams is an important hub in east-west rail and highway transportation, and is a junction for travel to Grand Canyon. Millions of people pass through this country now, through the valleys and plains where the hardy Mountain Men were the first to place their moccasined feet.

Icicle Agate in the Gusty Silver Peaks

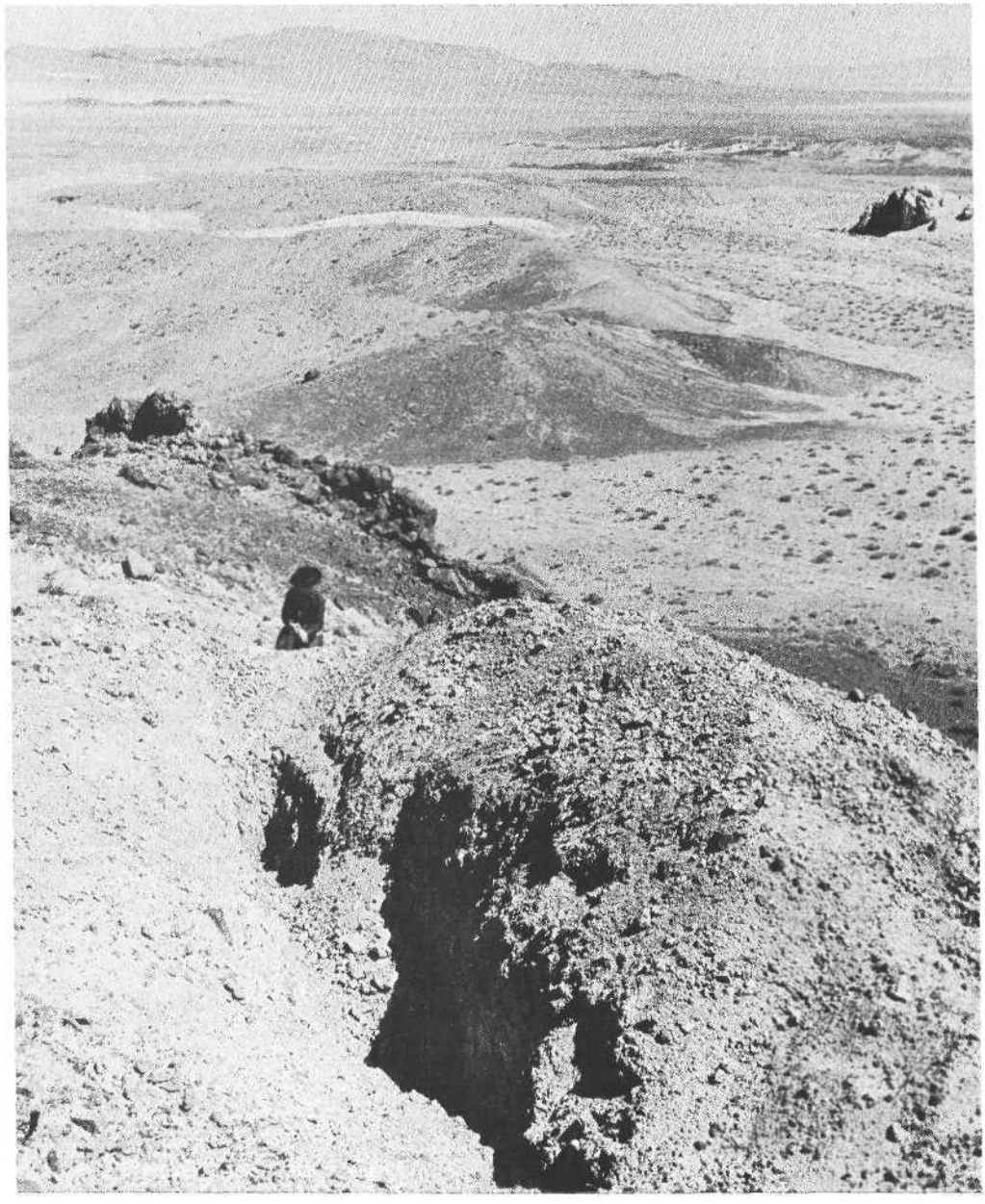
By HAROLD O. WEIGHT
Photographs by the author
Map by Norton Allen

West-central Nevada's high desert is a land of startling geological contrasts, invigorating nights and panorama-filled days — but bring your own firewood if you want a warm camp meal. In addition to the ever present thrills of an outdoor adventure, the Silver Peak Mountains outing offers beautiful icicle agate specimens to the ambitious rockhound.

ON A MID-JULY morning in 1950, Grace and John Callahan led us into the Silver Peak Mountains southwest of Blair Junction, Nevada, in quest of that frigidly named gemstone, icicle agate. The sky was overcast, with occasional drifts of light rain falling on the mile-high Nevada desert while an ever-freshening wind combed the country with unusually sharp teeth for summer, even at that altitude.

The night before, at the Callahan's summer home in Columbus ghost town, Grace had shown Eva Wilson, Lucile and me a beautiful stone cut from icicle agate. The appropriateness of its name was obvious, with its tiny white "icicles" thrusting into the clear chalcedony from the walls of the vein. Houston Howard, the Callahans thought, was the first to discover icicle agate. He was living at Blair Junction at the time, working for the Tonopah & Goldfield Railroad.

Icicle agate diggings in the Silver Peaks. Cleaning out the old workings would be necessary before any additional stone could be obtained from this vein. Monte Cristo Mountains at center and left background; San Antonios right. Highway 95 runs through the valley, near the base of the Monte Cristos, and Silver Peak highway cuts down at right.



This railroad has since been dismantled and Blair Junction abandoned. John, who had not been to the field for some time, warned us as we left the Junction ruins that its rediscovery would be difficult.

We headed westerly on an old trail to Emigrant Pass that showed no evidence of recent use. We wavered to the south and shortly joined what apparently had been the old main road through here, but it was in little better condition than our first road, and when we reached the first broad wash, which recently had run a great deal of water, the trail almost vanished. But as we followed it, occasional bits of old trail appeared on the higher parts. And about a mile farther on, after entering a side canyon, John pulled up at the foot of a dark ridge among the old clay lakebeds. He and Grace led us up its steep eastern slope. Near the top we came to a gaping trench more than a dozen feet long and three to six deep. John Callahan whistled as he examined it.

"Looks like we'll have to dig if we expect to find anything good!" he said.

After lunch we went to work, following the broken vein down through the clayish matrix. We also searched the slopes below the cut and around the sides of the hill. We found several pieces of icicle agate which would cut spectacularly and a more abundant vein agate which Lucile suggested should be called white flame.

But it was a bad day for rockhounding. The wind whipped dirt into our eyes as we dug. On the hillsides it was cold unless we kept moving. Then one of the wetter clouds located us. And since the Callahans were due home early and we intended to follow Emmigrant Pass into Fish Lake Valley that night, we collected our finds and headed back down the big wash.



End of trail in the Silver Peak Mountains southwest of Blair Junction. The original icicle agate diggings are at top of the dark hill extreme right. Some icicle agate and a good deal of white flame or plume is found on various parts of the hill at left.

Lucile and I had long planned a return trip to the hill, but we did not make it until April of this year. We found the ruins of Blair Junction even more dilapidated and fragmentary with little to show that only a half a century before it was an important confluence of two busy railroads.

Then the Tonopah and Goldfield's many trains carried world-renowned celebrities and always-welcomed capitalists from New York, Philadelphia, Chicago and abroad, to see or invest in the world's greatest gold and silver camps. Then its many freights were jammed with mining equipment and supplies, concentrates and ores.

And here it was that the Silver Peak Railroad, built in 1907 by the Pittsburg Silver Peak Mining Company, branched south to serve Silver Peak and the great 1000-stamp mill at Blair. That city was metropolis enough to boast a lively newspaper, published by Bill Booth, whose columns were full of new strikes, mine developments, manhunts for murderers.

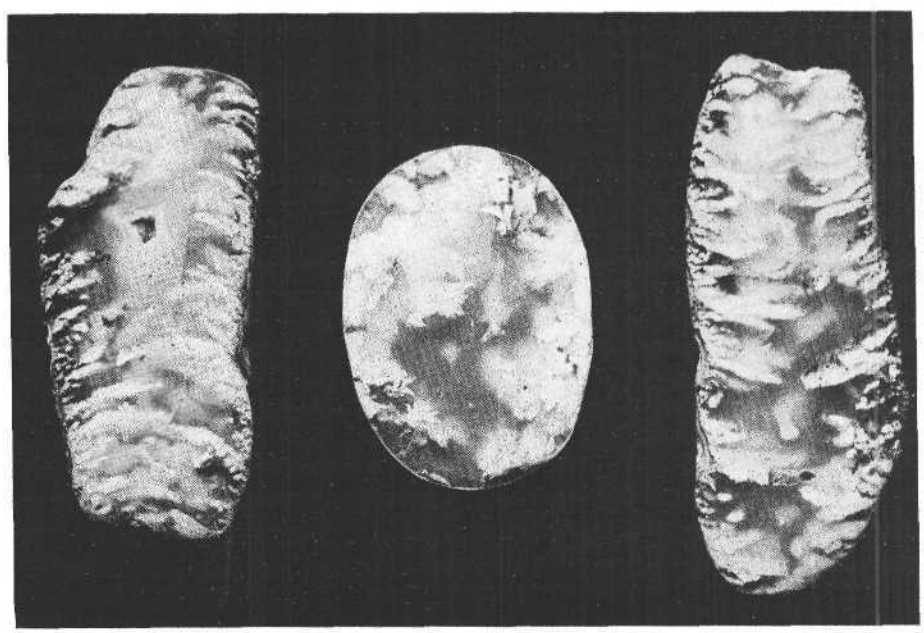
Silver Peak District has had many booms—the most important coming in the 1860s, 1906 and 1938. But during one of the slack periods its railroad was abandoned. The Tonopah & Goldfield had its ups and downs—with a decisive boom in World War II because of military activities on the Tonopah Bombing Range. But it was abandoned and salvaged in the late '40s.

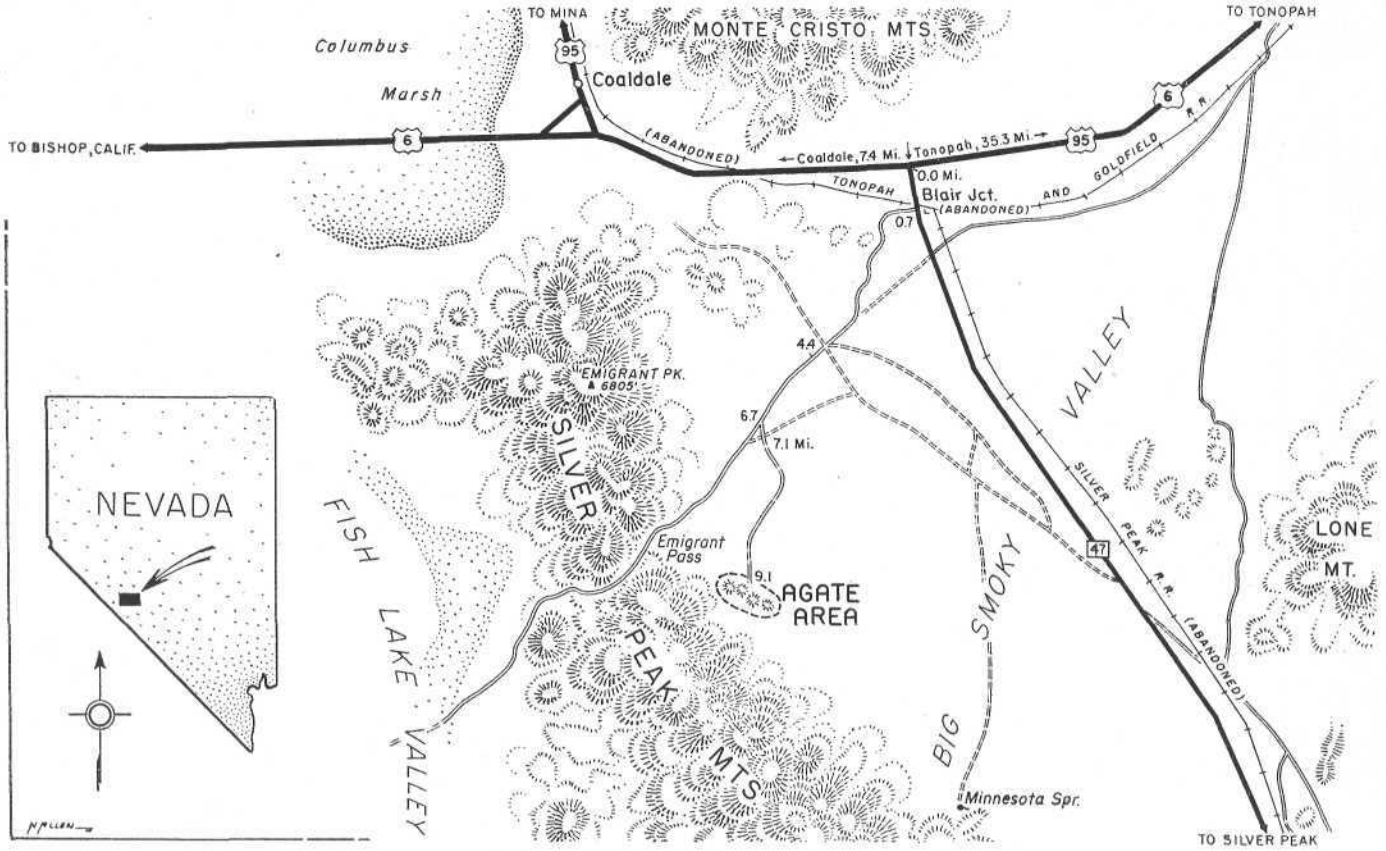
Today Blair Junction is a forlorn and fading ghost junction of two ghost railroads. Two semi-dugouts built of railroad ties remain, surrounded by broken glass, tin cans, wrecked automobiles, a few posts and concrete foundations and some still-struggling shrubs. Only a scattering of rotting ties, marching off toward Lone Mountain, mark the right of way of the vanished T. & G.

A keen wind accompanied us as we headed west from the Junction, but the sun was out and the day warm. The road was so much better than we remembered that we were not sure of the route until we reached an ancient metal sign we remembered.

One and three-tenths miles beyond the sign we turned south up the big wash. Fairly recent tracks could be followed all the way to the agate-seam hill this time, and even beyond. Angling across this wash we saw the reason for some of the travel on Silver Peak back trails—a double row of mining claims laid end to end and extending as far as we checked. Investigation of one of the location notices showed they were relics of this region's wild uranium claim-staking spree of late 1954 and early 1955.

Icicle agate (left and right) is the collectors' prize in the rock field in the northern Silver Peak Mountains. White flame or plume agate, center, is more common and also cuts into beautiful stones. Stones cut by Anna Poste.





Tonopah had been the heart of that excitement. One company had imported 7000 redwood posts just to mark its claims. Another made 2000 locations. The face of the country north and west of town bears thousands of regularly-spaced mounds representing wholesale scoop-shovel discovery work. The whole of Silver Peak marsh, to the south of us, had been filed upon. So far as I know, uranium is not being shipped from any of these diggings.

Most of the claims filed in that excitement slipped quietly back into the public domain at the end of the assessment year or sooner, with no discovery or assessment work, no exploration or mining done.

Lucile and I climbed to the agate diggings and found the trench considerably lengthened and deepened. None of the icicle vein showed along the bottom. While it probably continues down into the hill, it would have taken more time than we had to clean the trench out. So we again hunted the hill's slopes and again were rewarded with good cutting pieces, though quite small, and with indications of other veins which carry the icicle-type material.

From the top of the hill there is an eagle's view of a wide sweep of Nevada. We looked out across the Monte Cristos and the San Antonios and Lone Mountain and, of course, much of the Silver Peaks. All around us were the rounded, improbably-smooth hills of the Esmeralda lake bed formations and the jagged volcanics that had intruded amongst them during the eons when this was a geologic battleground. The long afternoon shadows accented the vividness of the land, imparting a story book coloring that had been entirely absent in the rainy gray of our earlier visit.

It seemed unlikely that all this jumble would produce but one hill of interest to rockhounds. I struck northwest, hoping to find both additional agate and a campsite that would give us some shelter from the still-rambunctious wind. In the towering western wall of the next wash I found icicle agate on another dark ridge, and also a protected cove.

It was almost dark by the time I had worked the car down the first wash, across country and up the next, into the cove. Wood for a cooking fire was our immediate need. We found there simply was none. Nor were there any shrubs big enough to have dead branches worth the plucking. I did find a splintered post in the wash, probably floated down from some defunct mining claim. But it had to do for both evening and the next morning, and I suggest future campers bring their own fuel or pick up some tie fragments at Blair Junction.

With the portable grill up and some good coals glowing, Lucile quickly prepared one of her one-dish camp meals. This time she emptied a can of cream of chicken soup, one of solid packed tuna and one of young green beans into a pan, mixing them with some fresh green pepper and seasoning. We were tired with the day's long drive and our hill climbing at an unaccustomed altitude, but this dish, poured over grill-made toast and accompanied by authoritative boiled coffee, sent our spirits soaring.

That night the world was as silent as it was dark. No coyote cried. No night bird moved. It seemed you might hear — or imagine you heard — the sparkling of the stars.

We breakfasted at sunrise, with two happy crows flapping low over us, cawing derisive comments and apparently playing a sort of tag. Lucile was out exploring first—sinking over her high shoe tops while climbing one of the clay hills. Then she checked the new agate ridge while I made a circling hike of several miles back into the edges of the Silver Peaks. There was spectacular scenery along my route, but no real rock finds. So we packed and drove back to our first location. From there I investigated three similar hills farther to the south and east, finding seams or float of good cutting agate on each of them. In a canyon on the first one, I found, beside a vein of agate, a rusted tobacco can with a location notice made out by Houston

Howard in 1946. He had called the claim the White Plume, a good designation. In this same area were fine cabinet specimens of the vein, with beautiful botryoidal chalcedony vugs.

We had planned to leave before noon, but it was long after when I came back from my explorations. I expected to find Lucile impatient. She was—but for an unexpected reason. I saw her a hundred yards beyond the car, staring fixedly at the ground and moving about rapidly from time to time.

"Hurry—and bring your camera!" she called. "I've been trying to keep this lizard entertained until you got back—or he's been trying to entertain me."

I hurried—but I need not have. The lizard—a small Bailey's Collared—was stretched on a rock, soaking in the heat. He eyed me almost indulgently and with no trace of fear as I set up the camera and Lucile gave me a running account of "Little Bailey's" morning program. It was so full of detail that I had never read in any lizard manual, that I insisted she write it out:

"He spurted right out from under my feet while I was hunting agate. We were about equally startled. He dashed up a smooth dark volcanic boulder, flung himself around until only his head peered over the top of it, eyeing me this way and that. He looked smaller than most we have seen in Nevada, Arizona and California, partly because of his gauntness—the skin on his sides hanging in a long fold. But his legs looked almost plump and his little front feet were so yellow he looked as if he were wearing gloves.

"After a period of inspecting me, he wriggled his tummy on the rock and let his eyes gradually close while the heat of the sunshine and warm rock penetrated his body. Time stretched out in that sun and silence. Then Little Bailey jerked his head up as if caught napping. But he had heard something I hadn't. A leap and half turn in the air, and he was on the ground 15 feet away. I came in on the gulp that rippled his striped throat—an unlucky fly or bee.

"Unconsciously I had moved forward to see what had attracted him and as he returned—I thought to his original rock — I backed up so I wouldn't cramp his style. But he kept coming until I moved sideways. Then he scampered past me and mounted another boulder, turned and fixed me with a slightly supercilious look—from under one drooping eyelid.

"With one morsel under his belt he seemed a little perkier. Pounce! He leaped from his pinnacle and licked in a little gold bee with chenille legs within the wink of an eye. Back on his current rock he looked at me again and carefully wiped his mouth. He relaxed. Siesta, obviously. The sun was even warmer and, unless you were as quiet as Little Bailey and I, it still seemed silent.

"But in the background was a faint buzzy drone, occasionally punctuated by a zoom as a fly circled around us. Little Bailey heard it too; he opened an eye. Suddenly he leaped and twisted in the air above his rock and was swallowing hard on a fly. He really caught that one on the fly, and hadn't lost his balance.

"He pivoted on his rock, facing a dry shrub about eight feet from him. I strained to see what attracted him and finally spotted another little gold bee, almost invisible in the light and shadow of the shrub, walking around on leaf and stem fragments. Little Bailey stalked him in the same manner a lion does his prey, his relatively huge bulk and steady movement never once disturbing the bee.

"Then the lightning broadjump, the flick of the tongue—and Little Bailey was again swallowing hard and bobbing his head. Did he get a little sting, or did gold chenille legs tickle his throat? He marched back to his rock and again wiped his mouth deliberately. In a moment he was dashing off in another direction, and in the distance I saw him adding another course to his meal.

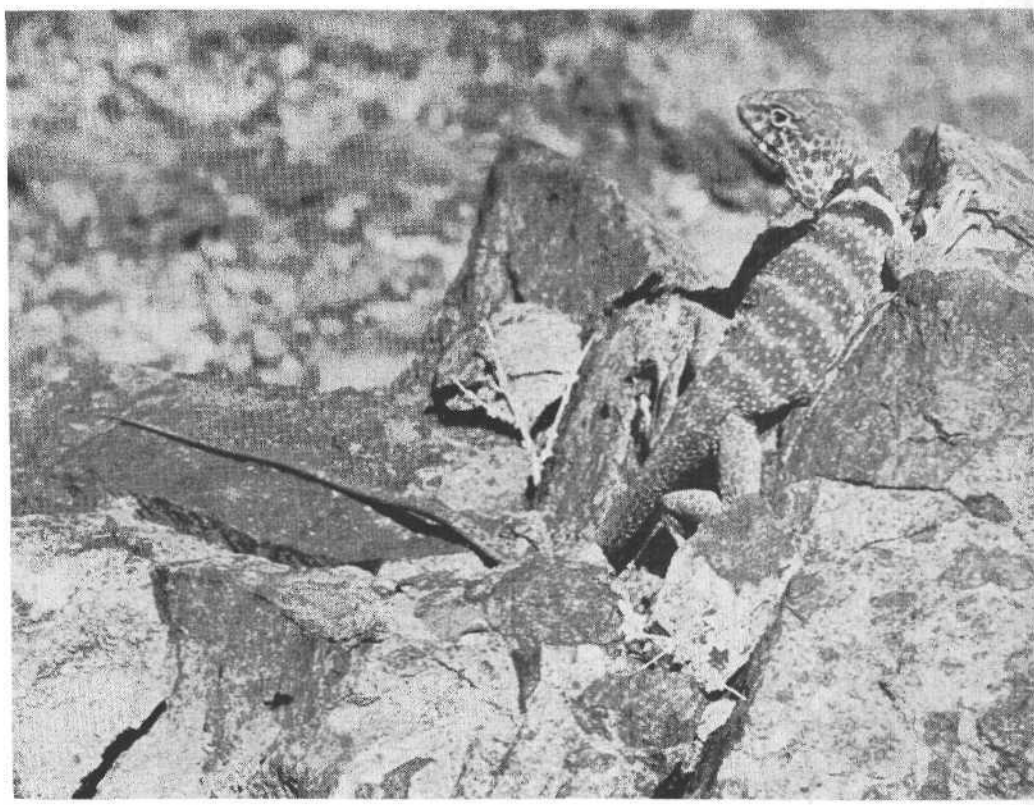
"I thought that would be my last look at him. But back he came, heading straight for me. This time I didn't move. He kept coming, climbed onto my shoe and started up. Reflex action stepped in and a kick threw him several feet away—which didn't hurt his feelings at all. He just found another boulder and took up his watch."

It was on this boulder that Little Bailey permitted—or rather, encouraged—me to photograph him, assuming a number of photogenic poses. And when I was through, Lucile stretched out her hand toward him to see how close she could get before he ran. And he let her actually touch his head, and then hissed instead of running and it was Lucile who jerked away. She reached out her hand again, and this time he let her stroke his neck and back.

"He seems to be quite a character," I said.

"I think he's a gifted, talented individual!" said Lucile.

Perhaps he was. Often the lizards we find in the desert hills seem to show an awareness and intelligence some larger animals lack. As they stare at us with obvious interest, yet with assurance and calm reptilian wisdom, I



Little Bailey, who entertained Lucile for nearly an hour with exhibitions of fly and bee catching, lizard pushups and lizard relaxation, then posed willingly for a portrait, apparently entirely unafraid of what must have been the first humans he had ever seen.

Desert Quiz

It is too hot to do much poking around on the desert these days, but in your imagination you may travel far and wide across the scenic areas of Nevada, Arizona, Utah, New Mexico and the desert sector of California—and that is what you will be doing when you tackle these Quiz questions. They cover a wide range of desert subjects and places, all of them fairly well known. Don't be discouraged if you get a low score, for you'll do better after you have read *Desert* for a few months. Ten is a passing score, 12 to 14 is fair, 15 to 18 good, and above that entitles you to go to the head of the Quiz class. The answers are on page 40.

1—A javelina is—A species of bird_____. A lizard_____. An animal resembling a wild hog_____. A weapon used by prehistoric Indians_____.

2—Going west through Daylight Pass the motorist would arrive in—Death Valley_____. Yuma, Arizona_____. North Rim of Grand Canyon_____. Carson City, Nevada_____.

3—According to legend, the Enchanted Mesa of New Mexico formerly was the dwelling place of—The Zuni Indians_____. The Hopis_____. The Acomas_____. The Apaches_____.

4—Most conspicuous cactus on the landscape of Arizona is—Cholla_____. Saguaro_____. Bisnaga_____. Prickly Pear_____.

5—Roosevelt Dam was built to impound the waters of the — Gila River_____. Salt River_____. Verde River_____. Bill Williams River_____.

6—Director of the National Park Service is—McKay_____. Emmons_____. Wirth_____. Stratton_____.

7—In New Mexico history the date 1680 marks the—Discovery of the Seven Cities of Cibola_____. Founding of Santa Fe_____. Annexation of the territory by Spain_____. A general revolt of the Pueblo Indians against the Spaniards_____.

8—A metate is used by Indians for — Killing game_____. Grinding meal_____. Storing food_____. Ceremonial purposes_____.

9—The mineral, Azurite, belongs to one of the following groups — Copper_____. Iron_____. Lead_____. Tin_____.

10—Kayenta, Arizona, is remembered as—The burial place of Kit Carson_____. The former capital of the state_____. The place where Geronimo was captured_____. The former home of the John Wetherill family_____.

11—Walpi is the name of a village in the reservation of the—Mojave Indians_____. Ute Indians_____. Hopi Indians_____. Papago Indians_____.

12—Lee's Ferry was a famous river crossing on the — San Juan_____. Colorado_____. Green_____. Little Colorado_____.

13—The botanical name for Mormon Tea is—Ephedra_____. Larrea_____. Bursera_____. Yucca_____.

14—The Epitaph is the name of a newspaper published in—Goldfield_____. Tonopah_____. Jerome_____. Tombstone_____.

15—Mountain Men who came West in the middle of the last century were trapping mainly for—Beavers_____. Bears_____. Wolves_____. Mink_____.

16—An Indian Kiva is—A storage room for corn_____. A lodge or ceremonial room for men_____. Weapon for hunting_____. A pipe of peace_____.

17—Perlite is mined for—Making borax_____. Tempering steel_____. Use as insulation_____. Making tungsten lamps_____.

18—The array of Indian petroglyphs known as "Newspaper Rock" are in — Petrified Forest National Monument_____. Bandelier National Monument_____. Grand Canyon_____. An island in Great Salt Lake_____.

19—According to legend, the Lost Dutchman mine is in the—Funeral Mountains of Death Valley_____. Superstition Mountains of Arizona_____. Charleston Mountains of Nevada_____. San Jacinto Mountains of Southern California_____.

20—Highest peak visible from the Colorado Desert of Southern California is—San Gorgonio Peak_____. San Jacinto Peak_____. Tahquitz Peak_____. Santa Rosa Peak_____.

wonder what they are thinking about.

Anyone who has watched a startled lizard rear up on long hind legs and run two-footed, with shorter front arms held before his breast, cannot fail to see a startling resemblance to the mighty dinosaurs that were dominant in ages past. Is it possible they are the descendants of that monstrous race? Was Little Bailey's family ancient when the silica-rich solutions were seeping through these cracked lands to form the agate we had been hunting?

If so, Little Bailey made it clear that the fall of a race from world rulership is not always an unhappy one. Relaxed against the hot rock in pure contentment, he seemed to be saying: "Don't you wish you had nothing more to worry about than I have, Master Race? Wouldn't you like to stretch out on a rock beside me and worship the sun?"

In those hills the problems of every day living had been washed from our minds by sunshine, beauty and peace. The searching for prize rocks and the study of Little Bailey had filled our thoughts. Now, as we turned the car toward the paving, the world seemed to sweep back in. What had happened in the Near East since we had heard the news? And the Far East? Had someone exploded a more terrible H-bomb? What new subsidies and aids —to be taken out of our income— had Congress passed or been asked to pass? What new bonds had our county or our community dreamed up to plaster our home a little more heavily? And — yes — how were we going to meet next month's bills?

As we passed, slowly, Little Bailey crawled up on another rock, rested his chin on a ridge and watched us.

"Pick me out a smooth, warm rock, Little Bailey," I said. "I may be back."

LITTERBUG CLEANUP COSTS STAGGERING, REPORT SHOWS

Motorists are throwing some $7,000,000 out of their car windows annually — just on roads and streets in the 13 Southern California counties. That is how the Automobile Club of Southern California described the highway trash problem whose $5,000,000 cleanup cost in Los Angeles, Orange and Ventura counties alone would be enough to build two and one-half miles of full freeway each year. "Experience has shown that the only real solution lies with the individual. The average motorist feels that he is hardly contributing to the trash problem by throwing out a small wad of tissue paper or a handful of peanut shells, but it is exactly these acts repeated time and again that create most of this expensive situation," the club said.

LIFE ON THE DESERT

Navajo Sing in Cross Canyon

The white doctors had cured Mae's broken ankle and lacerated scalp, but she now complained of dizziness. The Navajo Medicine Man would be needed for this. By fortunate circumstance, the author arrived at the camp in Cross Canyon on the day of the sing and this is her story of the ancient healing ritual she witnessed.

By EDITHA L. WATSON



Navajo Medicine Man mixing a secret potion. Photograph by D. Clifford Bond.

LAST MAY my Navajo friend Alice Benally asked me to take her to Cross Canyon to visit her sister Yanabah. Alice's real name is Astzan Dilwohee (Fast Runner Woman), but "the white could not say it," so she adopted something easier to pronounce. She is a gentle little widow who has worked hard all her life. The Navajo family is close-knit, and Alice likes to visit her sisters whenever she can, which is not often.

At Fort Defiance Alice bought flour, sugar, bread, canned milk and tomatoes as a gift for her sister. We ate lunch before we started, for Alice was not sure there would be enough for us at our destination. Thus prepared, we took to the road which runs west across the reservation through the forest.

When a Navajo says he lives at a certain location, he means that his hogan is somewhere within riding distance of that place. Alice had always said that Yanabah lived at Cross Canyon, 25 miles west of Fort Defiance, but I was not surprised when we left the main road just below the Sawmill cutoff in the canyon and traveled south for a good many miles.

Presently we came to a group of several hogans in a clearing. Nearby was a fenced-in field where a man was plowing with two horses. He was the only man in evidence. Two woodpiles resembling small tepees stood in convenient locations and beyond the largest hogan was a shade, a lean-to made of long, leafy boughs laid against poles. In front of this shade the cooking fire sent up lazy smoke spirals.

Alice and Yanabah greeted each other as casually as if they had been together all week. I was introduced in Navajo for Yanabah speaks little English. We shook hands and I was seated on a cot in the shade. It was nearly noon, and preparations for dinner had begun. A freshly-butchered carcass of a sheep hung at the other end of the shade. Its entrails, carefully cleaned and wound together in rolls about the size of a large frankfurter, were toasting on a grid over the coals.

Yanabah poured water from a keg into a white enameled coffee pot and laid it among the coals to boil. When it did she added coffee scooped from the can with her fingers and moved the pot to the edge of the fire.

She cut some thin slices of mutton and laid them on the grid and from a covered kettle she took enough dough to make us each a large round cake of *dah dinilgazh* (fried bread). It was fried in mutton grease and came out crusty brown and delicious. The food was placed on a legless zinc table top and we sat on low wooden stools around it. One eats when food is offered, in spite of having lunched an hour previously.

I learned to my delight that we had arrived on the eve of a one-night sing, and we were invited to stay and attend it. After lunch a gray-haired Navajo man went into the nearby hogan, shortly followed by the one who had been plowing in the field. Soon a low chanting came from the hogan.

A girl of 16, dressed in her best

rust-colored chiffon-velvet blouse and a new green rayon satin skirt, and hung with several strings of turquoise and silver, emerged from the hogan and came over to us. She was Yanabah's daughter Mae, for whom the sing was being held. She had been in an accident some months before, I was told. A horse had thrown her and she suffered a broken ankle and a lacerated scalp. Doubtless her skull would have been fractured had it not been for the protection of her hair, which she wore in the usual Navajo knot tied with green yarn. Now, in her role of patient, she had unbound it, and it flowed down her back to her knees.

Following the accident, she was taken to Ganado hospital where the doctors "shined a light through her," and put her ankle in a cast. Now she was physically well, but she complained of a dizziness when she moved about, and a sing was needed to cure this condition. I was told that it was to be the Claw chant, which is given to persons who have had accidents.

In mid-afternoon Alice and I walked over to the hogan and sat in the women's place along the north wall. The younger man was grinding dried herbs between two stones, while the medicine man sat near him and sang the proper chants. The *hatathli* (singer) accompanied himself with a rattle made of many small dark objects which I took to be the dewclaws of deer, attached to a handle by short leather thongs. A little boy, his grandson, sat snuggled close to him, often looking up into his face.

Behind the men were a ceremonial type basket, several small buckskin bags and another rattle. When the grinder had made a pinch or two of his medicine as fine as possible, he sifted it through a small wire sieve onto a piece of paper, and ground a fresh portion.

The actual sing would not begin until late that evening, so we went to bed in broad daylight in order to be refreshed for the ceremony. Alice and I slept in a hogan near the plowed field.

She awoke me at 11 o'clock. The weather was cool for May. Quickly I wrapped the blanket from the cot around me, and followed Alice out into the moonlight. We heard singing in the main hogan and waited until the chant was finished before entering it.

A solitary kerosene lantern faintly illuminated the hogan. Mae, the patient, naked to the waist but wearing all her jewelry, sat on the west side. Feathers projected over her face from a ceremonial head piece. She still wore her high-laced tan child's shoes with low heels.

The medicine man and two helpers were seated beyond Mae, and back of them, on the south side of the room, were Yanabah's husband, her son, and several other men. I could scarcely see them in the shadows, but I recognized the principal singer as the *hatathli* who had chanted in the afternoon.

We came in during the mixing of some medicine. A small mound of dirt about eight inches across and three inches high supported a shallow pottery vessel containing water. Into this the medicine man sprinkled something taken from one of his various pouches, and then drew lines in the air above it with a feather-decorated wand, finally stirring the medicine with its pointed tip. At last he gave the patient four sips of the stuff then drank the rest himself. He then applied a pinch of *tadidin* (sacred pollen) to the soles of the girl's shoes, her knees, around each shoulder, and to the top of her head, and then placed it in her mouth.

Later on she was given several feathered wands to hold, with instructions not to go to sleep or let them fall. If Yanabah had not given her an occasional admonitory poke, the patient would have dozed in spite of herself. It was warm in the hogan, and the dim light and the monotonous chants had a soporific effect. I found myself nodding and sympathized with the girl. It was hardest to keep awake in the pauses between the songs. All would be still except for the ticking of a kitchen clock somewhere behind me.

It was a glorious morning. Pinyon smoke was fragrant in the air, and larks and doves were singing. Having received his fee of a tanned buckskin and a turquoise bracelet, the medicine man had gone, taking his little grandson. The assistant was back at his plowing, apparently quite alert even after singing until dawn. He was paid a sheep for his participation in the sing, I later learned.

Alice and Yanabah were talking as they prepared the morning meal over the fire. And here came Mae, her hair once more neatly wrapped and tied, bringing a basin of warm water and a towel for the *bilagana* (white woman) to freshen up before breakfast.

I was told, weeks later, that she had no more dizzy spells.

Picture-of-the-Month Contest . . .

Beyond every rise on the desert, in every canyon, across every wash there is a new world awaiting members of the camera fraternity. September marks the start of another season in which these places safely and comfortably can be visited. Any photo taken on the desert qualifies for Desert Magazine's Picture of the Month Contest. The subject possibilities are endless—birds, trees, sunsets, campers, Indians, animals, insects, landmarks, rivers, mountains, thunderclouds, children . . .

Amateur photographers as well as professionals are eligible for the monthly contest in which two cash prizes are given.

Entries for the September contest must be sent to the Desert Magazine office, Palm Desert, California, and postmarked not later than September 18. Winning prints will appear in the November issue. Pictures which arrive too late for one contest are held over for the next month. First prize is $10; second prize $5. For non-winning pictures accepted for publication $3 each will be paid.

HERE ARE THE RULES

1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.

2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.

3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.

4—All entries must be in the Desert Magazine office by the 20th of the contest month.

5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.

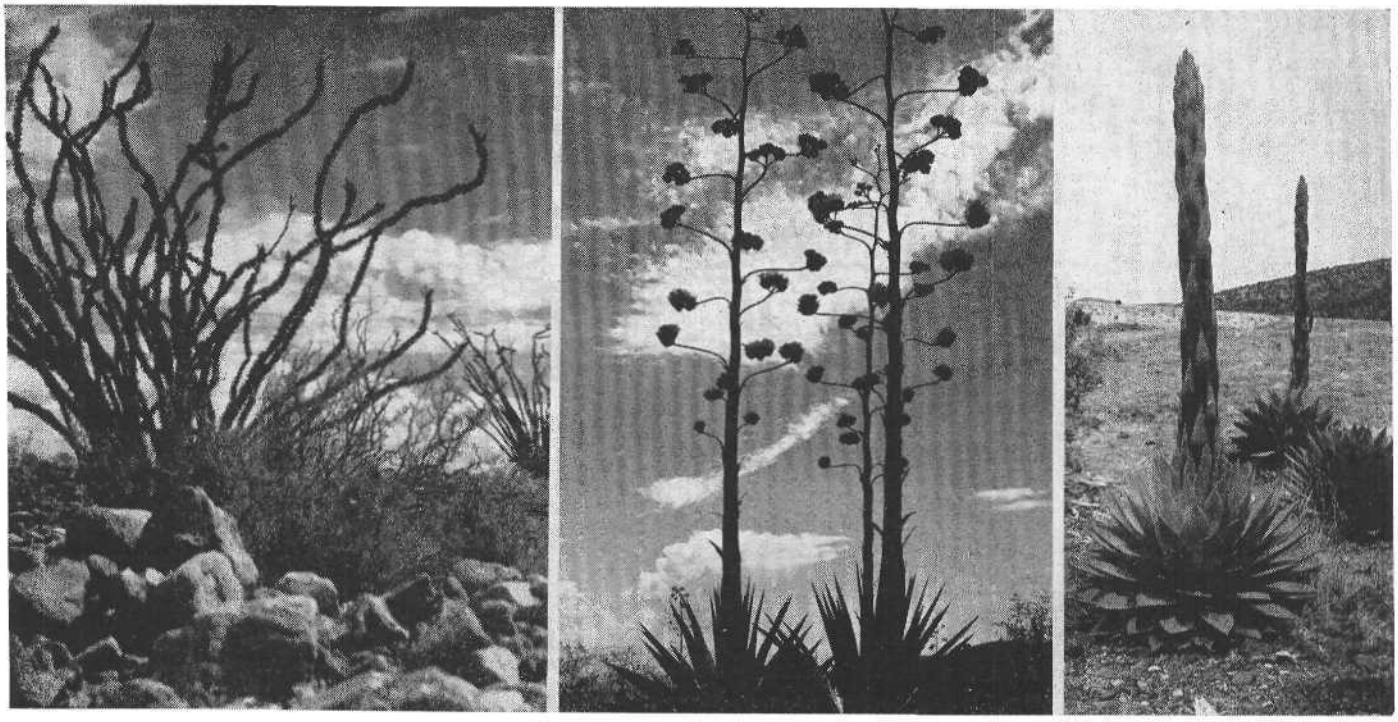
6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.

7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

The Desert Magazine **PALM DESERT, CALIFORNIA**

ON DESERT TRAILS WITH A NATURALIST-XXIX



Ocotillo, left, and Agave, center, are often mistakenly classified as cacti. At right are agaves in bud. Southwestern natives relish these tender, sweet stalks as food.

Not All the Thorny Plants Are Cacti . . .

One of the most common fallacies concerning desert flora is that all plants bearing thorns are members of the cactus family. Newcomers to the Southwest as well as many old timers are guilty of this sweeping and erroneous generality. Three of the thorny plants most often placed in the cactus family category — where they do not belong — are the agave, yucca and ocotillo which are members of the amaryllis, lily and candlewood families, respectively.

By EDMUND C. JAEGER, D.Sc.
Curator of Plants
Riverside Municipal Museum
Sketches by Lloyd Mason Smith

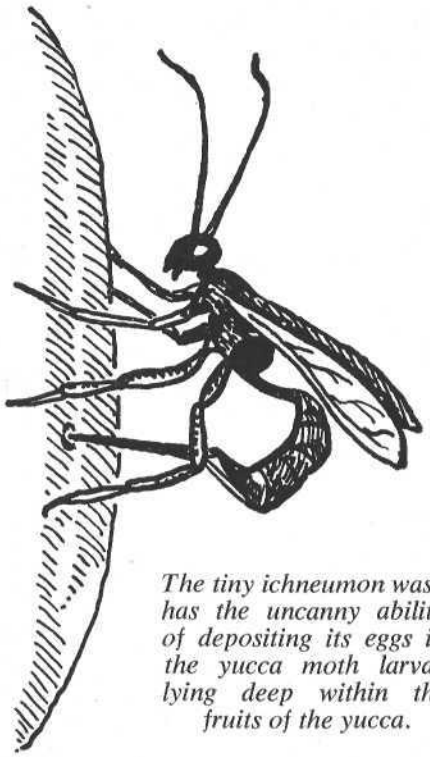
OFTEN HAVE I seen displayed in desert shops frequented by tourists, garishly colored postcards on which are shown, usually much crowded together, a wide variety of thorny shrubs, including such diverse plants as cacti, century plants and ocotillo, all labeled "Desert Cactuses." Thus again I am impelled to protest against the common and erroneous belief that any plant that has thorns, whether they be long or short, straight or curved, slender or stout, must be a cactus of some kind.

One of the more spectacular plants often grown in semi-tropic public and private gardens and which is commonly mistaken for "a kind of cactus" is the Century Plant or Agave (a name derived from the Greek word for "admirable").

"A century plant must be a cactus," argued a recent visitor to my Riverside garden where I have one corner devoted to several kinds of agaves, "because its long leaves end in stickery thorns." Actually the Agaves are very closely related to the lilies. They are called Century Plants because of an old fallacious notion that they bloom but once in a hundred years. They come nearer to blossoming every 15 or 20 years rather than every century and the more water available, the greater the chance the plant has of attaining early maturity and flowering. The period of sending up a flower stalk (called a "scape") is, with few exceptions, the end of the parent plant's function and life. However, shortly after the death of the main plant, young offshoots from the base or immediate periphery perpetuate the life of the agave colony and it continues growing, blooming, dying and gradually spreading in extent.

Agave has exceedingly numerous representatives both in Mexico and Central America. More than 170 kinds have been listed for Mexico alone. The dry southwestern areas of the United States have a considerable number of Agaves, too, and in some of the higher rocky areas where drainage is good, it may almost become a dominant plant, as on the lower portions of the Palms-to-Pines Highway above Palm Desert in California.

One of the more widespread and best-known Agaves of our far southwestern deserts is the plant known as



The tiny ichneumon wasp has the uncanny ability of depositing its eggs in the yucca moth larvae lying deep within the fruits of the yucca.

Agave deserti. Small to large colonies of it occur on numerous rocky sun-drenched lower mountain slopes of the western Colorado Desert of California and well southward into picturesque Baja California.

Each plant of an attractive Agave colony consists of a dense rosette of pale green, fleshy, beautifully marked leaves, each of which is concave all down its face, thorny edged, and terminated by a stout, stiff, pungent, dark brown spine. In Spring some of these noble plants send up 8-to-10 foot flower scapes which appear, especially in their early growth, much like huge asparagus-tips. Ultimately, at the upper end of this tall stalk appear groups of handsome, somewhat funnel-shaped, yellow flowers set at the ends of outreaching, arm-like, flattish, horizontal stems. These are in turn followed by hand-like clusters of most attractive fruit pods. Especially appealing are these pod-clusters after they have dried, split and shed their seeds; then they are often sought out by desert residents to make most unusual dry-arrangements and bring, as it were, a bit of the desert right into the living-room. The young flower buds and fruits were eaten by the local Indians either raw or cooked.

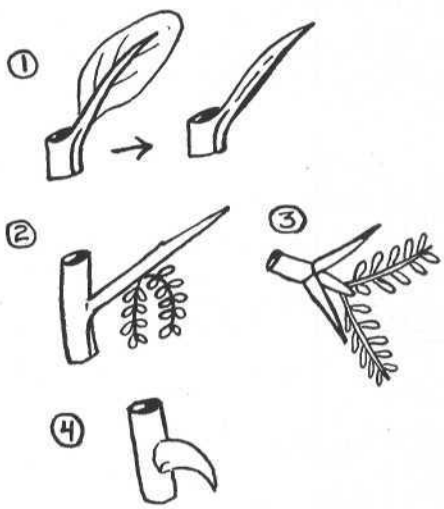
Agave leaves, when dry, are easily split into strong threads, used by southwestern Indians in the weaving of sandals and cordage. These same threads are sometimes chosen by the vibrant Scott's Oriole for material out of which to construct its semi-pendant nest. This bird also has been known, at times infrequent, even to suspend its nest from the horizontal flower-bearing arms of the scape, but usually it nests in a Yucca.

Years ago while traveling with a burro as my sole companion and *mozo,* or burden-bearer, I came upon some hill-country Cahuilla Indians who had just opened a stone pit in which they had roasted the sugar-filled butts of some agave flower stalks. My friendly interest in what they were doing was rewarded with a chunk of the sweet brown food. I was surprised to find how good it was and how much it tasted like well-baked yam or Hubbard squash. Along Mexico's west coast, in the colorful food markets of Guaymas and Mazatlan, you can buy slices of sugared agave center that taste much like brown sugar.

The long pith-filled agave flower stalk is a favored nesting place of the desert's small, always cheerful and sprightly Ladder - back or Cactus Woodpecker, *Dryobates scalaris.* These diligent birds easily hack out a hole about an inch and a half in diameter and to a depth of 8 to 10 inches inside the stalk. At the bottom of this cavity they place soft plant fibers and feathers to a thickness of several inches and on this soft, concave, rather solid "plug" are laid four to five white eggs. After incubation begins, the male bird is very much about, but after the brood has hatched and needs food, he is a very busy and often noisy father. He and his mate are then seen frequently popping in and out of the nest hole as they leave to seek and bring back the fat insect larvae for the birdlings who seem insatiably hungry and always pleadingly and noisily begging for more and more food.

Another spiny plant erroneously brigaded with cacti, and hence often pictured on the before-mentioned postcards is the Mojave Yucca or Spanish Bayonet. It is known to botanists as *Yucca schidigera* (from the Greek-Latin combination "schidi-gera" meaning "spine- or splinter-bearing"). Its long yellow-green, lanceolate, thready-edged and spine-tipped leaves yielded one of the strongest and most useful fibers for the southwestern Indian. From it he made thread, cord and many other things. The fruits of the yucca, borne in rather short, compact clusters, are large, ovate and green and are almost always infested with the larvae of certain moths, such as the Yucca Moth, which pollinates the flowers at night. Lloyd Mason Smith and I once witnessed the amazing spectacle of a small three-fourths inch long, dark-brown ichneumon wasp darting nervously over some green yucca pods to locate and parasitize with its eggs some of these moth larvae deep within the pods. This wasp had a long needle-like sheath at the posterior of its abdomen and within this, a still longer but flexible thread-like mechanism which served both as drill and egg-laying tube, or ovipositor.

The little wasp had a most uncanny way of sensing the exact location of the larvae deep in the egg-shaped fruits on which she wished to deposit her eggs. We saw her fly several times around each fruit, as if in reconnaisance. Suddenly, she seemed by her actions to say: "Here is the place; down beneath here is a larva." At once she would alight and firmly thrust her sheath protected drill deep into the soft green yucca fruit to the site of the moth larva and lay an egg. By what means she was able to locate the small grub so readily and surely is a riddle the answer to which I would certainly like to know. Lloyd and I opened several of the fruits on which she had worked, having marked the exact spot of each



Types of spines: 1. leaf; 2. branchlet; 3. stipule; 4. prickle.

drilling, and in every instance we found that she had, with unerring accuracy, located a larva and had bored down to it by the most direct route.

Some years ago I brought in from the desert the short flower-stalk of a Mojave Yucca, and when I put my ear up to it, I could distinctly hear, working within, several beetle larvae. The clicking noises made by the strong jaws were unmistakable evidence of their eager feeding activities. I was amazed to find that after three years I could still hear the industrious larvae at work inside. During the fourth year the jaw-clickings were no longer heard and I decided that the larvae had entered the non-feeding pupal stage of their life cycle. It was only during the fifth year that the cycle was at long last completed, and then I began to see here and there small holes appear in the stalk's bark and from these

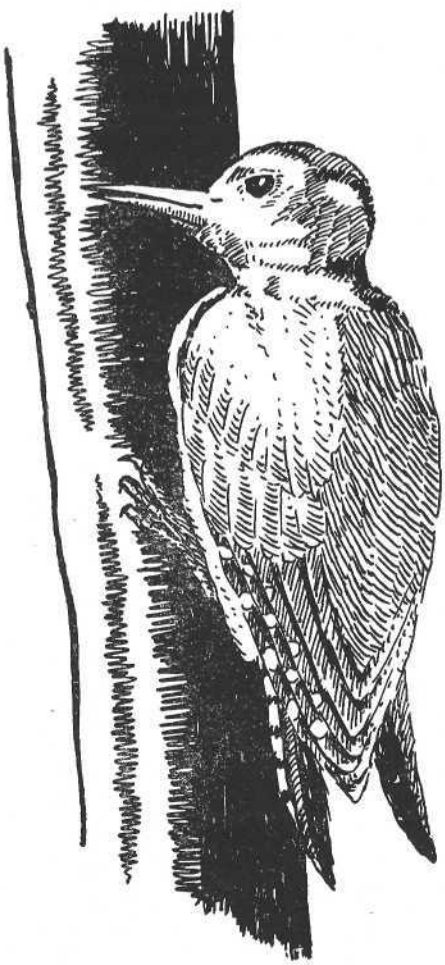
emerged several small shining black beetles, or weevils as we sometimes call this particular kind of snouted beetle. Sometimes Nature takes much time to do her work.

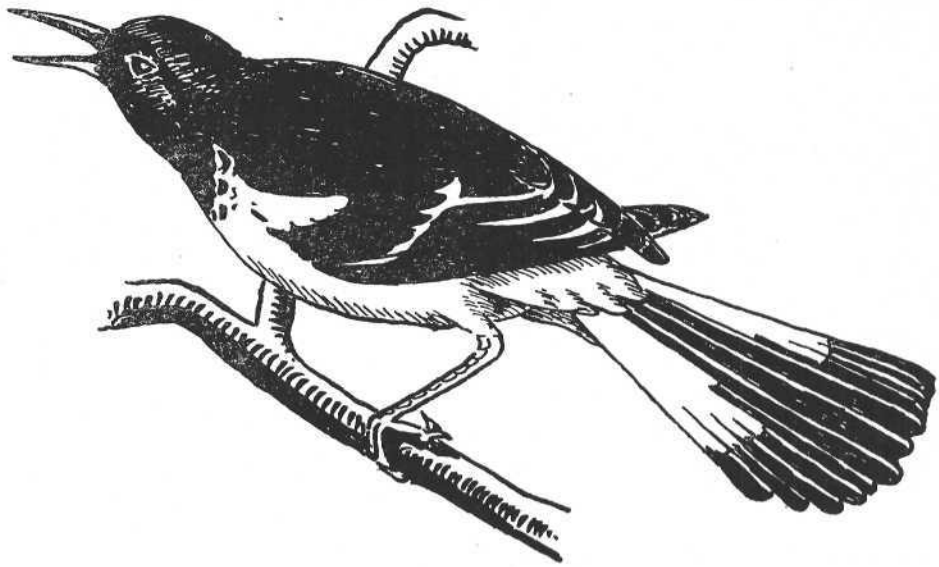
Also pictured alongside the agaves and yuccas on the postcard is the Ocotillo, with its long whip-like branches and many spines.

One has only to compare the widely different tubular flowers of the ocotillo with those of the multi-petalled and stamened true cactuses to see how vastly different the two plants are; it is rather like comparing a sunflower with a violet.

The ocotillo pictured on this particular card was the one common to southern Arizona, southeastern California, nothern Sonora and northern Baja California, the *Fouquieria splendens.* Further down on the Sonoran plains the place of this species is taken by the red-flowered, yellowish-green trunked Tree Ocotillo, *Fouquieria macdougalii,* called a tree Ocotillo because of its size and tree-like branching. This noble plant, sometimes 30 feet tall, is found along the paved highway some distance north of Hermosillo and continues on southward in the foothills and sometimes on the plains to Sinaloa where it is called *torote verde* by the native people. They employ the bark as a soap-substitute, especially when washing woolen articles. In February and March these handsome trees are a mass of crimson blossoms, and among the showiest plants of the northern West Coast Highway of Mexico. In addition to the two species just mentioned, there are six other kinds of Ocotillo known in Mexico.

The Ladder-back or Cactus Woodpecker builds its nest in the pith-filled agave flower stalk.





The Scott's Oriole sometimes uses the strong fibers from dried agave leaves to construct its semi-pendant nest.

Many unrelated plants have adopted a thorny covering both as a means toward moisture conservation and as a deterrant from being eaten by desert herbivores. The presence or absence of such spines, in itself, does not necessarily imply any relationship with the cactus family. As I said before, you must compare the flowers of these plants, for it is upon the flower structure that most plant families have been created, and by no stretch of the imagination can a cactus flower be confused with that of an ocotillo, agave or yucca.

Most botanists recognize three basic types of plant spines, (1) the type in which the leaf itself has become specialized and its lateral portion is reduced or absent altogether, leaving the rigid leaf-rib as a spine; (2) a specialized branchlet; (3) transformed stipules, paired appendages at the base of the leaf-stalk.

All of these are in part merely continuations of the main woody tissue of the stem itself. However, the so-called rose thorn, also found on our desert acacias (cats claw, etc.) should be termed a "prickle," for it is an outgrowth of the outer portion of the stem only, not of the inner woody portion; a prickle can be dislodged from the stem by firmly pushing it to one side, but this is not true of a spine. The word "thorn" as Dr. Lyman Benson says is a non-technical one and means nothing more than the popular word "sticker."

GRAVE OF ALESSANDRO IS MARKED WITH MARBLE HEADSTONE

Thanks to the interest of Harry Bergman, Dave Olmstead and other members of the Roads to Romance Association of California, a marble headstone has been erected in a lonely hillside cemetery where the body of Juan Diego, the Alessandro of Helen Hunt Jackson's *Ramona,* has lain unmarked and neglected since that tragic day in 1883 when he was shot by a brutal white man.

The grave was pointed out to members of the Association by Cinciona Lubo, a niece of Ramona. A handsome marble slab was placed on the adjoining grave of Ramona many years ago, and the oversight which left the mound of her husband, Juan Diego unmarked, has now been corrected. Harry Bergman was chairman of a committee which secured funds for the headstone by popular subscription.

The new headstone was unveiled at a simple ceremony August 19 at one p.m., after which the Indian women of the Cahuilla reservation served a buffet luncheon to Roads to Romance members and other visitors who had gathered for the ritual.

THE Desert MAGAZINE CLOSE-UPS

William L. Kenyon, author of this month's "Exploring Anza's Unknown Canyon," is unusually well qualified to write about the Southern California desert area for he is the State Division of Beaches and Parks' District Superintendent for the Southland.

A veteran of 20 years in the State Park Service, Kenyon has always been partial to California's desert areas and when he was appointed District Superintendent in 1948 he accepted with considerable enthusiasm.

Hobbies include 35 mm. color photography and he has done a great deal of desert traveling and exploring on his own time. "Not only officially, but personally, I am deeply interested in helping to protect and preserve some of our typical and outstanding areas for all time, so that anyone, now or in the future, may retreat to them when the press of civilization brings one an urge for recreation in the great, unspoiled outdoors," he wrote.

* * *

Ralph Freese, author of this month's "Old Bill Williams' Modern Mountain Men," gave up a music career in 1954 to devote full time to travel and writing. He has published several articles on travel as well as music and juvenile stories. History is his hobby and he has written two unpublished novels, one dealing with the Lincoln County War and the other set in Northern New Mexico where he spent his boyhood. At present the Freeses live in Bellflower, California.

* * *

Editha L. Watson, author of this month's "Navajo Sing in Cross Canyon," is a veteran of over 10 years service with the U. S. Bureau of Indian Affairs. At present she is area consultant for the Navajo Program of Save the Children Federation.

She is originally from Denver and for the past eight years has lived on the Navajo Reservation, "and I love it," she adds. She has had articles published in 30 national magazines, but this is her first appearance in *Desert*.

W. Thetford LeViness makes his second appearance in *Desert Magazine* this month with his story of Santa Clara Pueblo artist Pablita Velarde, "Pablita of Santa Clara Pueblo." His first story was also about an Indian artist, Joe Herrera of Cochiti Pueblo, which appeared in *Desert* in August, 1949.

LeViness migrated to Santa Fe, New Mexico, in 1939 from the East Coast. A year later he met Pablita Velarde and has kept up an acquaintance with her ever since. He has been librarian at the State Capitol for a number of years and contributes regularly to several magazines and newspapers.

* * *

Nell Murbarger this year received top honors from the California Association of Press Women for her story on Fairview, Nevada, in the October, '55, *Desert Magazine,* for her story of the opal miners of Rainbow Ridge in *Desert's* August, '55, issue, and for her picture of the old bank building in Rhyolite which *True West Magazine* printed last August. The Fairview story won second place nationally, and the Rhyolite picture won a national first prize.

• • •

Hard Rock Shorty of Death Valley



"Naw, they ain't no cemetery in Death Valley," Hard Rock Shorty was explaining to the dudes who had stopped at the Inferno store for cold soda pop.

"Don't need a graveyard here 'cause no one ever dies. Healthiest place on earth," Shorty continued.

"Doctor opened up an office over in Shoshone a few years ago —but he soon left to keep from starvin'.

"Ol' Pete, the burro, got sick one time from eatin' too many of Pisgah Bill's flapjacks, but we changed his diet to mesquite beans an' he got well in a hurry.

"Most invigoratin' place on earth! Let me tell you about ol' Bill Shank who made that rich strike up in Grapevine Canyon back in the 'eighties. He wuz takin' out silver ore faster'n the mint could make it into money. But the pay streak finally ran out an' as Bill wuz gittin' pretty old he decided to go back to his old home in Dakoty an' jest loaf around.

"An that wuz what he did, but the cold winters soon got 'im down, an' they took him to the hospital. Before he passed on he made one request. 'There's plenty o' money in the bank,' he said, 'an' I jest want yu to bury me on the hill over that ol' mine.'

"Well, they put what was left o' Bill in a box an' shipped it back to Death Valley. Some of us met the train over at the junction. We wanted to give ol' Bill a decent burial. A couple o' the boys picked up the box to load it on the wagon, but one of 'em lost his grip an' the box slipped outta his hands.

"When it hit the ground the thing busted open. Then a whiff o' that Death Valley air hit Bill. He straightened up, kicked the lid off the box. He jumped out an' headed over the hill toward that ol' mine, and three days later we found him over there sharpenin' his drill bits gittin' ready to work that mine again."

A NAVAJO LESSON IN SOCIAL ANTHROPOLOGY

The dignified Navajo medicine man was interrupted in his preparations for a ceremony by a spectacled blonde with a big note-book and an interpreter.

He answered searching and personal questions in Navajo; then when she had finished he addressed her in English.

"I have answered your questions: now will you answer some for me?" The woman could hardly refuse under the circumstances, so the Navajo produced a note-book and he wrote down her answers.

"What is your name? . . . How old are you? . . . Where were you born? . . . Are you an American citizen? . . . Are you a Republican or Democrat? . . . How did you vote in the last election? . . . Why did you vote that way? . . . Are you married? . . . Have you any children? . . . How old are they? . . . Why are you not at home taking care of them? . . ."

At this the woman muttered something about catching a train at Gallup and departed hastily.

"What do you call her? 'Social anthropologist'?" the medicine - man grinned. "Whatever she is, she doesn't like those kind of questions any better than we do. Too bad she quit. I was going to ask her if she likes her husband's mother, and if not, why not?" —*The Masterkey,* publication of the Southwest Museum, Highland Park, Los Angeles 42, California.

HOME ON THE DESERT

Choosing a Hedge for Your Garden . . .

Today's desert gardener can select an attractive and utilitarian living fence from a wide and ever growing list of adaptable plants. As an aid to those confronted with this choice, Ruth Reynolds describes the best of these hedges and perhaps somewhere in this catalog is the right one for you.

By RUTH REYNOLDS
Photographs by Helen Gardiner Doyle

SEPTEMBER ARRIVES with only the faintest indications that summer's end is near. The desert skies are a little bluer; the great white cumulus clouds adrift in them not long ago have vanished. September days are fair and warm. And while warm may be an understatement, there can be little doubt about the weather's being fair—and fine, with mornings and evenings beginning to be a little cooler so that the doors of the home on the desert gradually are opened to the porch, the patio, the garden—and the autumn exodus to the outdoors begins.

While the timing of this event is peculiar to our part of the country, the trend toward outdoor living is general, and gardens, patios, service areas and play areas are becoming increasingly more important in home planning everywhere.

Here where we enjoy an extended outdoor season they seem particularly essential. And as our season in the sun is prolonged, so is the growing season of plants that include many evergreen shrubs which can be grown to define, enclose, screen or beautify our outdoor "rooms" the year around.

I take an inventory of the premises and remind Ted that some of the nurseries have end-of-the-season sales which is a real inducement to buy plants now, especially if one is contemplating planting a hedge requiring from a dozen to several dozen plants.

Set out at this time of year, they might grow very little during the fall and winter but they would establish root systems to enable them to get off to a good start in the spring.

My husband says, "Let's not contemplate planting a hedge. Let's just enjoy — until pruning time — such hedgerows as we already have," which sounds like a good idea—except that recently I chanced upon some very interesting hedges used in interesting ways which have little resemblance to our oleander-bamboo jungle out back, the struggling privet hedge our neighbor on the west planted between our back yards or the tamarisk hedge at the other side of the yard.

While I may dream of supplanting certain of these hedges with others, I do not find them altogether wrong. They have their faults but they serve, more or less adequately, their purposes —screening off the alley at the back, which even a very high wall would not do on our sloping lot; providing privacy; discouraging across-lawn traffic by youngsters and dogs as well as wind blown trash—tumbleweeds, papers and such; and adding to the general appearance of the place.

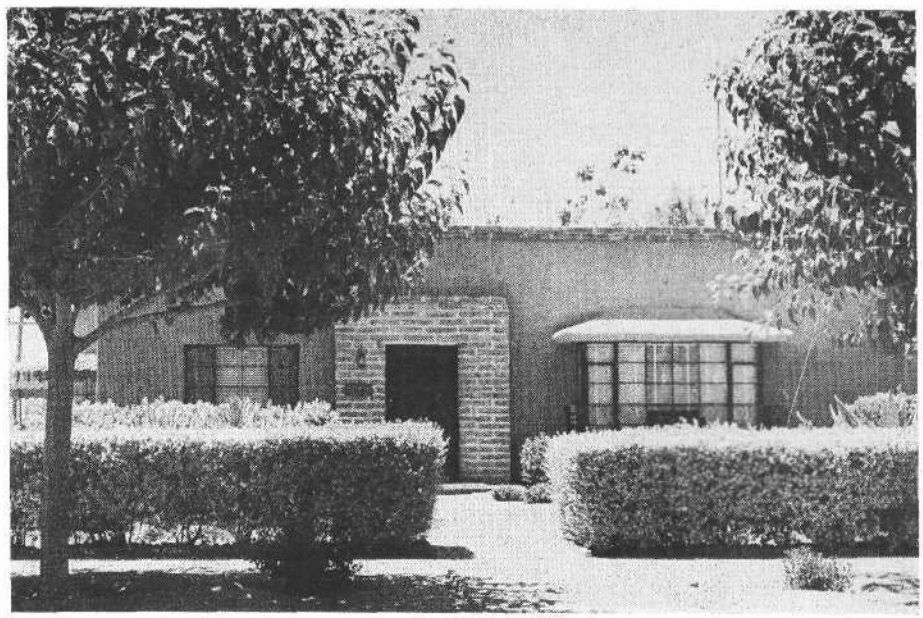
Of the terrible tamarisks the least said the better I suppose. Actually they make a beautiful, compact hedge when well cared for. They do require rigid pruning and shaping, for, of course, their ambition is to become trees—in a hurry. Kept within bounds, they do not prevent grass from growing near them but lawn areas surrounding these foragers must have extra water and fertilizer. Once you have them it is either feed and groom them or get rid of them. With us it a case of least resistance, or half-hearted resistance.

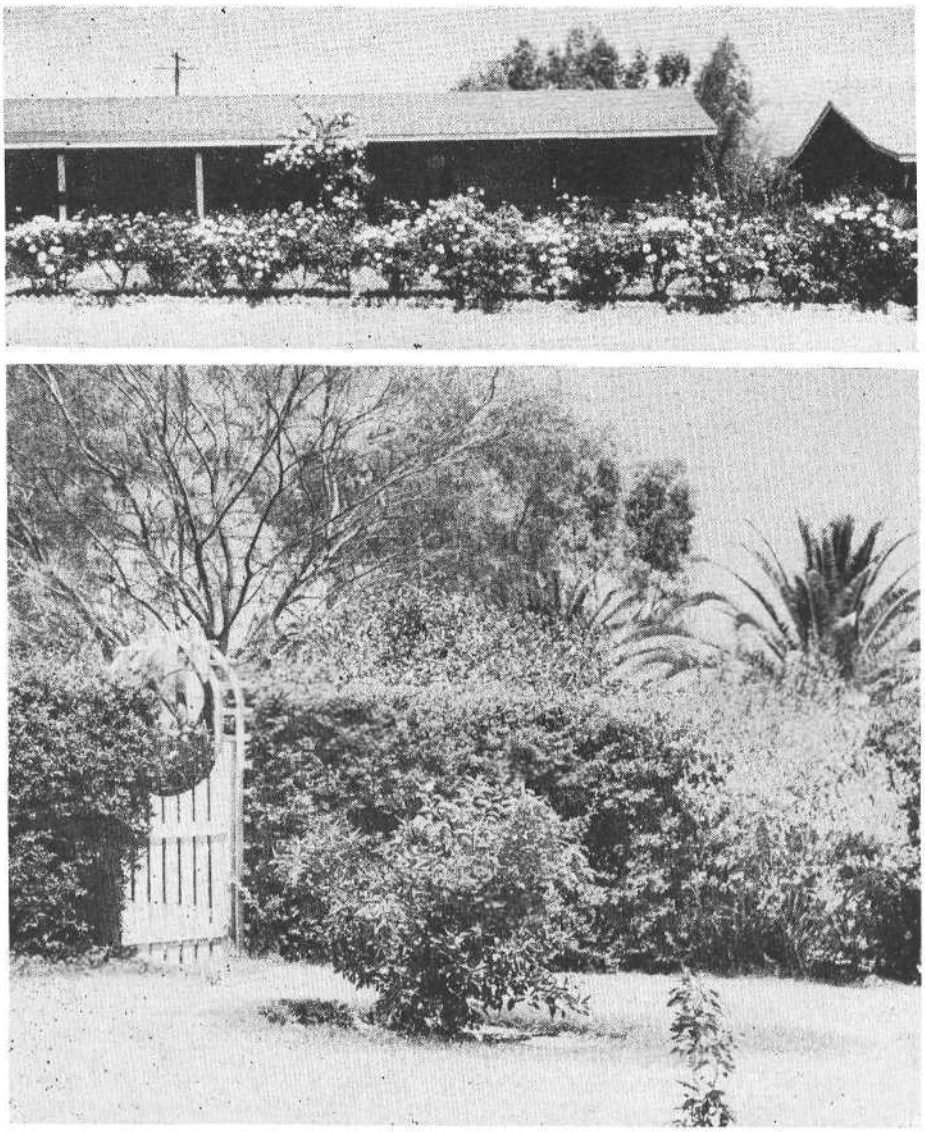
Our attitude toward the bamboo (giant reed) is much the same. As long as it can be kept at a respectful distance in the rear it is not too bad.

If there is any objection to Japanese Privet hedges it is their over-prevalence. There are so many of them that some people find them monotonous but they are a bargain at any time for they are about the least expensive of all hedge plants and they make a fine hedge. They have good green foliage and are easily established and maintained. Usually they grow rapidly. One section of our neighbors' hedge has not done too well, probably because of the proximity of a thirsty mesquite and the solidity of the caliche in which the trench was dug.

The digging of trenches and planting holes is the key to success or failure of most desert gardening along with the preparation of planting soil. If you have soil a foot or two deep, well and good; roots can spread laterally. Otherwise a trench at least 18 inches deep and as wide is necessary. And

The gray foliaged Texas Ranger hedge blends with the desert plantings in the front garden of this Tucson home.





Top—Hybrid Tea rose hedge in front of the home of Mr. and Mrs. Bill Isele. Bottom—A pyracantha hedge.

while privet plants are inexpensive, their trenches exact the same labor as others, and while they tolerate poor and alkaline soil they will thrive better in the peat moss-top soil mixture which many plants require.

This also applies to oleanders, with which I can find no fault. From tree-high to medium low-pruned hedge shrubs they are superb. From mid-April to mid-July it seemed that Tucson needed no other flower. The oleanders alone turned it into a beautiful town with their gorgeous display of blossoms ranging from reds — deep and brilliant—to pinks of myriad delicate shades and from pure white to cream.

Easily styled with the pruning shears, they meet almost any major-hedge requirement. For small gardens or garden interiors they may take up too much room.

Since their tender new growth is injured by freezing, it is best to cut down on their water before cold weather. As all unestablished plants must be watered freely, Ted reminds me that it might be better to bargain hunt among more frost resistant plants. He is probably right but it takes more than that to discourage an inveterate bargain hunter. Maybe the weather will be propitious this season. And frost-damaged growth can always be pruned away in the spring.

However, among my recent interesting hedge discoveries, the two which intrigued me most were a pyracantha hedge and one of Texas Rangers — both hardy to our coldest weather.

The pyracantha hedge encloses the Frank Patanias' garden, one which was included in the Tucson Garden Club tours this spring. Along with other "tourists" I admired the flowers and the unusually large fruitless mulberry tree covering most of an outdoor living area—while calculating the advantages of the well clipped hedge enclosing the area.

It was high enough for seclusion and dense enough and continuous enough —besides being thorned—to form a complete barrier. Kept in symmetrical trim, it would bear berries more sparingly than free-growing shrubs of its kind but still have enough for a nice seasonal display.

This pyracantha hedge exemplified to me the "living fence" so often spoken of but seldom seen because so many so-called fences fail to fence in — or out, anything — being neither dense nor continuous enough or not joined closely enough to the walls (patio or building) where they begin and end.

In contrast to this very utilitarian hedge is the ornamental Texas Ranger hedge. This soft, gray-green shrub is becoming popular for hedges and proving versatile wherever a moderately low hedge is desired. It adapts beautifully to within-garden use in forming demarcation lines, and has front yard qualifications. The hedge I was attracted to encloses the whole front yard —is kept at a height of about 30 inches, encouraging compactness but sacrificing nearly all bloom.

For a free flowering hedge or border, floribunda roses are lovely. In our neighborhood there is a curved concrete walk bordered with Red Pinacchios—the prettiest sight for blocks around — until you come to Myrtle Isele's hedge of hybrid teas in bloom. But pretty is hardly the word for them. They come nearer to being magnificent. They do not bloom as continuously throughout the season as the floribundas do, but with 18 varieties represented there are always some blooms between the big spring and fall displays.

The bargain hunter will have to pass up roses, though—especially the hybrid teas. Even floribundas (catalog listed at three for $3.90) would run into money.

Far down the price scale is a nice low growing border plant, the Santolina—Lavender Cotton—compact with finely cut gray leaves.

Finding these plants in their individual foil containers on the bargain counter, I decided they would make a fine border for our front walk. Spaced a foot apart, along each side, they should cover in four months. Such a border, kept neatly clipped to a height and width of about a foot, should offset the sunken appearance of our sidewalk—caused by filling in the yard until it is nearly three inches above the walk's level—and alleviate the job of grass clipping along the walk.

The 56 small plants at eight cents each were, I thought, a pretty good buy, but I wonder what Ted is going to think when it comes to digging trenches for them.



Pictures of the Month

Sand Patterns . . .

The setting sun of still another desert day causes the wind-blown sands of this dune to cast their ghostly shadows — a fitting resting place for the bleached steer skull. First prize winner this month is Barbara Bixby of Santa Maria, California. Her photo was taken north of Hanksville, Utah, with a Ciro-flex camera, Tri-x film, 1/100 sec. at f. 22 with K-2 filter.



Desert Tortoise . . .

Slow but sure, armor-plated from head to toe—that's the desert tortoise photographed near Victorville, California, by Clinton L. Hoffman of El Monte, California. The second prize picture was made with a 4x5 Graflex camera with 7½-inch Extar lens, 1/100 second at f. 22 on Super XX film.

Pablita of Santa Clara Pueblo . . .

Santa Clara Pueblo in New Mexico is famous for its beautiful pottery—and also because it is the birthplace of one of the most widely acclaimed Indian artists in the Southwest. This is the story of Pablita Velarde, whose work reflects years of personal training and striving — and centuries of artistic tradition and influence.

By W. THETFORD LeVINESS



Santa Clara Artist Pablita Velarde and her prize-winning painting, "Old Father." Albuquerque Journal Photograph.

I FIRST MET Pablita Velarde in August, 1940, under the portal of the Palace of the Governors in Santa Fe. A young girl then, just out of school, she was selling her paintings in the Indian Market held every summer day, then as now, in this picturesque and historic setting.

I was impressed by her radiant personality. When she suggested that the following week I visit her native Pueblo, Santa Clara, to see more of her paintings and attend the annual fiesta and ceremonial dances there, I said at once that I would go. I was a newcomer to the Southwest then, and was delighted to be invited to an Indian village.

It was August 12, the day set aside each year to honor the pueblo's *patrona,* St. Clare. I spent the day watching the Buffalo and Deer dance, and after it was over Pablita asked me and several other guests to her studio for dinner. She served a typical pueblo meal—*chile con carne,* several kinds of vegetables, an orange drink and a fruit dessert. When dinner was over, I again studied her paintings. Some that would be developed later were then unfinished; others were experimental exercises with no plans for development. All, however, showed the influence of centuries-old tradition—how people dance, go to church, enjoy fiestas and live from day to day in Santa Clara Pueblo. It is a theme that still permeates Pablita's best work.

Talented in those early years, Pablita Velarde has since become one of the outstanding personalities in American Indian art. Her paintings have been exhibited from coast to coast, and are included in many private collections in this country and abroad. She has won many honors. I am happy to have known her so early in her career, and to have watched her achieve success and fame.

Pablita's work is fresh and original, but like other Pueblo painting makes use of design and stylization that come directly from prehistoric Basket-Maker and Cliff-Dweller cultures of the Southwest. Identical designs have been found in ancient kiva murals in this general area, and are presumably still used in paintings on kiva walls today. In this sense Pueblo painting is conventional; it is probably the oldest continuous art form in the United States. Pablita has done some work in design alone, inspired by ancient Indian pictographs of the region.

Although proficient in media such as casein and tempora, Pablita recently has revived the use of "earth colors," a technique indigenous to her Pueblo antecedents whose pre-Columbian kiva murals were thus painted. In Albuquerque, where she now lives with her husband and two children, she explained to me in detail how an earth painting is made.

"First," she said with characteristic humor, "I become a rockhound. I get out the family jalopy and take off into the New Mexico hills to look for just the right color of rock."

Sometimes she finds it near a paved highway, but as often as not it entails a considerable hike.

When she finds the color of rock she is looking for, she takes a chunk of it home and grinds it into a fine powder on a *metate* like those used since ancient times for grinding corn in the pueblos. This is Stone Age art, and Pablita does nothing to modernize the processing of materials.

The powder is stored in jars. Pablita showed me a whole kitchen shelf lined with many jars filled with earth colors of several hues and shades. To paint, she mixes the powder with water and glue, and applies it to a masonite board—she never paints on canvas. When it dries, a work of durable plastic quality results. One must look closely to see any difference between Pablita's earth paintings and other art work of conventional materials.

Pablita Velarde's Indian name is Tse-Tsan or "Golden Dawn." She was

born in Santa Clara, one of the Tewa-language Rio Grande pueblos, on September 19, 1918, and is the daughter of Herman and Marianita Chavarria Velarde, both of long-established Santa Clara families.

Pablita's mother died before she had a chance to know her. When she was six her father and stepmother sent her to St. Catherine's Indian school in Santa Fe. "I didn't know a word of English at that time," Pablita recalls, "but I listened to the other children and I soon caught on."

She went through the 6th grade at St. Catherine's, and entered the 7th at the government boarding school for Indians in Santa Fe. This was in September, 1932, and it was then, at the age of 14, that Pablita first began to paint. This was before Federal Indian schools held classes in Indian art, and indeed at a time when government policy discouraged attempts to draw from Indian subject matter.

The industrious Pablita did outstanding work. At 15, she exhibited several water colors at the art gallery of the Museum of New Mexico in Santa Fe. These were highly representational and distinctly feminine—"Girl Winnowing Wheat," "Women Husking Corn" and "Woman with Olla" were the titles of three of them—and they reflected the influence of Pueblo tradition upon the artist. Pablita's first work in oil was exhibited at the Chicago Century of Progress exposition in 1933, and one of her first earth paintings won for her the privilege of participating in a WPA art project in New Mexico that fall.

In the meantime the Indian Service changed its policy and included Indian art in the curriculum at the Santa Fe school. Dorothy Dunn, a graduate of the Chicago Art Institute, was named instructor, and Pablita Velarde became a member of her first class.

But Pablita wanted courses that the Indian school did not offer, so she took her junior year at the high school in Espanola, New Mexico, two miles from Santa Clara. She lived at home and continued her painting, and then returned to Santa Fe for the last half of her senior year. She was graduated from the government school with her Indian class in the spring of 1936.

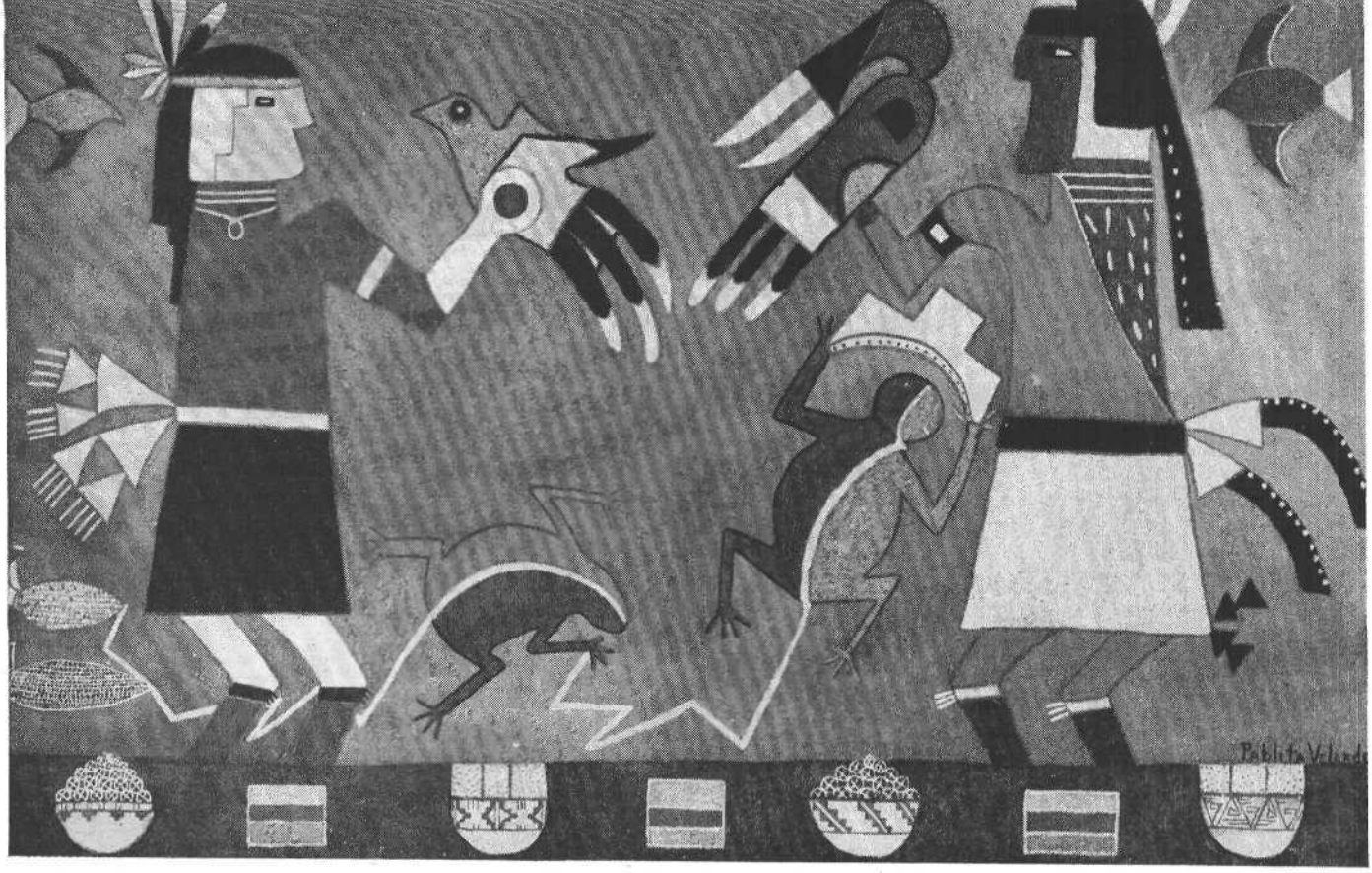
Since then, Pablita has been on her own. For two years she was assistant teacher at the Santa Clara pueblo day school, and conducted painting classes for the children. She also helped them with puppet plays, and now, years later, one of her interesting hobbies is the manufacture of dolls which she dresses in authentic Indian costumes of many tribes and exhibits in museums and occasionally sells.

It was at this time that Pablita built her own studio in Santa Clara—the one in which I had dinner in 1940. With a background of several years as a successful artist and teacher of art, she won first prize for painting for her pueblo for several years at the fiesta show sponsored by the New Mexico Association on Indian Affairs.

In October, 1938, Ernest Thompson Seton, the naturalist, and his wife took an interest in this young Indian painter and took her on a four month lecture tour of the Middle West, East and South. Upon her return in early 1939, she helped the distinguished Santa Fe artist Olive Rush and several other painters do murals for the Maisel Building in Albuquerque. Her contribution was typical — "Santa Clara Women with Pottery." This work depicts a group of Indian women with the black jars that are so famous in Pablita's pueblo. Detail is exacting, even to the ancient designs traced upon the freshly baked ceramics. Pablita's older sister, Legoria Tafoya, had long been one of the most prominent of pueblo potters, and was a specialist in the traditional black glazed earthware

"The Betrothal." This casein painting by Pablita Velarde depicts a Santa Clara betrothal ceremony.





"Primitive Indian Art." Earth colors were used by Pablita Velarde in this painting showing the spirits of the East and West making offerings to the Sun god. Bowls in the lower border contain ears of corn and seeds to be blessed for fertility and the frogs bring lightning, thunder and clouds. Photographs by Harvey Caplin.

— which helps explain why Pablita knew her subject so well.

That summer Pablita was commissioned by the Federal government to paint the murals for the ethnological room in a museum then under construction at the Bandelier National Monument, in Frijoles Canyon south of Santa Clara. She worked at Bandelier for more than two years, climbing down excavated kiva stairways and up ladders to restored cliff-dwellings to get the feel of what life was like in those ancient days. This on-the-spot realism she injected into her mural interpretations and she was working on this project when I met her.

Soon after my first visit to Santa Clara, I returned to spend more time in this interesting town. Pablita acted as guide, and gave me my first intimate glimpses of the pueblo life she has always so faithfully depicted in her paintings. We visited some of her relatives, including the potter Legoria. We attended church services where women in varicolored shawls and men in bright headbands were attending devotions in English, Spanish and liturgical Latin.

When church was over, Pablita remarked casually, "And now I'll show you the Indian church." We drove to the kiva, sacred shrine of Santa Clara folks since prehistoric times.

Later we climbed a tortuous escarpment 10 miles west of the pueblo to the Puye cliff dwellings—"the home of my ancestors," as Pablita literally put it. Here we descended to a kiva floor and sat around a sacred altar. Santa Clara governors administer this 15th Century ruin, and its old shrines have been excavated as tourist attractions. Puye's ancient inhabitants moved down along the Rio Grande about the time of the Spanish conquest and founded K'hapoo or "Singing Water," but the Spaniards soon changed it to Santa Clara.

In 1942, Pablita married Herbert Oliver Hardin, a graduate of the University of California. He is now a lieutenant on the Albuquerque police force, and they have two children—Helen, 12, and Herbert II, 11. Both children paint and each has won prizes for art in the Albuquerque public schools. The Hardin home, which faces the Sandia Mountains in the Albuquerque highlands district, is a model of warmth, hospitality and family love.

Pablita traveled around the country with her husband while he was in the army in World War II. In 1946 she entered the national exhibition of Indian painting at the Philbrook Art Center, Tulsa, Oklahoma. "I sold my first big picture there, and I felt I had really done something," she says. She won honorable mentions in subsequent years, and in 1949 was awarded Philbrook's second purchase prize of $100 for her painting, "Keres Corn Dance." She won a blue ribbon at the 1951 New Mexico state fair for a painting which deals with the Santa Clara potter's craft, and in 1953 she gained what is generally considered the highest pinnacle of success in Indian art—award of the grand purchase prize of $350 from that year's Philbrook show for her painting, "The Turtle Dance," which depicts an annual December rite at Santa Clara. A special exhibition of her paintings, with crafts and artifacts of her tribe, was installed in the Philbrook Art Center's Indian department.

In May of this year, announcement was made that Pablita's "The Green Corn Dance" was first prize winner for Pueblo and Southwest tribes in the 11th annual Philbrook Exhibition.

Recently, Pablita has studied the murals in a kiva at Awatobi ruin in northern Arizona. One of her finest earth paintings, called "Primitive Indian Art," is based on her observations there.

Pablita Velarde—she always signs her pictures thus, and is only rarely called "Mrs. Hardin" — has become nationally and internationally known since the 1953 Philbrook award. She was one of 12 Southwest Indian artists to receive the *Palme Academique* from the French government—an honor bestowed upon her by Paul Coze, French consular agent for Arizona and New Mexico.

LETTERS

Old Timer's Defense . . .

Palmdale, California

Desert:

Frank Reinhart, an old time prospector, gave me the notes below to re-write as a reply to Carl Wendrick (*Desert,* June '56, page 29) who infers that modern prospectors are much cleaner in clothing and skin than their predecessors.

I have decided that Mr. Reinhart's original notes do a much better job than anything I could do.

Although nearly 75 years of age, he can out-walk, out-climb and out-work men half his age. He is very dapper and well groomed and his cabin, his car, everything about him reflects good housekeeping. And, he maintains, he is representative of his contemporaries.

CECILE BOSWORTH

Frank Reinhart's notes—

I come to the defense of the old time prospector of which I am one of them. As I started prospecting and mining in 1897—and have spent my life at it and am still in it, but operating my own mine.

From far up in Alaska to Southern part of Mexico I have prospected the rocks for minerals. I have met and seen many prospectors — and have never yet seen one of them with mud on their bodies, clothes or boots—or even on their burros, for in placer mining they work in water, gravel, sand and rocks, and never in or around mud, or as the gentleman from Chicago infers, with mud on his breast at the end of a day's work.

When you unpack your burro the first thing he will do is go and take a good roll in the sand and clean himself — and so does the prospector — except in a different method. By rubbing sand, which is more cleaning than soap, the skin stays pink and fresh—and thus we keep clean.

FRANK REINHART

• • •

Canned Water Substitute . . .

Santee, California

Desert:

It was surprising that no one came up with the right answer to the "Canned Water" inquiry of some time back. The best and cheapest canned water is at your nearest market, canned tomatoes. About 95 percent water, the balance is pulp, minerals and salt, all beneficial.

Old time desert drivers always have a couple of cans of tomatoes under the seat or in the trunk of the jalopy; won't spoil, can't leak or break, can be carried easily if you have to walk out, and can be opened with any sharp rock or piece of metal.

So next time you start out for that secret seam of agate, have a couple of cans of tomatoes stashed away somewhere. This form of moisture is palatable even when heated by the sun.

Of course, some one should know where you will be, and will start rescue procedure should you not return on schedule. Knowing this, you can remain with your car, keep in the shade and avoid heavy exertion. You can withstand a lot of heat if you will remain quiet; you can walk many less miles than you think you can, in the daytime sun. Take it easy, don't panic, and you will not become another tragic statistic.

WILL T. SCOTT

• • •

Missing: One Railway . . .

Los Angeles, California

Desert:

In your July '56 story, "Boat Trip in the Canyon of Lodore," I would like to know what railroad members of the party used for the rendezvous at Vernal? Tsk!

FRANK E. O'BRIEN

You win! There ain't none.—R.H.

• • •

Camouflaged Retreats . . .

Mira Loma, California

Desert:

Jackrabbit homesteaders should pay more attention to the colors they use to paint their weekend dwellings. Spots of flashing white, bright green and other contrasting shades are not uncommon. These harsh colors interrupt the soft, natural tones of the desert and can spoil a view just as surely as can trash and litter.

I suggest the owners of these homes try to camouflage them as much as possible by painting them the colors of sand, sage or stones. In this way, much of our lost scenery would be returned.

CHUCK WILLIAMS

• • •

68-Year Weather Cycle . . .

Berryville, Arkansas

Desert:

I have discovered a cycle that can be used in predicting the weather. My studies show me that the weather follows a 68-year repeat-cycle. In 1886-87 there was a great drouth followed by severe winters which killed millions of head of cattle. This was repeated in 1954-55.

In March of 1888 and 1956 blizzards covered the eastern states with snow. Applying this 68-year theory, we should have moist years to and including 1960, but I predict a drouth for 1961-62.

CASIMIR G. HOPPE



Recently posted sign in the Marble Mountains.

Army Posts Ruined Land . . .

Twentynine Palms, California

Desert:

While crossing from U. S. 66 to Kelso by the Granite Mountain route, we noticed at the northwest edge of the Marble Mountains a large new signboard which had literally been smashed flat and which lay face down. Curiosity made me investigate and I found that it was the danger sign pictured, posted by U. S. Army Engineers in 1955.

While I understand the emotions which made someone knock down this sign, I set it back up again. Because if it is true that the military has so fouled and ruined this land that the Army must come back a dozen years after its last usage and post danger signs and forbid productive use of the land, persons entering this area should be warned.

Then, just a week ago we found several more of these signs where they had never been before on approach roads to the Orocopia Mountains, along the Box Canyon highway. The strange thing here is that men have been digging and blasting prospect holes in this region, and filing claims apparently without knowing that the military retained subsurface control—and also apparently without blowing themselves up.

It seems to me that at a time when each branch of our "unified" services is asking for more and new public land to ruin forever, the consequences of their use of the land—as demonstrated by these new signs—should be called to the attention of our legislators and congressmen.

HAROLD O. WEIGHT

• • •

What Is Black Gold? . . .

Rexford, Montana

Desert:

Having read your story about Peg-leg Smith's Black Gold (January '56), our 12 year old daughter told her

classmates what she knew about it after the subject of black gold came up in school. She was promptly laughed at and next day she took the magazine to school to show the teacher —and he told her that there was no such thing as black gold, unless, of course, Pegleg had discovered oil.

My father has mined for 26 years, mostly for copper. He believes the teacher is wrong, and that there is a black gold called Tullarium. Reference books seem to have passed over this subject. Can you throw a little light on it?

MRS. SAM MOCKO

Dear Mrs. Mocko—There has been a great deal of controversy among prospectors and mining men regarding Pegleg's "black gold." Dana mentions the black gold of West Australia, known as maldonite — hence there is a scientific authority for the term. However, most of the prospectors out this way hold to the theory that since Pegleg's nuggets were lying on the surface, they merely had acquired a coating of desert varnish, which would explain how the nuggets supposedly had a surface coloring of black. Many types of ore will acquire this varnish if they lie in the sun long enough, and we feel there is good authority for the use of the term.—R.H.

• • •

No Granite at Betatakin . . .

San Francisco, California

Desert:

Being a devoted Indian Country enthusiast and having spent much time with Katherine and Bill Wilson both at Rainbow Lodge and while they were stationed at Betatakin during World War II, I naturally read articles about that country very carefully. When I read Lolita Olaine's article "One-Eyed Snake of Betatakin" (June '56) "Why were there no other snakes on top of this granite dome . . ." the word "granite" fairly shouted at me—granite in that spot? As far as I knew it was all sandstone, so to double check I wrote the Southwest Monuments Association in Globe, Arizona, and this was Naturalist Earl Jackson's reply:

". . . this is very definitely an erroneous statement. All of the formations in that neighborhood are sandstone, and mostly Navajo sandstone of the Kayenta formation. There is no igneous rock of any sort in the immediate vicinity. In fact, if there had been a granite formation there, there could not by the remotest stretch of imagination have been formed an eroded cavern of the shape in which is nested Betatakin ruin."

GLADYS V. BRODERSON

Here and There on the Desert . . .

ARIZONA

May Use Ghost Buildings . . .

JEROME—The state planning and building commission is studying the possible use of vacant buildings in Jerome ghost town. Among the buildings recently inspected was the Phelps Dodge hospital which may be used as a branch of the state hospital in Phoenix, specializing in elderly patients. The Clark Street School and part of Jerome High School buildings were also inspected for possible use by the younger inmates of Fort Grant. Meanwhile, Jerome welcomed its 50,000th visitor to its Mine Museum in mid-July.—*Verde Independent*

• • •

Air Tragedy Memorial . . .

FLAGSTAFF — A drive is underway in Coconino County, spearheaded by Flagstaff's radio station KCLS, to erect a large copper tablet memorial to the 128 persons who lost their lives in the air tragedy over the Colorado in late June. Plans call for the tablet to be inscribed with a brief account of the tragedy and the names of the victims. — *Northern Yavapai Record*

• • •

River Bridge Plans Drawn . . .

BITTER SPRINGS — Plans have been drawn for construction over the Colorado River of the highest steel arch bridge in the world. The 1400-foot span would connect an access road branching off from Highway 89 at Bitter Springs with the proposed Glen Canyon damsite and with a road, north of the installation, leading into Utah. The bridge is to cost in excess of $3,000,000 with Arizona paying $600,000 of the total. It will have a 30-foot roadway and sidewalks on each side so pedestrians can leisurely view the surrounding scenic wonders and the Colorado gorge 1000 feet below. — *Phoenix Gazette*

• • •

Test Tower Constructed . . .

KINGMAN—The Hualapai Mountains have one chance in four of becoming the location of the largest solar observatory in the world. The National Science Foundation site-location team has chosen Fries Peak, a mile north and east of the County Park, for a test tower to study the suitability of the site. Three similar towers will be located on peaks in other parts of the state. Tests will be made during a period of 18 months to two years to determine the ultimate location. Haze, dust, heat, turbulence and other factors in the upper atmosphere will be determined through these extensive tests.—*Mohave Miner*

State Parks Group Formed . . .

PHOENIX — Recently organized was the Arizona Parks Association whose purpose it will be to work toward legislative action that will create a state parks and recreation department in the state. The organization was formed at a meeting of government officials, conservationists, sportsmen, business men and civic leaders. —*Phoenix Gazette*

• • •

New Park Established . . .

GLOBE — A three-acre roadside park has been created in Salt River Canyon near the Salt River Bridge on U. S. Highway 60, midway between Globe and Show Low, according to the Arizona Highway Department. The development is on a projection of flat sandstone about 25 feet above the normal water elevation. Steel pipe hand rail has been placed around the elevated section overlooking the river gorge and two ramadas have been constructed some distance apart with two concrete tables in each.—*Phoenix Gazette*

• • •

Newsprint Mill Planned . . .

FLAGSTAFF—Arizona Paper and Pulp Co., Inc., of Flagstaff will build and operate the only newsprint mill between the state of Washington and east Texas, company officials announced. Lack of water had prevented earlier manufacturing of newsprint in the Flagstaff vicinity, but a new process has been developed which requires much less water. It involves blending chemical pulp with ground wood pulp to be made at the plant.—*Northern Yavapai News*

• • •

Pill May Curb Sunburn . . .

FLORENCE — A little pill made from sun-drenched fruit trees is being studied in the desert here to determine whether it has the power to prevent sunburn. Scientists from the Universities of Arizona and Oregon hope the drug, psoralen, will speed the sometimes painful process of tanning. Psoralen, derived from fig and citrus trees, has been used by the Egyptians for centuries to deepen skin pigmentation. —*Alamogordo Daily News*

• • •

CALIFORNIA

Death Valley Improvements . . .

DEATH VALLEY—The National Park Service announced that it plans to spend $6,394,000 in road construction, repairs and new facilities in the next 10 years at 2,000,000 acre Death Valley National Monument. The plans

call for a new road from Stove Pipe Wells to Cottonwood Canyon, surfacing of eight existing gravel roads and development of additional roads and trails to the monument's outing attractions.—*Territorial Enterprise*

• • •

Trans-Sierra Highway . . .

BISHOP—Interest in the proposed Mammoth Pass Trans-Sierra Highway is mounting, chamber of commerce officials on both sides of the mountain reported. A State Chamber representative said it was his hope that the Bureau of Public Roads Commission will authorize a survey of the route and costs so that either state or federal agencies can proceed with the project in future years. It was estimated that nearly a million persons live within a 75-mile radius of the western terminus of the route and forecasts indicate two million persons will be in that area within 10 years.—*Inyo Register*

• • •

Diversion Dam Underway . . .

BLYTHE — Excavation work on the spillway for the new $4,677,000 diversion dam on the Colorado River is now underway and will continue all summer, according to the Bureau of Reclamation. Actual pouring of the estimated 20,000 yards of cement for the spillways and intake structure will start in October. The by-pass channel which will eventually connect the spillways to the valley canal system has been completed. Water level behind the cement dam will be controlled by automatic radial gates. February, 1958, has been set as the completion date for the new dam.—*Palo Verde Valley Times*

• • •

Salton Sea Fish Studied . . .

INDIO—Dr. D. J. Hendricks, fish biologist for the University of California, believes that there is at least two years' work ahead before the Salton Sea can become a mecca for game fishermen. Already a number of fish have been introduced into the sea, including the spotted fin grouper and the red-throated and yellow fin corbina. These are doing well, but a number of problems must be solved before making further introductions, he said. The salinity of the sea differs from sea water, and the temperature of the water during summer reaches 93 degrees.—*Yuma Sun*

• • •

Desert Lands Fraud . . .

CHINA LAKE — Postmaster General Arthur E. Summerfield warned prospective purchasers of desert acreage to be familiar with the land they are buying and with the people with whom they are doing business. Eight California real estate promoters were convicted on mail fraud charges involving 2800 lots sold in the desert near China Lake. "The fraud scheme of which these men were convicted involved their purchase for a few thousand dollars of desolate land and then, according to the court evidence, dumping millions of pieces of promotional material in the mails, making wild claims," Summerfield explained. "Most of the 3000 persons who invested money, on time payments, never saw the land and few made any worthwhile investigations. With increasing numbers of citizens planning retirement investments in land, it is more important than ever that everyone planning real estate investments for the future investigate carefully and make certain they are dealing with reputable dealers," Summerfield added. The principal promotion of the eight was called "Rocket Town" and was located about five miles from the Naval Ordnance Test Station.—*Inyo Register*

• • •

Joshua Tree Allocation . . .

TWENTYNINE PALMS—The National Park Service has allocated $1,082,000 for improvements to the Joshua Tree National Monument in the next 10 years. Pending completion of more detailed surveys and firm development plans covering the period, the proposed total construction expenditure for the park is estimated at $508,000 for roads and trails and $574,000 for buildings and utilities.

INSTITUTE FOR REGIONAL EXPLORATION

DEDICATED TO FURTHERING KNOWLEDGE OF THE WORLD AND ITS PEOPLE

EXECUTIVE OFFICE:
UNIVERSITY STATION P. O. BOX 2143
ANN ARBOR, MICHIGAN U.S.A.

Dear Mr. Bernard:

This will introduce Dr. E. E. Nishibori, who is the logistics-operations leader for the 1956-57 Japanese Antarctic Expedition. I believe you will find what he has to say quite interesting.

Dr. Nishibori is in the United States to obtain technical advice and help for Japan's project. One of his problems concerns expedition packaged foods for use at the South Pole. I suggested that he speak to you concerning Kamp-Pack foods. His requirements may be for camp foods of a different type, since the Japanese diet is different from the American, but there are certain basic food requirements which are the same for any expedition. And your Kamp-Pack products are the best I've ever encountered.

Please listen to his problems and offer whatever advice you can. Anything that you can do for him will go a long way toward furthering the over-all co-operative effort on the Antarctic Continent.

Sincerely and with best wishes,

Theodore P. Bank II

Theodore P. Bank II

NON-PERISHABLE LIGHTWEIGHT DELICIOUS FOOD

BERNARD KAMP-PACK

Ideal for Outdoor Living and Traveling in the Southwest

Here is delicious concentrated food in foil that never spoils. Proved in use on year-long safaris in hottest Africa and on expeditions to chill Alaska. Won't freeze — won't spoil. In sturdy Kraft envelopes, lined with waterproof flavor-tight foil, compact, lightweight. Easy to fix in seconds. You'll find delicious food for breakfast, lunch and dinner. Sweet Cream Buttermilk Pancakes, Rich Savory Soups, Meat Stews and Chili, Hot Biscuits, Stir 'N' Serv Instant Puddings are just a few of over 100 tasty varieties. Add only water, stir, (heat) and serve.

Write for Complete Catalog and Order Form

BERNARD FOOD INDUSTRIES 1208 E. SAN ANTONIO, SAN JOSE 27, CALIFORNIA

THE DESERT TRADING POST

Classified Advertising in This Section Costs 12c a Word, $2.00 Minimum Per Issue

REAL ESTATE

BEAUTIFUL, PARTLY level, 20 acres including famous Coral Reef Mt., many superb building spots. Full price $6000. The All American Canal wanders lazily through an 80-acre farm surrounded with lovely desert mountains just 7 miles from Indio. It's for sale, $26,500. Ronald L. Johnson, Thermal, California.

INDIAN GOODS

OVER 600 fine old baskets. Many rare Navajo rugs, both old and new, Bayeta-Germantown. Artifacts, gems, and fine Indian jewelry. Open daily 10 to 6, closed Mondays. Buffalo Trading Post, Highway 18, Apple Valley, California.

FIVE FINE Prehistoric Indian arrowheads $2.00. Perfect stone tomahawk $2.20. Effigy pipe $5.00. Perfect flint thunderbird $3.00. Flint fish hook $3.00. List free. Five offers for only $12.00. Arrowhead, Box 1249, Hot Springs, Arkansas.

5 FINE ANCIENT Indian arrowheads, $2. Flint eagle ceremonial, $2. Perfect Folsome, $5. Spearhead, $1. List Free. Lear's, Glenwood, Arkansas.

BOOKS — MAGAZINES

OUT-OF-PRINT books at lowest prices! You name it—we find it! Western Americana, desert and Indian books a specialty. Send us your wants. No obligation. International Bookfinders, Box 3003-D Beverly Hills, California.

HAVE REAL fun with desert gems, minerals and rocks. The rockhound's how-to-do-it magazine tells how. One year (12 issues) only $3.00. Sample 25c. Gems and Minerals, Dept J-10, Palmdale, Calif.

DESERT MAGAZINE'S first 12 volumes, bound, $50. Stephen James, 215 No. Ave. 53, Los Angeles 42, California.

MUMMIES, Jewels, Bars of Gold, Buckets of Placer Gold, Historical Data. I've handled some of it. Amazing! Thrilling! Read my book, "Cortez Missed the Bus." Edition going fast. Send quickly, only 5 dimes for your copy to: P. L. Howland, 1613 West 84th Place, Los Angeles 47, California.

MISCELLANEOUS

TEN IRIS Bulbs mailed direct to you from the Holy Land. $3.00 postpaid. Bowman & Son, Box 41231, Los Angeles 41, Calif.

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

PAIR KYPELON or Kiathion Bowls, replicas of those discovered during Archaic Period 900 B.C. Mailed direct to you from Athens, Greece. $3.00 postpaid. Bowman & Son, Box 41231, Los Angeles 41, California.

ANTIQUE BRASS desk phones $5.00; two $9.50. Oak wall phones $9.95; two $18.50. Free list. Tontz's, Elsinore 31, California.

DESERT TEA. One pound one dollar postpaid. Greasewood Greenhouses, Lenwood, Barstow, California.

DELFT BLUE China salt & pepper shakers with sterling silver windmills. Mailed direct to you from Holland. $3.00 postpaid. Bowman & Son, Box 41231, Los Angeles 41, Calif. Any three items advertised $8.75 postpaid. Duty free.

LADY GODIVA "The World's Finest Beautifier." For women who wish to become beautiful, for women who wish to remain beautiful. An outstanding desert cream. For information, write or call Lola Barnes, 963 N. Oakland, Pasadena 6, Calif., or phone SYcamore 4-2378.

SECTIONIZED COUNTY maps — San Bernardino $1; Riverside $1; Imperial 50c; San Diego 50c; Inyo 75c; other California counties $1.25 each. Nevada counties $1 each. Topographic maps of all mapped areas. Westwide Maps Co., 114 W. Third St., Los Angeles, California.

FREE "Do-It-Yourself" Leathercraft Catalog. Tandy Leather Company. P. O. Box 791-W17, Fort Worth, Texas.

JOIN A REAL Prospectors and Rockhounds organization. Amateurs welcome. Many benefits for members. Membership $2.50 year, includes publication "Panning Gold." United Prospectors, 701½ East Edgeware, Los Angeles, California.

JEEP STATION WAGON 1951—4-wheel drive, radio, heater, overload springs, directional lights, Warn automatic front hubs, emergency Bendix fuel pump, two-tone gray. All seats. Less 25,000 miles. Car stored and in practically new condition—$1300. W. D. Gentle, 130 Main Street, Placentia, California.

WANTED—Leasers to mine turquoise. Experience not necessary. Write to Box RB, Desert Magazine, Palm Desert, California.

SELLING COLLECTION antique firearms. Bargains. List 10 cents. Tontz's, Elsinore 31, California.

PAN GOLD: $1 for 75 panning areas in 25 California counties. Geological formations, elevations, pertinent notes. Panning pans $2.75, $2.25. Leather nugget and dust poke $1. Fred Mark, Box 801, Ojai, California.

BUILD YOUR OWN real swimming pool! Fun for the entire family! Easy plan and instructions, only $1.00. Delta Pools, Box 604, Stockton, California.

SILVERY DESERT Holly plants: One dollar each postpaid. Greasewood Greenhouses, Lenwood, Barstow, California.

HARDY CACTUS, some rare, free price list, Nancy Duck, 507-30 Road, Grand Junction, Colorado.

NEVADA

Navy Plans Stalled . . .

WASHINGTON, D. C. — The Navy's plans for use of the Black Rock Gunnery Range in northern Nevada have been delayed at least until January, Senator George Malone said. Following approval of the Sahwave-Black Rock Ranges by the Senate Armed Services committee, Malone and Senator Alan Bible forced an amendment on the senate floor which removed Black Rock from the bill until the Navy proves it cannot jointly use the Tonopah range with the Air Force and Atomic Energy Commission.—*Fallon Standard*

• • •

Bighorn Sheep Counted . . .

CLARK COUNTY—A team of 12 men drawn from the Nevada Fish and Game Commission, U. S. Fish and Wildlife Service, Bureau of Land Management and the National Park Service conducted a survey of Bighorn Sheep in the rugged Desert Game Refuge of Southern Nevada. The men conducted 72-hour vigils at nine separate waterholes and they counted 335 sheep. The high count has encouraged officials who believe the sheep population is gradually building up.—*Nevada State Journal*

• • •

V&T May Run Again . . .

VIRGINIA CITY — A group of local businessmen have organized to restore that section of the Virginia and Truckee Railroad running between the old terminal yards and the depot at Gold Hill, a distance of one and seven-tenths mile. The partial restoration was considered as a tourist attraction to coincide with the state celebration of its Silver Centennial in 1959. — *Territorial Enterprise*

• • •

Siberian Elms Termed Nuisance . . .

RENO—The City of Reno's Recreation Department has placed the Siberian elm tree on its "do not plant" list. The elm, according to the shade tree committee, produces literally millions of winged seeds that find their way into stores, public buildings and homes. These seeds form dense mats on lawns and come up like weeds during the summer months. — *Nevada State Journal*

• • •

Litterbug Drive Gains . . .

RENO — Encouraging results have been reported from a city-wide playground litterbug poster and automobile trash bag contest in July. Children vied for prizes for best posters, slogans and decorated trash bags. Approximately 10,000 bags were made available to tourists at service stations for the purpose of stopping the litterbug. —*Nevada State Journal*

Giant Ichthyosaur Found . . .

BERLIN — Partial remains of a more massive pre-historic ichthyosaur (*Desert,* Dec. '55) than any previously discovered in the area were found near Berlin, Dr. Charles L. Camp of the University of California announced. Petrified bone segments from more than 20 of two species of the huge marine creatures were discovered at the new site. The latest find indicates the largest animal was about 60 feet in length.—*Fallon Standard*

• • •

Silver Strike Monument . . .

VIRGINIA CITY — A plot of ground 20 x 20 feet has been picked in Virginia City for the location of a monument proclaiming the discovery site of the first appreciable amount of silver in the United States. Nevada artists have been asked to submit designs appropriate to the memorial.—*Nevada State Journal*

• • •

Geological Survey Slated . . .

WASHINGTON, D. C. — Topographic mapping of 21,000 square miles of Nevada land is called for in the $804,000 earmarked for U. S. geological survey work in the Interior Department appropriation bill passed by Congress. The bill includes funds for surveys and mapping in 17 Nevada areas.—*Nevada State Journal*

• • •

Wild Horse Laws Defined . . .

CARSON CITY—It is unlawful for any person to kill, wound or maim any wild unbranded horse, mule, mare, colt or burro of the age of 12 months or over found running at large on any of the public land or ranges within the State of Nevada, without first obtaining a permit from the board of county commissioners and posting a $2000 bond, according to state law. It is also unlawful for any person to kill or injure one of these animals under 12 months of age, and no permit granted by the commissioners gives the right to do so. It is also unlawful to hunt these animals by airborne or any motor driven vehicle, or to pollute watering holes in order to trap, kill or maim the animals.—*Pioche Record*

• • •

NEW MEXICO

Indian Recreation Program . . .

LAGUNA — The Laguna Indian Pueblo is sponsoring a program of recreation for children—the first of its kind in the state. Included is a teenage canteen, games, weekly movie parties, a sports program, weekly bus trips to the University of New Mexico swimming pool, cooking classes and craft classes. The Indian Service is enthusiastic over the project and is urging other pueblos which have similar youth problems to follow the Laguna example.—*Alamogordo Daily News*

Seeks Extended Lease Period . . .

WASHINGTON, D.C.—New Mexico Senator Clinton P. Anderson is supporting a bill to permit Navajo Indians to lease reservation lands for 99-year periods instead of the present 25-year maximum. Anderson said 25 years is too short a period to promote industrial development. The Utah Construction Co.'s plans to build a thermal electric plant on tribal lands is being delayed by the short-term lease requirements, he said. The firm is not so much worried about its own lease tenure as it is that companies which could avail themselves of the cheap power that can be made available will not locate on Navajo land.—*Phoenix Gazette*

• • •

Drouth "Normal" for State . . .

LAS CRUCES — New Mexico is becoming drier and drier, P. W. Cockerill, agricultural economist, points out in his new Experiment Station bulletin entitled "Recent Trends in New Mexico Agriculture." In fact, drouth periods of varying lengths are so common in New Mexico that most farmers and ranchers now consider them as normal. Precipitation in nine of the past 10 years has been below the long-time average, he said.—*Alamogordo Daily News*

• • •

Land Grab Criticized . . .

ALAMOGORDO — Otero County Wildlife Association members have issued a strong protest over the latest acquisition of southern New Mexico land by the military. The wildlife group charged Fort Bliss officials with attempting to make a private hunting preserve out of land acquired in New Mexico and of conducting a feeding and game management program, "scarcely an activity vital to national defense." They urged that state game officials be permitted to enter the area to manage wildlife. — *Alamogordo Daily News*

• • •

Garrett Grave Neglected . . .

LAS CRUCES—John L. Jarratt of Victoria, Texas, believes the grown-over and neglected final resting place of Sheriff Pat Garrett is shameful. Jarratt is a former neighbor and family friend of Garrett, the frontier marshal who was killed in 1908. Wrote Jarratt to the *Las Cruces Citizen*: "While this shameful condition exists, one of those snaggled-tooth punks whom he had to kill is glorified to high heaven as a hero. I refer to Billy the Kid who has his name on everything that will hold a printed sign and whose fenced grave is marked by a granite tombstone. Nearby is a Billy the Kid Museum. At Old Mesilla, there is another museum in his honor, and all he did there was kill an unarmed barber."

Pecos Claims Honors . . .

PECOS—A quarter-century before Pedro de Avilez Mendendez founded the tiny settlement of St. Augustine, Florida, a small, rocky cavern in Holy Ghost Canyon near Pecos may well have been the first European abode on the North American continent. Historians believe that this cave was used by Fray Luis de Escalona, a lay brother of the Lesser Order of Franciscans, who accompanied Coronado to this arid countryside in the spring of 1540. —*Alamogordo Daily News*

• • •

Guard to Patrol Roads . . .

SANTA FE—Governor John Simms has ordered the National Guard to patrol New Mexico's highways at peak use periods in an effort to curb the state's mounting highway death toll.—*Alamogordo Daily News*

• • •

Game Dept. Sells Trophies . . .

SANTA FE — The New Mexico Game and Fish Department carries on a flourishing business in the items it gets from trapping and killing predatory animals. Indians, the department reports, are avid buyers of eagle feathers which they use for ceremonial head-dresses. Lion and bear skins are bought for rugs and beaver pelts are being turned into fashionable coats.—*Alamogordo Daily News*

• • •

UTAH

Park Improvements Detailed . . .

VERNAL — The National Park Service has budgeted $2,433,000 for roads and trails and $1,746,000 for buildings and utilities at Dinosaur National Monument over the next 10 years. This includes: a road to and

SAN JUAN and COLORADO RIVER EXPEDITIONS

Enjoy exploration, safe adventure and scenic beauty in the gorgeous canyons of Utah and Arizona. Staunch boats, experienced rivermen. For 1956 summer schedule or charter trips anytime write to—

J. FRANK WRIGHT

MEXICAN HAT EXPEDITIONS

Blanding, Utah



1000 TRAVEL SCENES

COLOR SLIDES

FOR YOUR

VACATION RECORD

SPECIAL OFFER

To introduce readers of DESERT to our 2"x2" **COLOR SLIDES** for home projection, we are offering a **FREE** 20 page catalog and a **FREE** sample color slide. Travel, Science, Nature, National Parks and the southwest. Write today to —

KELLY D. CHODA

732 URSULA ST. AURORA 8, COLO.

ample parking facilities at the quarry; visitor-use center; museum; access roads; road and trail improvements; interpretive signs, markers and exhibits; additional campgrounds and improvements to exisiting campgrounds; and launching ramps and boating facilities. —*Vernal Express*

• • •

Glen Canyon Engineer Named . . .

WASHINGTON, D. C. — L. F. Wylie, assistant engineer for the construction of Hoover Dam, has been appointed construction engineer for the $421,000,000 Glen Canyon Dam. He will have primary on-the-job responsibility for the building of the dam. His last project was the dam and hydroelectric plant for the Eklutna Project in Alaska.—*Southern Utah News*

• • •

1432 Climb Timpanogos . . .

PROVO—An unofficial count has placed at 1432 the number of hikers who reached the 12,000-foot top of Mount Timpanogos during the annual Timp Hike, jointly sponsored by Brigham Young University and the Provo Chamber of Commerce. The mass assault, however, did not equal the number of climbers to reach the summit last year. Oldest climber was Milton A. Ross, 77, and youngest was La Belle Moss, 4, both of Salt Lake City. — *Salt Lake Tribune*

• • •

Work Begins on Dam . . .

VERNAL—Engineering crews have started drilling work on the Flaming Gorge dam on the Green River. A temporary bridge will be built across the gorge as part of the 17-mile access road between the paving of Wyoming 530 near Linwood, Utah, and the dam site.—*Vernal Express*

You'll want to keep those

MAPS

which appear each month in Desert Magazine—maps which will be your guide on many delightful excursions into the great desert playground.

Attractive loose-leaf binders embossed in gold not only will preserve the maps, but will be a beautiful addition to your home book-shelf. Each binder holds 12 copies. Easy to insert, they open flat.

Mailed postpaid for $2.00

THE Desert MAGAZINE

PALM DESERT, CALIFORNIA

Zion Merger Favored . . .

WASHINGTON, D. C.—The Department of Interior has strongly recommended the merger of Zion National Monument with Zion National Park. Fred G. Aandahl, assistant secretary of interior said: "Because of their related geological and scenic characteristics and the public benefits that may be expected from the administration of the two areas as a single unit, we consider this proposed legislation to be in the public interest." Zion Monument, Aandahl pointed out, contains "a grandeur of colorful canyon and mesa scenery that ranks among the superlative scenic areas in the world." He said it supplements the park scene and will bring to the visitor "an understanding and realization of the mobility of the earth's crust." — *Salt Lake Tribune*

• • •

Wild Animals Protected . . .

SALT LAKE CITY — The Utah State Department of Fish and Game warned recently that it is unlawful to chase, capture or hold in captivity any of the state's game birds or game animals. The department urged anyone finding young fawns or any other young or game animals or birds, to abide by the law and leave them as they are found. Permits are sometimes given for taking and holding these creatures for the sole purpose of scientific study. —*Iron County Record*

• • •

Dam to Benefit Town . . .

KANAB — The potential economic value that will be realized by the community of Kanab from the construction of Glen Canyon Dam is the chief topic of conversation in this southwestern Utah town. Some observers say this arid section is in for a big change, while others are assuming a wait-and-see attitude. Heavy road-building equipment has been rolling through Kanab each day on its way toward the Colorado. Most of it will be employed in building a road from the existing roads near Kanab to the damsite.—*Salt Lake Tribune*

• • •

Cloud-Seeding Paying Off . . .

SALT LAKE CITY — A noted cloud-seeder, Dr. Vincent J. Schaefer of New York, told Utah residents that proper cloud-seeding in areas of sufficient rain-making potential will show a substantial increase in precipitation. Dr. Schaefer said improvements in methods of introducing silver iodide crystals and dry ice into clouds have increased results. Generating equipment is now being placed closer to source clouds — either on mountain slopes or in airplanes. — *Salt Lake Tribune*

Looking for a PUBLISHER?

Do you have a book-length manuscript you would like to have published? Learn about our unusual plan whereby your book can be published, promoted and distributed on a professional basis. We consider all types of work—fiction, biography, poetry, scholarly and religious books, etc. New authors welcome. For more information, write for valuable booklet D. It's free.

VANTAGE PRESS, INC.
6253 Hollywood Blvd., Hollywood 28, Calif.
Main Office: New York 1, N. Y.

• • •

State Seeks Road Funds . . .

KANAB — The Utah State Road Commission has asked the U. S. Bureau of Public Works for $750,000—a sum to be matched by the state—to surface the road from Kanab to the Glen Canyon damsite area. About 90 percent of the highway will traverse federal lands.—*Salt Lake Tribune*

New and Improved Products for Desert Living

NEW INSECT REPELLENT IN CLEANSING TISSUE FORM

Whitmire Research Laboratories of St. Louis 10, Missouri, is now manufacturing and marketing a new insect repellent that is as convenient to apply as wiping your face, arms and legs with a cleansing tissue. "Repellen-Tissues" are made of purified paper impregnated with five basic repellents — each effective against bites from mosquitoes, gnats, chiggers and biting fleas. The tissues are safe for children to use and are not oily or greasy. Ten reusable sheets are packed in a flexible plastic pouch that fits the pocket. Each package sells for 25 cents.

• • •

SIMPLE TO ADJUST LAWN UMBRELLA NOW ON MARKET

An easily adjustable lawn umbrella, trade-named the Snowco Sun King, has been placed on the market by the Snow Company of Omaha, Nebraska. The manufacturer claims that its new product is fully and easily adjustable as the result of a unique ball and socket joint at the top of the umbrella stem. This joint permits the umbrella to be tilted forward, backward, to both sides and to any angle up to 45 degrees. The Sun King also features a new type overhead suspension which allows the umbrella stem to be offset to one side where it will not interfere with chairs, playpens, tables or blankets placed entirely underneath the umbrella.

MINES and MINING

Lincoln County, Nevada . . .

A contract that is expected to result in the development of a huge mercury deposit 18 miles southeast of the Tempiute-Lincoln tungsten properties in Lincoln County has been consummated between the Western Mercury and Uranium Corporation of Las Vegas and Mullen-Buckley Uranium Corporation, Los Angeles. The coast concern has leased 23 claims from Western Mercury and has commenced exploration and drilling work with the expectation that $100,000 will be spent on this phase of the work alone. An ore body 500 feet wide and 300 feet long, which has already been drilled to a depth of 100 feet, has been blocked out on the property with assays running up to $300 a ton.—*Pioche Record*

• • •

Washington, D. C. . . .

The Office of Defense Mobilization has extended the federal government's manganese ore buying program to June 1, 1961. The government also increased its buying limit from 19,000,000 long ton units to 28,000,000. Under previous government orders, the federal ore buying program would have ended June 1, 1958.—*Wickenburg Sun*

• • •

Spruce Mountain, Nevada . . .

The development of Old Bull's Head Mine looks "very promising," Charles S. Woodward, president of Index Daley Mines Corporation, said. Index Daley is now at the 300 foot level in a proposed 2000 foot development of Old Bull's Head. The mine was a heavy producer of lead-gold, copper and silver between 1870 and 1934. Index Daley recovered $1,835,000 from it in 1919-29.—*Pioche Record*

• • •

Wendover, Utah . . .

Potash producer Bonneville Ltd. is constructing a $175,000 fusion plant near its solar evaporation facility to granulate potash to specifications of customers. At present the plant produces the agricultural fertilizer in sizes separable through 230 mesh or 30 squares to the inch. The fusion plant is likened to a kiln which melts down the potash and reforms it to desired sizes.—*Salt Lake Tribune*

• • •

Scholle, New Mexico . . .

Permanente Cement Co. plans establishment of one of the West's largest cement plants at Scholle, New Mexico. Estimated cost of the 1,400,000-barrel plant is $10,000,000. Exploratory drilling indicates a 100-year supply of limestone in the area. At present, New Mexico imports about 2,000,000 barrels of cement yearly from Texas and Colorado.—*Salt Lake Tribune*

• • •

Carlsbad, New Mexico . . .

Two top United States Potash executives announced their retirements as the officially approved merger of U. S. Potash Company with Pacific Borax Co. was reported. Horace M. Albright, president of U. S. Potash Co., and Thomas M. Cramer, vice president, both will withdraw. The former, president of the company since 1933, will resign from active management in favor of James M. Gerstley, president of Pacific Borax Co. The newly merged enterprise will be known as United States Borax and Chemicals Co.—*Eddy County News*

Paradox Basin, Utah . . .

Shell Oil Co. announced discovery of oil at its Bluff Unit No. 3 wildcat in the San Juan County portion of Paradox Basin. The company said a drill stem test between 5454-5529 feet at the top of the Paradox section and above the salt formation recovered 2000 feet of free oil during a two-and-a-half hour test. A crude line may be built to serve the area, the company added.—*Salt Lake Tribune*

• • •

Fallon, Nevada . . .

Nevada's largest producer of iron ore is continuing to ship for export to Japan at the rate of 15,000 to 20,000 tons a month. The mine, known as Ford ground, is being worked as an open pit operation by the Dodge Construction Company of Fallon under lease from a group of Lovelock residents. The Dodge Company estimates that since this work was started in 1951, more than a million long tons of ore have been taken from the deposit showing 60 percent iron. This is rich enough to stand mining and transportation costs to four smelters in Japan.—*Nevada State Journal*

• • •

Silver Peak, Nevada . . .

Reopening of the historic Nivloc Silver Mine at Silver Peak and of the nearby 200-ton Bruhi mill was virtually assured with the announcement that the U. S. Mining and Milling Corporation of New York City has acquired control of both properties. Completion of the transaction was announced by Jim Clark, Ed Murphy and Leonard Traynor, former owners of the sporadic silver producer which dates back to 1906. According to Clark, 640,000 tons of mill grade silver ore, running from $15 to $17 a ton, has been blocked out and is ready for removal as soon as the mine is put back into operation.—*Goldfield News*

• • •

Corinne, Utah . . .

Water well drilling operations were started on the 12,000 acre Thiokol Chemical Corporation site west of Corinne, marking the start of construction on a proposed $2,000,000 solid rocket fuel manufacturing plant in Box Elder County. The plant is expected to be in operation by January 1, 1957, on a limited basis and will reach peak production six months later. — *Box Elder News*

• • •

Denver, Colorado . . .

In an effort to recover oil from shale, Dr. Thomas Nevens and his project associates, Werner Schnackenburg and John Hobaugh are running raw Colorado shale through their experimental ballmill retort at Denver University. According to Nevens, 100 pounds of shale yields five quarts of oil. The test operation of the Swedish Aspeco process for roasting oil out of shale is groundwork for a proposed 24-hour-a-day pilot plant.—*Mining Record*



Explore for Treasure!
Find wealth lost or buried for years! Search for gold and silver coins, bullion, and other valuables with **M-Scope** Treasure-Metal locators. Used worldwide. **Guaranteed.** Time Payment.
Fisher Research Lab., Inc.
Dept. D-1 Palo Alto, Cal.

Pioche, Nevada . . .

Grab samples of ore taken from the Bristol Silver Mine assayed at 116.95 ounces of silver per ton. At the current rate of 90 cents per ounce of silver, the ore is valued at a little more than $100 per ton. It also contained .14 percent gold, 4.1 percent copper and .9 percent lead.—*Pioche Record*

• • •

Vernal, Utah . . .

San Francisco Chemical Company is drilling two tunnels to tap ore at the phosphate beds 14 miles northeast of Vernal in the Brush Creek area. An initial 5000 tons will be extracted to determine which phosphate products are most feasible commercially from the ore and also the kind of plant machinery that will be most suitable for this operation, the company announced. San Francisco Company has taken an option on 15,000 acres of phosphate holdings of the Humphrey Phosphate Co. A new mile-long road has been constructed from the workings to the Vernal-Manila highway.—*Vernal Express*

• • •

Tonopah, Nevada . . .

A lease and option was signed with the Anaconda Co. for the Hall molybdenum mine in the San Antone Mountains, 24 miles north of Tonopah. The mine is owned by Lee Hand of Tonopah and Clarence Hall of Bishop, California. James R. Wilson, Anaconda geologist, said his company expects to conduct development work on the property. — *Nevada State Journal*

THE PROSPECTOR'S CATALOG
We are pleased to announce the advent of a new **Minerals Unlimited Catalog,** specifically designed for the amateur or professional prospector. If you are interested in **Geiger Counters, Mineralights, Blowpipe Sets, Gold Pan** or any of the other equipment necessary to a field or prospecting trip, send 5c in stamps or coin for your copy.
MINERALS UNLIMITED, Dept. D
1724 University Ave., Berkeley, California

TREASURE HUNTERS
New type metals detector. Distinguishes metals from black magnetic sands. Ideal for locating gold nuggets, placer deposits. Detects metals under salt water. Locates coins, jewelry on beaches. Free from false detections. Each unit supplied with two different search coils. Ask for free literature.



GARDINER ELECTRONICS CO., DEPT. DM
2545 E. INDIAN SCHOOL ROAD
PHOENIX, ARIZ.

MINERAL ASSAY
- **CHEMICALS** for "Dukes," "Lakewood" kits and others
- **LAB EQUIPMENT** — Glassware —assay equipment
- **FIELD ASSAY KIT**—'Lakewood' in wood box with acids $36.00 by express collect

Send Your Requirements
KNAPP'S TRAINS & SCIENCE
2525 Honolulu Ave., Montrose, California

URANIUM NEWS

U.S. Uranium Production Set at Three Million Tons Annually . . .

The United States is producing about 3,000,000 tons of uranium ore per year, has 30,000,000 tons of known uranium reserves and another 30,000,000 tons of potential reserves.

These previously top secret figures were released by Jesse C. Johnson, director of the AEC division of raw materials. He predicted that the Colorado Plateau uranium ores may be unable to supply the demands of the atomic power plants by the end of the century.

The figures were declassified by the government, Johnson said, in order to assist private atomic industry leaders in intelligently planning for the future of their business.

Only 70,000 tons of uranium were mined in the United States in 1948 when the AEC came into being. Annual production is now expected to reach 5,000,000 to 6,000,000 tons. Nine uranium mills now are in operation, and three more will be ready this year. By 1958, the number may be doubled, he added.

Military requirements will continue to be the "predominant factor" in uranium production, Johnson said, but the AEC procurement program will also provide fissionable materials for "prototype industrial power reactors." It is his opinion that the government will continue to be the predominate buyer of uranium for at least another 10 years.

Johnson listed three developments that should work to the advantage of ore-producers in the coming years: mills may be competing for ore by 1962; milling costs should be reduced as a result of metallurgical improvements and operating experience; and the three-year extension by the commission to March 31, 1960, of the bonus for initial production.

AEC Has No Plans for Nevada A-Tests This Year

The Las Vegas, Nevada, office of the AEC presently has no plans to use its Nevada test site for full-scale nuclear tests during the remainder of 1956. In keeping with its previous practice, any full-scale nuclear tests series scheduled for Nevada will be announced publicly by the commission well in advance of the operating period, it was stated.—*Washington County News*

Uranium Health Hazards Studied by Health Service

The U. S. Public Health Service is conducting long-term research into the possible health hazards involved in uranium mining, but the relative newness of the industry plus the migratory habits of miners are handicapping the work.

A medical investigation of as many miners as possible was conducted in 1954 by mobile units of the Health Service. This was followed by a census of the miners last year. Another census is planned for this year and it is hoped that the medical teams can again visit the uranium area in 1957.

Materials encountered in the mines and mills which are felt to be of health significance are free silica, radon, radium, uranium and vanadium. The possibility of arsenic and selenium was considered, but all of the samples analyzed contained only traces of these elements.

There seems to be no possibility that concentrations will ever be encountered which could have immediate effects on the miners. What is of concern is the effect of exposures of 15 to 30 years. The dust particles carrying the radioactive particles can be expected to behave in a manner similar to normal dust, the larger particles with the greater momentum tend to travel in straight lines and are thus trapped on the sticky zig-zag walls of the bronchi. The finer portions reach the deeper portions of the lung.—*Grants Beacon*

• • •

No bids were received by the Acoma Indian Tribe of New Mexico for uranium exploration rights to 60,950 acres of reservation land, and 10 year mining options. A probable factor in the lack of interest was the recent exploration of the area by the Freeport-Sulphur company. That firm spent $400,000, found some ore but decided it was not worth the expense to mine. There are several big mining operations less than 20 miles from the reservation in the Grants area.—*Grants Beacon*

• • •

Rare Metals Corporation's buying station at Tuba City, Arizona, was opened in July. Ores determined to be amenable to the Tuba City process will be purchased on the basis of contracts negotiated with the company, it was announced. Producers having made previous ore shipments on contracts issued by the AEC were advised to contact Rare Metals for information regarding new sales, and new producers were invited to deliver trial shipments for amenability tests. —*Southern Utah News*

• • •

Development work on a group of 70 claims is underway by Mineral County Uranium Inc. They are in the Black Mountain district of the Excellsior Range near the old ghost town of Marietta, Nevada. Uranium was discovered in the Marietta fault in 1954 in the old gold and silver shafts and tunnels that were operated when the towns of Bellville, Marietta and Candelaria were booming. — *Mineral County Independent*

• • •

A new mining hazard—gnats—was responsible for the temporary closing of the Hart Uranium Mine near Austin, Nevada. A horde of gnats so thick they covered netting screens the operators were wearing over their heads, blinded them to such a degree that they could no longer perform their work. Despite the screens, the operators' were severely bitten. To date the operators have core-drilled 21 holes, ranging in depth from 10 to 100 feet, and assaying from .10 to .11 percent uranium. — *Reese River Reveille*

SENSATIONAL PRE-CONSTRUCTION **SALE**

ON GEIGER COUNTERS AND SCINTILLATORS

At Big Savings • Factory Guarantee • All New Instruments

R-C Scintillator Model CAX47P "Pioneer"....$740.00 Value **Now $425.00**
Complete with plug-in cartridge

Precision Scintillator Model 111-B.....$495.00 Value **Now $350.00**

Victoreen Scintillac Model 645.....$495.00 Value **Now $350.00**
The high sensitivity of the Scintillation instrument adapts it for mobile surveying whether by Auto or Airplane

The Scintilla-Dyne .....$249.00 Value **Now $165.00**
Large polished premium grade 1"x1" crystal sodium iodide

The Uranium Scout de luxe Counter.....$157.00 Value **Now $ 98.00**
With Bismuth tube and detachable prospecting stick

T-A Geiger Counter .....$159.00 Value **Now $ 97.50**
Rugged, rain proof, dust proof, built in loud speaker, battery checker, and many other features

Vic-Tic Geiger Counter .....$125.00 Value **Now $ 89.50**

Vic-Tic with six pack, consisting of 6 Bismuth tubes, twenty times more sensitive than a regular counter.....**Now $189.50**

CHEMICAL KITS • MORTERS AND PESTLES • GOLD PANS
BOOKS • MINERS' PICKS

QUALITY IS ALWAYS A BARGAIN

Open Tuesday Evening 'til 10:00 p.m.—Four blocks south of Olive

Compton Rock Shop

Telephone NE-2-9096

1409 S. LONG BEACH BLVD. **COMPTON, CALIFORNIA**

Uranium Industry Enters New Phase, Producers Believe

The uranium industry has definitely entered a new era, reports from various corners of the Great Basin indicate. Weekend prospecting fever is now abating. Large concerns are moving in and the little fellow feels pinched. Oil and copper companies are buying deposits, prospecting on their own.

The big problem now is to get mills near the large deposits to process the ore, producers say. A mill costs $4,000,000 and up—and that leaves out the small operator. Some 12 mills have been or are being built and uranium men predict that number will be doubled within two years.

The uranium production picture in the West looks good in general, Walter E. Scott, Jr., Colorado's commissioner of mines, believes. He predicts that the record established last year by his state in mine production will be broken again this year, and sees no drop in demand in sight for most metals.—*Phoenix Gazette*

• • •

Poisoned Water Delays Grants U-Mill Construction

The recently imposed restriction on the drilling of new wells in the Grants, New Mexico, area was ordered not only to conserve water, but to lessen the danger of poisoning the water basin, State Engineer Steve Reynolds, who issued the edict, declared. The Anaconda mill, only one operating in the area at present, is using about 2600 gallons a minute and flushing back to the ground surface about 2200 gallons.

The wasted water is loaded with nitrates, estimated at more than 600 parts per million. Adult human tolerance is believed to be about 100 parts per million, and infant tolerance about 60.

The order possibly hampered the establishment of at least two additional uranium mills in the Grants area. Reynolds said there is no hope that the water would be purified in seepage back into the basin. Best hope, he said, was that there is so much water in the underground basin that the poison water would be diluted to a harmless state, or that the poisoned water is seeping into another basin where it will do no harm. He added that a process for purification of the water at the mill would probably be prohibitively expensive.—Will Harrison in the *Alamogordo Daily News*

• • •

New California Ruling Curbs U-Stock Speculation

The California State Corporation Commission has filed a new administrative regulation with the Secretary of State which continues restrictions on the sale of uranium stocks to California residents. It has no effect on sales of out-of-state residents.

The new regulation requires a broker selling uranium stock to a California resident to notify the Commissioner of Corporations 48 hours before the sale. The broker can then be required to supply full information about the issue, assistant commissioner A. T. Sullivan said.

He explained that the 48-hour rule was adopted to control the speculative nature of some uranium stock transactions. — *Mining Record*

• • •

Standard Uranium Corporation reported the discovery of a new ore body in the Big Indian District, San Juan County, Utah. The occurrence, almost 16 feet thick, was encountered by mining crews after they had driven through non-bearing ground in the southeast sections of the mine. — *San Juan Record*

AEC Announces Provisos For Leasing U-Deposits

A system of competitive bidding for leasing uranium deposits on withdrawn or public lands and other areas under control of the AEC has become effective. For such deposits offered for lease, invitations to bid will be publicly posted and published. Interested persons will be placed on the mailing list of these notices by writing to the commission's Operations Office in Grand Junction, Colorado.

Leases will be awarded to the acceptable bidder, submitting the highest cash bonus by sealed bid. Before awarding leases, however, the commission may require high bidders to furnish information relating to experience, organization and financial resources. It reserves the right to reject bids.

Leases may continue to be negotiated instead of put up for competitive bidding in exceptional cases where it appears the best interest of the government will be served. An example would be a situation where a commission-controlled deposit could be economically mined only from the underground workings of an adjoining privately owned mine. Competitive bidding in such a case would be impracticable.

Extensions of existing leases also may be handled by negotiation, particularly where the lessee has developed ore reserves at his own expense.

The commission said, however, that with ore production from privately owned properties now at a high level, it is unlikely that many deposits included in the reserve will be offered for lease in the near future. The uranium deposits on the affected lands represent a reserve to be drawn on when needed.—*Salt Lake Tribune*

• • •

Texas Zinc to Operate Mexican Hat Uranium Mill

Texas Zinc Minerals Corporation and the AEC have signed a contract for construction and operation by Texas Zinc of a uranium processing mill near Mexican Hat on the San Juan River in southeastern Utah. Construction of a plant already is under way with completion scheduled for next fall.

Under terms of the contract the uranium concentrate products of the new mill will be sold to AEC on a unit price basis. Uranium ores from the White Canyon area of Utah and the Monument Valley area of Arizona will supply a part of the plant's need. The plant site is about one mile south of Mexican Hat and water supply will come from the San Juan River.—*Salt Lake Tribune*

Prospectors' Headquarters

GEIGER COUNTERS AND SCINTILLATORS

The "Snooper" Geiger counter—model 108	$ 29.95
The "Lucky Strike" Geiger counter—Model 106C	99.50
The "Professional" Geiger Counter—Model 107C	149.50
The "Special Scintillator"—Model 117	299.50
The "Deluxe" Scintillator—Model 111B	495.00

ULTRA-VIOLET MINERALIGHTS

Model NH—Operates on 110 AC only	14.75
Model M12—Operates on batteries only—with battery	40.65
Model SL-2537—Operates on batteries or 110 AC—without case and batteries	39.50
With No. 303 case and batteries	61.00
With No. 404 case and batteries	66.00

BOOKS

"Prospecting with a Geiger Counter" by Wright	.60
"Uranium Color Photo Tone"	1.00
"Uranium Prospectors Hand Book"	1.00
"The Uranium and Fluorescent Minerals" by H. C. Dake	2.00
"Popular Prospecting" by H. C. Dake	2.00
"Uranium, Where It Is and How to Find It" by Proctor and Hyatt	2.50
"Minerals for Atomic Energy" by Nininger	7.50
"Let's Go Prospecting" by Edward Arthur	3.50

MAPS

Map and Geology (Uranium and Mineral Districts of California)	1.50
Map of Kern County (New Section and Township)	1.50
Map Uranium and Minerals (The Nine Southwest States)	1.00
Book and Map "Gems and Minerals of California" by McAllister	1.75
Book and Map "Lost Mines and Treasures of the Southwest"	2.00

OTHER SUPPLIES

Mineral Hardness Test Set	2.00
Radiassay—Uranium Test Kit	14.95
Mercury—Detector Fluorescent Screen	6.75
Scheelite Fluorescent Analyzer	6.00
Fluorescent Mineral Set—10 Specimens—boxed	2.50
Mineral Specimen Boxes (35 named Minerals)	1.50
Prospectors Picks (not polished)	3.95
Prospectors Picks (polished)	4.25
12" Diameter Steel Gold Pan	1.25
16" Diameter Steel Gold Pan	1.70

All prices F.O.B. Los Angeles
Add 4% Sales Tax if you live in California
Member of American Gem & Mineral Suppliers Association

ALLEN LAPIDARY EQUIPMENT COMPANY

3632 West Slauson Ave., Dept. D Open Monday evening until 9:00 Los Angeles, Calif.

GEMS AND MINERALS

Clean Lapidary Equipment Is Key to Perfect Flat Slab Production

By GLENN and MARTHA VARGAS

Nearly everyone appreciates the beauty of a perfectly flat slab of agate that is enhanced with a mirror-like polish. The producing of this type of work is not easy and results are often unpredictable.

Before a job can be started, the equipment must be scrupulously clean. If you own but one lap and use it with all grit sizes, it must be so arranged that cleaning is a simple but thorough process. The wheel surface must be smooth and free of deep pits. A worn lap with an uneven surface will not produce a flat. Scoring the wheel with spiral grooves will allow you to hold the work easier, but at the same time it makes cleaning a bit more difficult. In any case, a lap should not be scored more than a sixteenth of an inch; deeper grooves make it much more difficult to remove unwanted grits.

The best speed for a lap wheel is under 200 rpm. Greater speeds only tend to throw grit off the wheel, and slower speeds do not appreciably increase lapping time. Actually more time is lost on a fast turning wheel by constantly replacing grit and working part of the time with an insufficient amount.

The writers' experience has been that the use of 100 grit as the first stage in lapping is a waste of time. If the saw has produced a nearly smooth surface, 220 grit will quickly make it perfectly flat. If the saw marks are deep, have the saw fixed. This will save time and money. We recommend after the use of 220, going to 400, 600 and finally 1200 before polishing. This will give the maximum polishing preparation for practically all materials.

Use of the coarser grit is expedited if it is floated in a carrier of mud. Any fine silt sized material that will form a creamy paste with water will do. There is an economy in reusing the coarse grit cuttings from previous lappings, for they contain unused grits. After drying, these cuttings should be mixed with an equal amount of fresh grit. All that is necessary is to add the dry mixture from a shaker and keep the lap wet. Water is best added by brush; an ordinary one-inch paint brush is satisfactory.

When the surface is smooth and all saw marks are removed, the job of 220 grit is done. All surfaces of the material must now be washed, as well as your hands, and the lap wheel if it is to be used for the next size grit. Do not attempt to start the next step unless you are certain that every single grain of the previous size has been removed. Carelessness only results in failure.

The 400 grit is applied with a brush from a water mixture. About one heaping tablespoon of grit to a half pint of water is a good proportion. As the grit will sink in the mixture, a slight sweep of the bottom of the solution with the brush at each application will usually place the desired amount on the wheel. It is important that not too much is applied as it will easily fly off the wheel. This loss of grit is lessened as one moves to the smaller sizes, but 400 is still a bit large.

We frequently are asked, "How long should I lap with each of the finer sizes?" It is a difficult question to answer for it depends upon a number of factors. The two most important are the type of material and size of the slab. Minerals that are hard or tough will consume much more time than the softer ones. An interesting principle operates in regard to slab size: as grit enters beneath the slab it is immediately put to work, and the very act of cutting begins to reduce the grain size so that with very large slabs, it is very possible to have extremely small grains reaching the center of the work. Thus the time factor increases more rapidly than any increase in slab surface. It is very difficult to work material over seven inches in diameter on an ordinary lap. For these larger sizes, special equipment should be used.

The best method to determine the point at which to move to a smaller grit size is to recognize the surface each grit produces. Use a small magnifier and view the surface when it is dry. If it is frosty of equal density throughout, and contains no evident scratches, it is ready for the next stage. If scratches are present, continue until they are removed. If they persist, the work is contaminated.

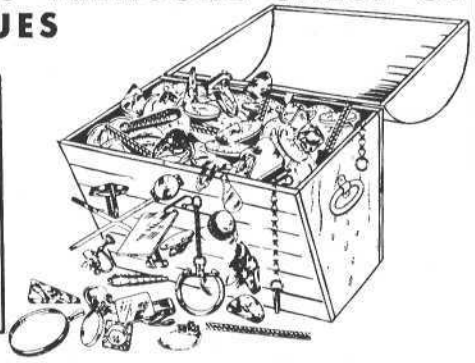
The 600 and 1200 grit steps are much the same as that of the 400 with perhaps a little less time involved as the smaller sizes are reached. It must be emphasized that the finer grits cannot be overdone as far as the final polish is concerned. The greatest waste would be time, and a greater amount will be wasted if one moves too fast and then has to return to a previous step.

The holding of slabs during the process is important. Obviously quarter-inch thick slabs are practically impossible to hold on

GRIEGER'S FABULOUS TREASURE CHEST OF JEWELRY VALUES

KEY CHAINS
BRACELET CHAINS
LARIAT CORDS
BELL CAPS
BAROQUE RINGS
BAROQUE CUFF LINKS
BAROQUE STONES
RING MOUNTINGS
LUCKY CLOVER
EARWIRES

QUALITY
LOW PRICES
VARIETY
SEND FOR OUR LATEST BARGAIN BULLETIN FOR A LISTING OF MANY OF THESE ITEMS.



SAVE $ $ $

SEND FOR OUR LATEST BULLETIN OF BARGAINS

IT'S FREE

NEW DEALERS: IF YOU ARE NOT ON OUR MAILING LIST, send for dealer information.

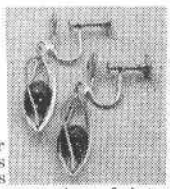
GRIEGER'S, INC., are the **LARGEST SUPPLIERS OF JEWELRY PARTS, GEM CUTTING EQUIPMENT, JEWELRY TOOLS, GEM STONES & PROSPECTING EQUIPMENT.**

Form K9-4 (OVER 10,000 ITEMS TO SELECT FROM)

GRIEGER'S INC. • Mailing Address: P. O. Box 4185 • CATALINA STATION, PASADENA, CALIF.
Store Address: 1633 E. WALNUT ST. • PASADENA 4, CALIF.
OUR STORE IS OPEN EVERY DAY 8:30 A.M. UNTIL 5:00 P.M. — CLOSED ALL DAY SUNDAY

EARRINGS

MIX OR MATCH KIT



Dozens of possible color combinations. Kit includes one pair of pendant cages with ear screws and seven pairs of interchangeable settings in glowing gem colors: Turquoise • Jet • Coral • Amethyst • Sapphire • Ruby • Emerald.

No Skill or Tools Necessary

$1.95 postage and tax paid (no C.O.D.s please)

THE TRIBAL CRAFTSMEN
P.O. Box 5012 • Phoenix, Arizona

a lap wheel. The cementing of a small block of wood to the slab will facilitate the job. Ordinary dopping wax is good, but if there is any danger of heat damage, use sodium silicate. This chemical is obtainable under the trade name water glass or egg keep. It is extremely economical when used as a glue. After applying, it should stand for a few hours or a day. Removal is best done by soaking in water. A few stubborn cases may need soaking in warm water.

The most efficient way to do the actual lapping is to move the slab across the near half of the wheel with slow steady strokes, constantly turning the work. A rapid washboard movement does appreciably no more work and will only tend to tire the arms. Fatigue in the lapping process may lead to accidents. Enormous forces are at play and the work can be easily torn from hand. When this happens, stop the machine and retrieve the work. We have seen some bad cuts from trying to grab the work while it is bouncing around on the wheel.

The best general advice to follow in lapping is to take plenty of time; keep hands, rocks, and machines scrupulously clean. Use material that is as free from pits and holes as possible. Pits gather grit and then release it at the most inopportune moments. Watch these and you can be assured of pleasing results.

• • •

GEM SHOW PLANNED FOR RANDSBURG CELEBRATION

The annual Randsburg, California, "Old Timers Celebration," traditionally held on the Labor Day weekend, is scheduled for September 14-15 this year in order to take advantage of expected cooler weather. The event is co-sponsored by the local American Legion Post, Chamber of Commerce, Lions Club and Kern County Chapter of the Western Mining Council.

Local gem and mineral societies will participate in a competitive show at the new Ralston Building in Johannesburg.

"Because the entire Rand district, including the El Paso Mountains, has been a favorite collecting place for all rockhounds for years, we expect to have a fine reunion this year and a good time for all," Della G. Gerbracht, chairman of the gem and mineral committee, declared.

Scheduled, in addition to the gem and mineral show, are hard rock drilling contests, gold panning, shows, dancing and mine tours.

GEM SOCIETY ADOPTS ROCKHOUND'S PLEDGE

The Glendale, California, Lapidary and Gem Society has unanimously adopted a Rockhound's Pledge aimed at improving the conduct of rockhounds in order to help keep open the remaining rock hunting areas, Eugene Rath, president of the organization, announced. Rath urged other clubs to adopt this or a similar pledge so the collecting areas would be protected.

The Glendale pledge:

1. We will respect all private property and do no rock hunting without the consent of the owners.
2. We will bring to the hunting area no firearms or blasting material.
3. We will build no fires except in designated or safe places.
4. We will not contaminate wells, creeks or other water supplies.
5. We will leave all camping areas clear of our refuse.
6. We will close all gates behind us.
7. We will take no more material than we can reasonably use.
8. We will take with our tools a large sack of friendly enthusiasm and bring home with our treasures a hoard of happy memories.

SCIENTISTS MAKE COESITE, JADE, ARAGONITE IN LAB

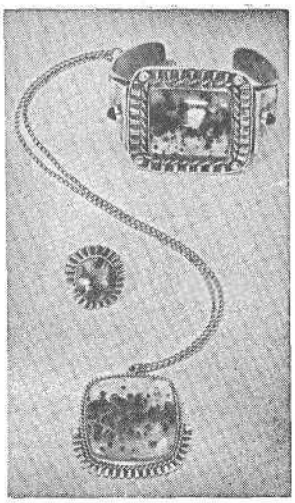
By subjecting minerals to combinations of high temperatures and pressure, UCLA geophysicists have created minerals rarely found near the earth's surface. Using a laboratory device called the "simple squeezer," conditions that formed minerals at extreme depths in the earth's crust have been duplicated. From common quartz they have created coesite — a dense mineral which can exist only 40 miles or more deep in the earth. Jade has been made from feldspar and aragonite from limestone.

The scientists have also been able to make various dense aluminous minerals from ordinary clay. — *Aztec Independent-Review*

CALIFORNIA FEDERATION ELECTS NEW OFFICERS

W. A. "Bill" Stephenson of Los Angeles was elected president of the California Federation of Mineralogical Societies at the 1956 Convention and Show at Fresno in June.

Also named to office were Jack Klein, vice president mineral division, Barstow; Mrs. H. H. Hardman, vice president lapidary division, Long Beach; Mrs. Veryle Carnahan, secretary, Whittier; and Joseph H. Engbeck, treasurer, San Leandro.—*Gems and Minerals*



Here Are The Gifts You've Been Looking For!

Petrified Wood, Moss Agate, Chrysocolla Turquoise, Jade and Jasper Jewelry

HAND MADE IN STERLING SILVER

Bracelets, Rings, Necklaces, Earrings and Brooches

SPECIALLY SELECTED STONES WITH CHOICE COLORS AND PICTURES

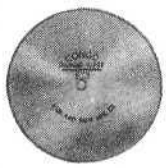
Write for Folder With Prices

ELLIOTT'S GEM SHOP

235 East Seaside Blvd. Long Beach 2, California
Across from West End of Municipal Auditorium Grounds
Hours 10 a.m. to 9 p.m. Daily Except Monday

HIGHLAND PARK

THE LAPIDARY'S STANDARD OF VALUE

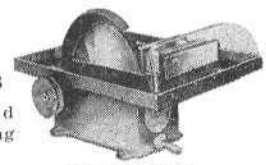


BUY THE BEST FOR LESS

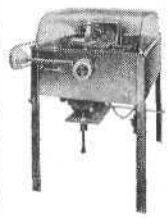
Congo Dia Blades — Sizes Range from 4" to 24" in Light, Standard, Heavy and Extra Heavy duty.

Highland Park Trim Saws

Compact and rugged for long lasting service.



E-1 Trim Saw



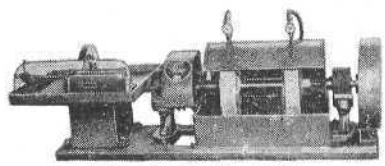
J-2 & J-3 Slab Saw

A Leader In Its Field

Highland Park Power-feed Slab Saws. Sizes range from 12" to 24". Metal or Lucite hood.

Highland Park Combination Unit

Available in all sizes. Perfect Combination Unit for Lapidary work. Handles sawing, grinding, sanding and polishing. Exceptionally quiet operation.



E-10 Combination Unit

Arbors of all sizes—Tumblers, two models.

Wet and dry belt sanders—Lapidary units in two different sizes.

32 MODELS TO CHOOSE FROM

The most complete line of lapidary machinery offered by any manufacturer. See these at your local Highland Park dealer or write for free literature.

A Product of

HIGHLAND PARK MANUFACTURING CO.

1009-1011 Mission Street
South Pasadena, California

GEM MART

ADVERTISING RATE
12c a word . . . Minimum $2.00

COLORADO MINERAL specimens, cutting and tumbling materials. Send 2 cent stamp for list and terms. Dealers please write for wholesale list. John Patrick, Idaho Springs, Colorado.

GEMS OF THE desert, tumbled polished baroques. Mexican lace and carnelian agate, Death Valley jasper agate, rose quartz, petrified wood palm, black fig, many others. General mixture, $6 pound. Mexican agate slices and various cuff link preforms. Slabs and findings. Earring size tumbled turquoise $8 pound, larger size $1 ounce. Price list. Golden West Gem Co., 7355 Lankershim Blvd., North Hollywood, California.

A DOLLAR DEPOSIT brings a brilliant polished approval selection of assorted slabbed agate. Rare Moss and Plume Nodules in 10 lb. lots $2 per pound plus postage. Helena Jones, 15420 Southeast Division, Portland 66, Oregon.

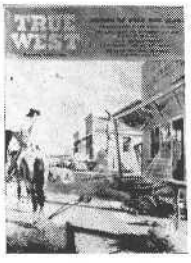
McSHAN'S GEM SHOP—open 5 to 9 p.m. except Mondays and Thursdays. Rocks, gems, cholla cactus wood. Mile west on U.S. 66, Needles, California, Box 22.

OPALS AND SAPPHIRES rough, direct from Australia. Cutting opal, 1 ounce $5, $10, $20, $30 and $60. Blue sapphires, 1 ounce $10, $30 and $60. Star sapphires 12 stones $10, $20, and $30, etc. Post free and insured. Send international money order, bank draft. Australian Gem Trading Co., 49 Elizabeth St., Melbourne, Australia. Free list of all Australian stones rough and cut, 16 pp.

TUMBLED GEM Baroque all polished. Small and large sizes 3 oz. $1.25. Gems in the rough, 5 lbs. for $4.00. Dixie Rock Shop, 3245 Prospect Ave., So. San Gabriel, California.

ATTENTION — Advanced collectors and dealers — smoky quartz crystals in singles (one, 54 lbs.) and groups—$10 to $250. Write wants. The whole mine production for sale to person qualified to handle. U. S. gem quality desert roses (chalcedony) ½" to 2"—cabinet specimens or cutting material. All beautiful—no "duds" —at $2 per lb. (state size), 3 lbs. $5.00, postage please. C. Earl Napier, 20472 Harvard Ave., Hayward, California.

ROCKHOUNDS! Semi-precious polished rocks mailed direct to you from India. $3.00 postpaid. Bowman & Son, Box 41231, Los Angeles 41, California.



OLD WEST

If you like the OLD WEST, you'll treasure TRUE WEST—only slick-paper magazine of its kind. Each bi-monthly issue crammed with factual, exciting articles written by top authorities. Plenty of action photos, too—all about the Old West: BAD MEN, LOST MINES, BURIED TREASURE, RANGE WARS, INDIAN FIGHTS, OUTLAWS, GHOST-TOWNS, TRAIL DRIVES, GOLD RUSH, COWBOYS & RANCH LIFE. Truly, TRUE WEST is the *real* thing! Subscribe NOW.

SPECIAL GET-ACQUAINTED OFFER:

* 2 years of TRUE WEST (12 issues) $3.00
* 4 years of TRUE WEST (24 issues) $5.00

Rush bills, check or M.O. to:

TRUE WEST • P.O.Box 5008-M • Austin 31, Texas

GENUINE TURQUOISE: Natural color, blue and bluish green, cut and polished Cabochons — 25 carats (5 to 10 stones according to size) $3.50 including tax, postpaid in U.S.A. Package 50 carats (10 to 20 cabochons) $6.15 including tax, postpaid in U.S.A. Elliott Gem & Mineral Shop, 235 E. Seaside Blvd., Long Beach 2, California.

FOR SALE: Beautiful purple petrified wood with uranium, pyrolusite, manganite. Nice sample $1.00 Postage. Maggie Baker, Box 7, Hackberry, Arizona.

HAVE REAL FUN with desert gems, minerals and rocks. The rockhound's how-to-do-it magazine tells how. One year (12 issues) only $3.00. Sample 25c. Gems and Minerals, Dept. J10, Palmdale, California.

BEAUTIFUL seven gem bracelet, specify gold, silver, with agate, rhodonite, or assorted stone drops. $3.00 pp. Santa Cruz Mountain Gems, P.O. Box 924, Los Gatos, California.

STAY AT the Skalkaha Guest Ranch while digging for Montana Sapphires. Located right next to the old sapphire mines. Reasonable rates—day, week or month. We have sapphires for sale, good fishing, excellent hunting for elk, moose, deer and bear. Scenic horseback rides in the beautiful Sapphire Range. For reservations write: Harry Bentz, Philipsburg, Mont.

GEMS A-PLENTY: Beautiful baroque gems, large variety, tumble polished all over, $10.00 for one pound (about 100 stones). 10 lbs. of top grade gemstone prepaid for $7.00. Wholesale price to dealers on baroque gems and gemstone in the rough. Satisfaction guaranteed on every sale. San Fernando Valley Gem Co., 5905 Kester Ave., Van Nuys, California.

VISIT GOLD Pan Rock Shop. Beautiful sphere material, gems, mineral specimens, choice crystals, gem materials, jewelry, baroques, etc. Over 100 tons of material to select from. John and Etta James, proprietors, 2020 N. Carson Street, Carson City, Nevada.

CHILDREN TO EXHIBIT AT SOUTH BAY GEM SHOW

"A Family Hobby" is the theme of the September 15-16 South Bay, California, Lapidary and Mineral Society's show. In keeping with the theme, a special pebble pup section will be set aside for children to display their work and collections.

The event is scheduled for Clark Stadium, 861 Valley Drive, Hermosa Beach, from 10 to 10 on Saturday the 15th and from 10 a.m. to 6 p.m. on Sunday the 16th.

KENT FROST JEEP TRIPS
Into the Famous Utah Needles Area
Junction of the Green and Colorado rivers; Indian and Salt creeks; Davis, Lavander, Monument, Red, Dark and White canyons; Dead Horse and Grand View points; Hovenweep and Bridges national monuments.
3-day or longer trips for 2-6 person parties —$25 daily per person. Includes sleeping bags, transportation, guide service, meals. Write KENT FROST, Monticello, Utah.

FIRST MAN-MADE DIAMONDS PRESENTED TO SMITHSONIAN

The world's first artificial diamonds were recently presented to the Smithsonian Institution by General Electric Company, developers of the process. The presentation consisted of a 100-carat sample cluster of diamonds mounted in a plaque and surrounded by other early-type laboratory diamonds.

Every known test, including analysis of crystallography by X-ray diffraction, has removed all doubts that the artificial diamonds are different from those mined from the earth in Africa or South America. GE officials believe the artificial stones are as good and in some instances better than the natural product for industrial uses.

To manufacture the artificial diamonds a carbonaceous compound is subjected to the highest combined pressure and temperature ever attained by man — 2,700,000 pounds per square inch and heat in excess of 5000 degrees F. Noteworthy is the fact that these conditions had to be maintained for long periods of time—in fact, the industrial importance of the experiment parallels the scientific importance by achieving pressure vessels and apparatuses which permitted such experimentation, GE said. Some day, GE scientists believe, man may be able to manufacture super-diamonds in which the atoms of carbon would be compelled to assume a closer-packed arrangement than in present diamonds.—*Rocks and Minerals*

• • •

CALIFORNIA MINERAL NAME CHANGES ARE ANNOUNCED

The rare mineral beta-inderite, found on the Mojave Desert at Boron, California, has been renamed lesserite. In other mineral classification news, it was announced that plombierite, a new hydrous calcium silicate, has been added to the Crestmore, California, list. Tobermorite is now the proper name for crestmoreite and riversideite. The study of these minerals still is being continued, however, and some eventually may be named as sub-species.

Research scientists report that foshagite will be named a species. X-ray diffraction studies have shown that both foshagite and hillebrandite are present at Crestmore, and that their x-ray patterns are different.

Information has been received that in Dana's latest volume on mineral classification, soon to be issued, the quartz family will be divided into three species: crystal quartz; chalcedony; and the colloids, i.e., agate, opal, etc.—Col. C. M. Jenni in the Montebello, California, Mineral and Lapidary Society's *The Braggin' Rock*

• • •

New officers of the Sacramento, California, Mineral Society are Lillian Coleman, president; George Neal, vice president; Kay Montgomery, recording secretary; and Evelyn Whitcomb, editor. The organization meets on the fourth Friday of each month except in July and August.—*Matrix*

• • •

Joe Murphy, president, and Bill Conant, vice president, head the slate of new officers elected by the Bexar County, Texas, Mineral Hobby Club. Also elected were Mrs. Helen Horn, secretary; Bill Cory, treasurer; Roger Victs, Sam Luetheke and J. H. Gaines, trustees.

• • •

New officers of the Santa Barbara, California, Mineral and Gem Society are Wm. Stone, president; Mrs. Wm. Pfleging, vice president; Mrs. Sue Glidden, secretary; Anna Hanell, treasurer; and Beth McLeod, director.—*Mineral News*

SEPTEMBER SHOW DATES ANNOUNCED BY SOCIETIES

Following are the gem and mineral shows scheduled for the month of September:

August 30-September 3—San Fernando Valley Agricultural Fair and Gem and Mineral Show, Northridge, California.

September 1-3—Northwest Federation of Mineralogical Societies, convention and show, Boise, Idaho.

September 2—Gem Village Rendezvous, Bayfield, Colorado.

September 6-9 — Antelope Valley Fair, Lancaster, California.

September 8-9 — Compton, California, Gem and Mineral Club.

September 14-15—"Old Timers Celebration" and show, Randsburg, California.

September 15-16 — South Bay Lapidary and Mineral Society, Hermosa Beach, California.

September 15-16 — Antioch, California, Lapidary Club.

September 20-23—Santa Cruz Mineral and Gem Society, Watsonville, California.

September 22-23 — Santa Clara Valley Gem and Mineral Society, San Jose, California.

September 27-30—Eastern Federation of Mineralogical and Lapidary Societies, convention and show, Baltimore, Maryland.

September 29-30 — Delvers Gem and Mineral Society, Bellflower, California, "The Miracle of the Rock."

• • •

EASTERN FEDERATION SHOW, CONCLAVE SEPTEMBER 27-30

The sixth annual convention and gem and mineral show of the Eastern Federation of Mineralogical and Lapidary Societies will be held at the Emerson Hotel in Baltimore, Maryland, on September 27-29, with field trips scheduled for Sunday, September 30.

A three-day program covering rocks, minerals, crystals, gems and jewelry has been arranged. Dr. George F. Carter, Chairman of the Isaish School of Geography of Johns Hopkins University, who startled archeologists in 1949 and again in 1953 with announcement that humans lived in America more than 100,000 years ago, and showed rock fragments found in California believed used by these earliest humans, will be the banquet speaker on Friday evening, September 29.

Featured in the show will be rare gems and minerals of the Smithsonian Institution never before exhibited, including a huge rose-colored tourmaline crystal more than six inches across the top and a foot long and a group of beautiful radio-active crystals. Among items that have been shown will be the famous Chatham Emerald.

• • •

Howard M. Knight was elected chairman of the Earth Science Club of Northern Illinois along with W. L. Hoff, vice chairman; Ben A. Benson, second vice chairman; Mrs. Margaret J. Darrow, recording secretary; Mrs. Stella Barrick, corresponding secretary; George L. Darrow, editor; and Ray Bish, curator.—*Earth Science News*

• • •

To remove the brown iron stain from quartz crystals, soak them in a solution of two ounces oxalic acid in one quart of water. This should be done in a Pyrex glass container. The process can be speeded by gently boiling the solution—with the emphasis on "gently." Black stains in quartz are usually made by manganese. These can be removed with diluted hydrochloric acid (one part acid to one part water)—for safety add the acid to the water and not the water to the acid.—Siskiyou, California, *Gem*

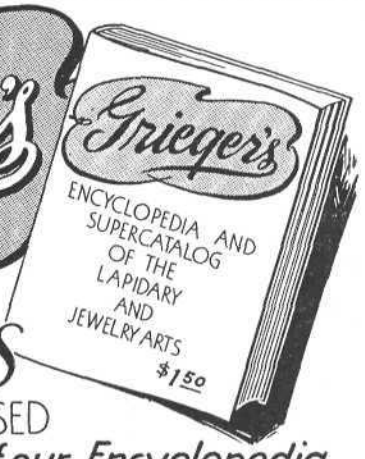
GEM BENITOITE IS FOUND IN CALIFORNIA

In 1907 an unusual discovery was made near the headwaters of the San Benito River in California — benitoite, a sapphire-blue mineral-gemstone in the hexagonal-trigonal class. Since the crystals are so distinctive, no tests are necessary to identify the mineral, and there is but one occurrence of this gem stone in the world.

Benitoite occurs in a natrolite dike in a green schist in serpentine, with neptunite. In chemical composition it is barium titanium silicate. Neptunite, found with benitoite, is another rare titanium mineral which was previously know to occur only in Greenland.

At a casual glance faceted benitoite may easily pass for sapphire. Benitoite is lower in specific gravity and is considerably lower in hardness, however. Several stones, as large as one to two carats in weight, have been found and the largest of all, a perfectly flawless stone, weighed just over seven carats.—R. Brock in the Compton, California, Gem and Mineral Society's *Rockhound's Call*

Grieger's



EXCITING News

ON JULY 15TH WE RELEASED

The New 1956 Edition of our Encyclopedia and Super Catalog of the Lapidary & Jewelry Arts

Over **8 TONS OF PAPER** were used to print the first 10,000 copies of this book. A LIMITED NUMBER OF THESE ENCYCLOPEDIAS ARE AVAILABLE. **WHILE THEY LAST**

YOU MAY PURCHASE THESE AT:

$1.50 for paper bound copies.
$2.50 for DELUXE BOOK BINDING.

ONCE THIS FIRST EDITION IS SOLD THE **PRICE WILL ADVANCE TO AT LEAST**
$2.00 for paper bound copies
$3.50 for DELUXE BOOK BINDING.
Over **5000 copies** were **SOLD** PRIOR TO July 15th, 1956.

GRIEGER'S ENCYCLOPEDIA contains **224 pages** 8½" x 11" in size. **EIGHT** different **COLORS** of ink were used to print certain sections of this book.

THIS IS THE LARGEST and **THE FINEST CATALOG EVER TO BE PUBLISHED.**

WE OFFER YOU:

GEM CUTTING MACHINERY and **SUPPLIES · JEWELRY MAKING TOOLS** and **SUPPLIES · BLANK MOUNTINGS · JEWELRY PARTS · JEWELRY METALS · BOOKS · ULTRA VIOLET LAMPS · TUMBLE POLISHED GEMS · PREFORMS · CUT GEMS · ROUGH GEM STOCK** and **INSTRUCTIVE ARTICLES.**

YOU CANNOT BUY A COPY OF "GRIEGER'S ENCYCLOPEDIA AND SUPERCATALOG OF THE LAPIDARY AND JEWELRY ARTS" for 1948 or 1950 at 5 or ten times the original cost of $1.00. Most of the people who still have these books will not sell them at any price.

Here are some actual letters we received from customers who purchased our 1948 Encyclopedia which was 164 pages.

"It is the finest and by far the most outstanding catalog of its kind that I have ever seen, and I run across many catalogs from firms all over the country."
Thomas A. Warren—Los Angeles

"Far better than anything else ever. Couldn't put it down until I'd gone thru it cover to cover. Won't be good for anything else until I've read it thoroughly. My order will follow."
Lester Burmeister—Wisconsin

"I do not see how you expect to sell books when you put so much technical information in your catalogs on how to pursue one's hobbies."
C. W. Stimson—Seattle, Wash.

GRIEGER'S, Inc. 1633 E. Walnut St. Pasadena 4, Calif.
MAIL ADDRESS: P. O. Box 4185, CATALINA STATION, PASADENA, CALIF.

MONTANA SAPPHIRE MINE TO BE WORKED AGAIN

The Yogo Sapphire Deposit in Montana, unworked for 30 years and described by the U.S. Geological Survey as "the most important gem locality in the United States," has been acquired by Rocky Mountain area investors from its British owners and will go back into production soon.

From the time the first gems were extracted in the 1890s until production ceased in 1927, more than $20,000,000 worth of gems were taken from the ground, one source reported.

Reserves of sapphire-bearing material, said the Geological Survey in a 1952 report, "are probably adequate to supply several times the quantity mined."

Most sapphires are mined in small deposits by placer methods in Ceylon, Burma and India. The Yogo is believed the world's only known sapphire lode in a dike some four miles long.—*Salt Lake Tribune*

• • •

"Melodies in Gems" has been named theme of the September 8-9 Compton, California, Gem and Mineral Club's 7th Annual Show. It was suggested by Don Beck. The event is scheduled for the VFW Hall, 119 East Magnolia Avenue, Compton.—*Rockhounds Call*

NOTICE

BENSUSAN'S BRAZILIAN LAPIDARY

has moved to

13814 Ventura Boulevard
SHERMAN OAKS, CALIFORNIA
(Highway 101)—Phone STate 9-9924

STORE WARMING PARTY

Jim Morgan, September 15
Spade Cooley, September 16

All Rockhounds and Friends Welcome

ALABASTER AND HERRING MAKE SIMULATED PEARLS

Simulated pearls in all the modern shades are made from herring and alabaster. The latter is used for the base core and the herring scales, which are scraped off and ground, are the principal ingredients of the secret formula coating.

Alabaster has replaced plastic (which is too light) and ivory (which is opaque) as the core material. It is semi-translucent and gives the outer coating a good foundation.

The alabaster is melted onto a wire and spun into a ball. The wire is then eaten out with acid, leaving a hole for the bead. These beads are stuck on wooden pegs fastened onto a block holding 500 of them. The beads are then dipped into the secret formula which includes herring scales, acetone, dye and other ingredients. The drying process of one to two and a half hours is carefully controlled.

The blocks are rotated to give an even coat. Temperature and humidity affect the results and they are regulated.

The dipping and drying is repeated until a luster is established that gives a lovely translucent bead. The cheaper beads are dipped five times; the more expensive ones, 10. The beads are graded as to size and color and strung by hand.

This process has involved considerable research and experimentation to avoid flaking, wrinkling, a dull milky appearance and streaks. — Seattle, Washington, Gem Collectors' Club's *Nuts and Nodules*

• • •

William W. Davis was recently elected president of the Wichita, Kansas, Gem and Mineral Society. Also named to office were Robert L. Phelps, Sr., first vice president; Joe Townsend, second vice president; Ernest Grittman, third vice president; Mrs. Harry Brasted, secretary; Harry Brasted, treasurer; Mrs. Walter J. Broderson, editor; John W. Gholson, finance chairman; Mrs. Stephen B. Lee, membership-fellowship chairman; Brace Helfrich, curator; and Stephen B. Lee, Neil Baskett and Norman Mueller, directors.—*Quarry Quips*

ALTERNATING POLISH PRODUCES HIGH LUSTER

Burnite and other stones which are difficult to polish, can be brought to a high luster with the following technique:

Polish with a hard felt buff using chrome oxide and graphite powder applied alternately to the buff. The chrome oxide is applied as paste a little at a time and the dry graphite powder is placed on the buff by hand. Retain the buff dampness with a few drops of water, but do not saturate and run the buff slowly so the powder will not fly off of it. This will work well on sodalite, varicite, feldspar and other hard-to-polish rocks. — Stanley Brown in the Seattle, Washington, Gem Collectors' Club's *Nuts and Nodules*

• • •

Extensive collections of precious and semi-precious stones are to be featured at the Napa Valley, California, Gem and Mineral show, scheduled for the Home Economics Building of the Napa District Fair Grounds on October 13-14. Many minerals are also expected to be shown and combined rock and flower arrangements will compete for prizes.

• • •

The East Bay Mineral Society of Oakland, California, has elected the following officers for the 1956-57 club year: Sidney Smyth, president; Francis Rhoades, vice president; Mr. and Mrs. O. R. Russell, treasurers; Mrs. Jenness Anderson, recording secretary; Marion Smyth, corresponding secretary; Si Edwards, Dennis Patterson and Frank Wilcox, directors.

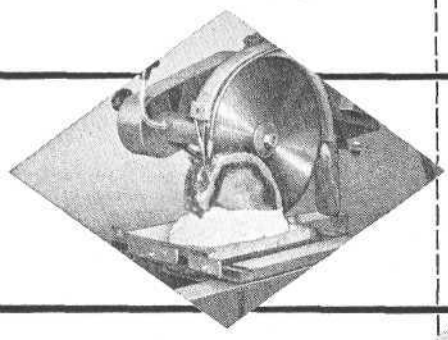
• • •

Recently installed as officers of the Arrowhead Mineralogical Society of Fontana, California, were John Kelly, president; Warren Bloomer, vice president; John Short, trustee; Floyd Mortimer, secretary; Lucia Mehring, treasurer; and Vivienne Dosse, federation director and bulletin editor.—*Arrowpoints*

• • •

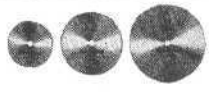
Hollywood, California, Lapidary and Mineral Society members elected Rolfe Smith president for the coming club year. Also elected were Jean Shirey, vice president; Grace Reel, treasurer; Virginia Miller, recording secretary; and Charles Patterson, director.—*The Sphere*

Cut 'Em FAST... Cut 'Em SMOOTH!





For Low Original Cost, specify Felker RIM-LOCK!... standard of the lapidary industry. Rugged, speedy and gives excellent service for a modest investment. Available in copper or steel, diameters 3 inches through 36 inches.

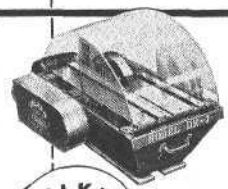


For Long Life and Extra Fast Cuts, specify Felker KIMBERLEY! Costs more but makes up for the difference in unusually long life! Metal bond rim gets the most use from every diamond particle! Fastest cutting lapidary blade on the market!

It's EASIER with Felker Di-Met RIM-LOCK and KIMBERLEY DIAMOND BLADES! Developed by lapidists for lapidists... designed especially for extra cutting speed and economical life! For a quicker look inside your rocks, you can always depend upon Felker performance!

COLOR FILM AVAILABLE

For Club and Society programs request strip film, "Diamond Mining in So. Africa" with 33⅓ long-play record.



Felker Model DH-1—A lapidary saw that operates like a circular saw! Blade dips into coolant stored in aluminum base... can't run dry! Includes rip and angle fences. Uses 6 inch or 8 inch Rimlock or Kimberley blades. Other machines available.

FELKER DI-MET SINCE 1924

FELKER MANUFACTURING CO.
Torrance, California

World's largest manufacturer of diamond abrasive cut-off blades and equipment.

ANSWERS TO DESERT QUIZ

Questions are on page 14

1—An animal resembling a wild hog.
2—Death Valley.
3—The Acomas.
4—Saguaro.
5—Salt River.
6—Conrad Wirth.
7—A general revolt of the Pueblo Indians against the Spaniards.
8—Grinding meal.
9—Copper.
10—The John Wetherill family.
11—Hopi Indians.
12—Colorado River.
13—Ephedra.
14—Tombstone.
15—Beavers.
16—A lodge or ceremonial room for men.
17—Use in insulation.
18—Petrified Forest National Monument.
19—Superstition Mountains of Arizona.
20—San Gorgonio Peak.

AMATEUR GEM CUTTER

By DR. H. C. DAKE, Editor of The Mineralogist

Many amateur gem cutters wish to mount into rings the cabochon stones produced in their home shops. Ready made mountings for cabochon stones are available from supply houses. Ready made mountings are made in standard sizes (millimeter sizes), and in sterling silver, gold, and gold filled. The sizes and styles include oval, rectangular and square shapes. The silver mountings are inexpensive and attractive, and can also be had with inlays of ornate gold.

It is a simple matter to cut a cabochon to shape and size for a ready made ring mounting. No soldering is necessary; a wooden clamp to hold the ring mounting and a bezel closing tool are all the equipment needed. The ready made mountings are available from supply houses in numerous styles, sizes and shapes for both ladies' and men's rings. Similar ready made brooches are also available.

For those who desire to assemble and size mountings, shanks, bezel strips, solder and other findings, in both gold and silver, can be obtained from supply houses. Only a few inexpensive tools are needed for the more simple mountings. A foot bellows and soldering torch connected to natural or artificial gas will suffice for soldering gold or silver.

* * *

Beginners in the art of gem cutting sometimes have difficulty in dopping the gem. A little experience will soon enable the amateur to securely fasten the stone to the dop stick so only a minimum percentage will fall off the wax while being worked. A few suggestions are given here.

The dopping wax may be melted directly from the stick on to the stone (over an open flame), or the wax may be melted in a small container and the dopping stick dipped into the melted wax and applied to the stone. Do not overheat the wax to a point where it will smoke.

The stone first should be warmed, and this is best done by placing the stone on a piece of thin sheet metal, with a small bunsen burner or alcohol lamp below. The stone should be warmed to a point where it can be comfortably handled by the fingers. This low heat (not over about 140 F.) is not likely to injure even the most delicate opal, since the heating is done slowly.

Do not expect a 100 percent adherence of stones to the dop sticks, for the professional gem cutter may often have as high as 25 percent drop off during the working operations. If ordinary care is used in handling, few will be lost. Use care not to overheat while sanding or polishing. Washing the stone in cold water is very likely to cause it to drop off. When the partly melted dop wax is in position on the stick, press the warm stone firmly into position, and work the wax into position along the sides. While doing this the wax portion of the stick may be quickly passed through the flame a few times, should it become too hard to work. The excess wax may be removed with the fingers when warm, or trimmed off with a knife blade when cool.

Two different methods may be used to remove the stone from the dop. The stone and wax may be dipped into hot water, where the wax will soften and allow the stone to slide off, or a knife blade may be inserted between the stone and the wax.

Allow the dop to remain in cold water for a few minutes, after which the gem can be pried loose with a little pressure. If your water from the tap is not cold enough, ice cubes in a pan of water will prove effective. Any wax adhering to the stone may be scraped off with a razor blade, or dissolved off by placing the stones in denatured alcohol or turpentine for a few minutes.

If the dopping wax shows a tendency to break and crack readily, it may be too brittle. This can be remedied by melting the wax and adding a small amount of beeswax. The beeswax will reduce brittleness, and render the wax more sticky. Too much beeswax will lower the melting of the wax too much. Commercial dopping waxes will generally be found to be of the correct composition mixture.

* * *

Attention is called to the danger of placing too large a grinding wheel on a small diameter grinding arbor or spindle. Instances are known where a 12-inch grinding wheel has been mounted on a one-quarter or one-half inch spindle, and in operating at standard speed, would be torn off, thus releasing the whirling wheel. This practice is fraught with danger.

Below are given *minimum* safe spindle sizes.

6x1-inch wheel—½-inch spindle.

9x1-inch wheel—¾-inch spindle.

12x1-inch wheel—1-inch spindle.

20x1-inch wheel—1½-inch spindle.

The above spindle sizes are given for a maximum operating speed of 7000 surface feet per minute, the standard speed used being 6000 s.f.p.m.

In the use of wet grinding wheels, do not permit a wheel to stand partially immersed in water for a period of time. The water-soaked portion being heavier may throw the wheel dangerously out of balance. If a wheel has been subjected to rough handling in shipping a crack may develop, hence in starting a new wheel in operation, stand to one side until after full wheel speed has developed for a few minutes. Do not remove the washers of blotting paper which are placed at the factory: this compressible material is placed there for a good reason; it is not merely ornamental. When tightening arbor (spindle) end nuts do not use more pressure than to hold the wheel firmly.

Very few emerald crystals are found which are free enough of flaws to be suitable for gem stone cutting. Often the crystals when mined are coated with talc, but the hexagonal prism faces are apparent.

The opacity of emerald crystals may be traced to microscopical inclusions of dolomite, talc, rutile, liquids and gasses, the latter giving the appearance of "air bubbles." These inclusions point to talc-schist as the probable emerald matrix and the gem is deposited by pneumatolitic action, according to Victor Leinz, a writer on the subject.

MINERALOGY

Offers unlimited opportunity for rock collector or Uranium prospector. Make it your career or hobby. We train you at home. Diploma course. Send for Free Catalog.

MINERAL SCIENCE INSTITUTE

Desk 7 • 159 E. Ontario • Chicago 11

BLANK MOUNTINGS

for

AGATE JEWELRY

WHOLESALE

Rings — Ear Wires — Tie Chains
Cuff Links — Neck Chains
Bezel — Clevices — Shanks
Solder — Findings

Send stamp for price list No. 4

O. R. JUNKINS & SON

440 N.W. Beach St.
NEWPORT, OREGON

Covington LAPIDARY EQUIPMENT



	Heavy-Duty Sup.-Chgd.	Super Chgd.	Stand. Chgd.
6"	$	$ 9.90	$ 8.80
8"		12.65	11.50
10"		16.75	15.40
12"		24.50	20.40
14"	40.25	32.30	28.20
16"	44.00	35.90	31.90
18"	72.15	47.50	39.70
20"	85.70	57.10	43.80
24"	102.50	72.30	56.50
30"		138.30	
36"		206.85	

State Arbor Size
Sales Tax in California
Allow for Postage and Insurance

Covington Ball Bearing Grinder

and shields are furnished in 3 sizes and price ranges to suit your requirements. Water and grit proof.



COVINGTON 8" TRIM SAW



and motor are compact and do not splash. Save blades and clothing with this saw.

BUILD YOUR OWN LAP

and SAVE with a COVINGTON 12" or 16" Lap Kit. We furnish everything you need. Send for new free lapidary catalog.





COVINGTON Multi-Feature 16" Lapidary Unit Does everything

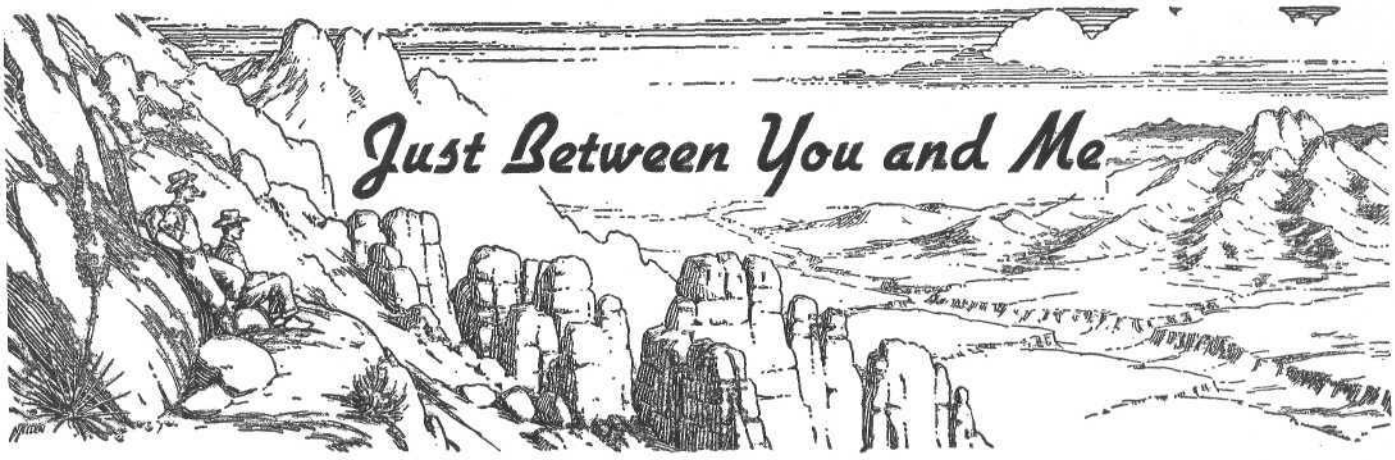
COVINGTON 12", 14" or 16" Power Feed Diamond Slab Saws

SAVE BLADES

USED BY THE U.S. GOVERNMENT
Send for New Catalog, IT'S FREE
DEALERS WANTED

Covington Lapidary Eng.

REDLANDS D, CALIFORNIA



Just Between You and Me

By RANDALL HENDERSON

IT HAS BEEN my privilege to spend many hours at various times in the villages and pueblos of Southwestern Indians — the Mojaves, Yumas, Apaches, Navajos, Hopis, Zunis, and Supais. I always come away from such visits impressed by the gentleness of these people in their home-life.

I found the same thing true among the black tribes of Africa and the untamed Arabs of the Sahara Desert. We call them heathens and it is true some of them have barbarous religious rites, and vicious methods of warfare. But among themselves, in the security of their own homes and settlements they are almost always soft-spoken and kindly.

It is a characteristic, I believe, which becomes habitual among people who live in close association with the natural world—folks directly dependent on the good earth for their food and shelter.

Our civilization has brought many artificial comforts and advantages which we value highly—but it also has brought an appalling variety of raucous noises which, according to medical authorities, are harmful to our nervous systems, whether we are conscious of it or not.

Perhaps after we have solved the problem of the litterbug and have restored the beauty of the roadside landscape, it will be time to see what can be done about tooting automobile horns, badly muffled exhausts, blatant radios, sonic blasts and the prattle of ill-tempered humans.

* * *

California and Arizona are engaged in a great legal duel over the waters of the Colorado River. I hope the side wins which can apply the water most economically to the service of the American citizen regardless of state boundaries.

According to the American concept of free enterprise, competition between states for the control of natural resources is quite proper. And that was all right in a period when population was sparse and there was water enough to meet the needs of everyone. But we are nearing the end of that era. Today, waste and loss in the distribution of water is a threat to the security of all of us. Even those who are not directly affected will sooner or later pay a penalty in the taxes that are levied for extravagant state and federal water projects. Parents in Ohio may find it a little more difficult to send their youngsters to college because of the excessive cost of water out here on the Great American Desert— costs that must be borne by the federal government because they are too high to be assessed against the land which is directly benefitted.

I have confidence that the supreme court eventually will settle the feud on this broad basis without regard for the state boundary lines involved.

* * *

It is gratifying to note that the State of Arizona is making plans to establish a Department of State Parks. With one National Park and 15 National Monuments within their boundaries Arizonans have never felt the need for a system of state parks. But the pressure of increasing population and more leisure hours—the trends of modern times—finally has aroused them to the need for more organized recreational facilities within their state.

Certainly no state in the union has more to offer in the way of scenic terrain than Arizona. The majesty of Grand Canyon already is well known, but within the state there are countless other places both in the high desert and low where the winter visitors will find a veritable Shangri-la if facilities are developed for their essential needs.

Florida and the coastal communities of California—long the mecca of the winter tourist—are losing some of their charm due to the congestion of traffic, air pollution and noise. But in Arizona and other desert areas of the Southwest, except in a few of the larger towns, there is still space and pure air and the unhurried tempo that are always a lure to those who take vacations for the rejuvenation of body and soul.

* * *

A reader of *Desert Magazine* writes to ask about one of the lost mine stories in a recent issue. "Was it fact or fiction?" he asked.

Sorry, but I do not know the answer. I have never yet heard of anyone finding one of those legendary lost mines—and yet the stories persist, and generally there is a bit of obvious truth in them.

I am certain of one thing—that hunting lost mines is a better rich man's hobby than poor man's livelihood.

But I hope those who can afford to do so will keep on looking for them. For the same reason that I hope mountain-climbing and wilderness exploration will always be popular pastimes. It is good for humans to get out of their artificial man-made environment occasionally and renew their acquaintance with the world that God created.

If a presidential candidate would come out with a pledge to initiate a compulsory CCC program for all teenage boys I think I would vote for him regardless of whether he was a Democrat or Republican.

BOOKS of the SOUTHWEST

THERE WAS DRAMA IN THE OLD WESTERN MINING CAMPS

For many years Nell Murbarger followed dim desert trails which led, more often than not, to deserted and crumbling rock and adobe walls, to ramshackle buildings, and to the skeletons of old mining hoists.

These were the derelicts of the mining camps which came to life in many places in the Great Basin region of Nevada, Utah and California during the last hundred years as hardy men with pick and shovel and pan found mineral treasure long buried beneath the surface of the earth.

These old buildings and mine dumps are interesting relics, but to such a reporter as Nell Murbarger it was not enough merely to camp overnight on a long deserted main street and take a few pictures of the ghostly wreckage of a town that was.

She wanted to know what had brought people to these remote and rocky hillsides and gulches. What prospector, and how did he discover the hidden wealth? Was it a bonanza —or a bust? How did people live and work in this arid land? Who reaped the wealth that came from the shaft or tunnel, and how much and what did they do with it?

Sudden wealth brings out the best in some humans, the worst in others. In every boom mining camp there was drama—the conflict of good and evil. And eventually the day came when the pocket of gold or the ledge of silver played out . . .

Being a thorough reporter, Nell Murbarger sought the answers to these questions — from the yellowed pages of old newspapers, from mining records at the court house, and in many instances from aged survivors or their descendants.

After she had written literally millions of words of notes and quotations, she undertook the huge task of compiling it as a permanent record in book form, published in August with the title, *Ghosts of the Glory Trail.*

Most of the material is from original sources, much of it published for the first time. It is a book that sparkles with human interest, for Nell Murbarger brings to her stage the saints and sinners, the heroes and villains—and the clowns—of those old mining camps as they lived 50 or 75 or 100 years ago.

This is a book that will perpetuate in vivid narrative one of the great epics in the history of the West.

Published by *Desert Magazine Press.* 328 pp. Directory, index, halftone photos and map. $5.75.

• • •

DESERT BIRDS DESCRIBED IN INTIMATE LANGUAGE

Birds of the Southwestern Desert is an unusual book—accurate, yet not primarily scientific, the author striving to teach the love of birds rather than the accumulation of mere bird knowledge.

The short word sketches of Gusse Thomas Smith are intimate—the kind of descriptions and anecdotes you would expect to hear in conversation with a friend who is filled with the knowledge and regard of birds. And as with all good conversationalists, she sticks to what she believes you would like to know about birds, rather than what an ornithologist might deem it necessary that you should know.

The sketches are limited to the most frequently seen birds in Arizona's Saguaroland, and in most cases the author adds a bit of frank opinion on each: she has no love for hawks, but they fascinate her; dwarf cowbirds are devoid of manners or morals; there is no bird whose loveliness grips the heart like the phainopepla; flycatchers are interesting, but beyond that they fail to arouse any yearning to know them more intimately; the most beautiful ground bird you'll ever see is the stately gambel quail; the killdeer dances in every feather—bursting with the joy of being alive, not trying to impress anybody.

The net result of this warm approach is a book on birds quite different from any presented to the reader in the past —and one worth having in your library.

With illustrations by Harriet Morton Holmes; published by Doubleshoe Publishers, Scottsdale, Arizona; 68 pages; $1.50.

Books reviewed on this page are available at Desert Crafts Shop, Palm Desert
Add three percent sales tax on orders to be sent to California

DESERT MAGAZINE PRESS
PROUDLY PRESENTS

the excitement, drama and color of the Great Basin's roaring mining camps of yesterday—miracle towns which lived their short lives at spectacular paces—peopled by adventurous men from the far corners of the world in whose wild eyes the desire for gold shone as brightly as the desert sun overhead . . .

NELL MURBARGER'S

GHOSTS
of the GLORY TRAIL

This work represents years of personal research by Miss Murbarger, a noted author of the Western scene. From first hand observations, interviews with old timers, faded newspapers and public and private records comes this long-needed chronicle of life in the boom camps. Desert Magazine's review of this book appears elsewhere on this page.

cloth binding • 24 pages of halftone photographs • guide for ghosttown hobbyists • ghosttown directories of Nevada, Eastern California and Western Utah • maps • index • attractive dust jacket

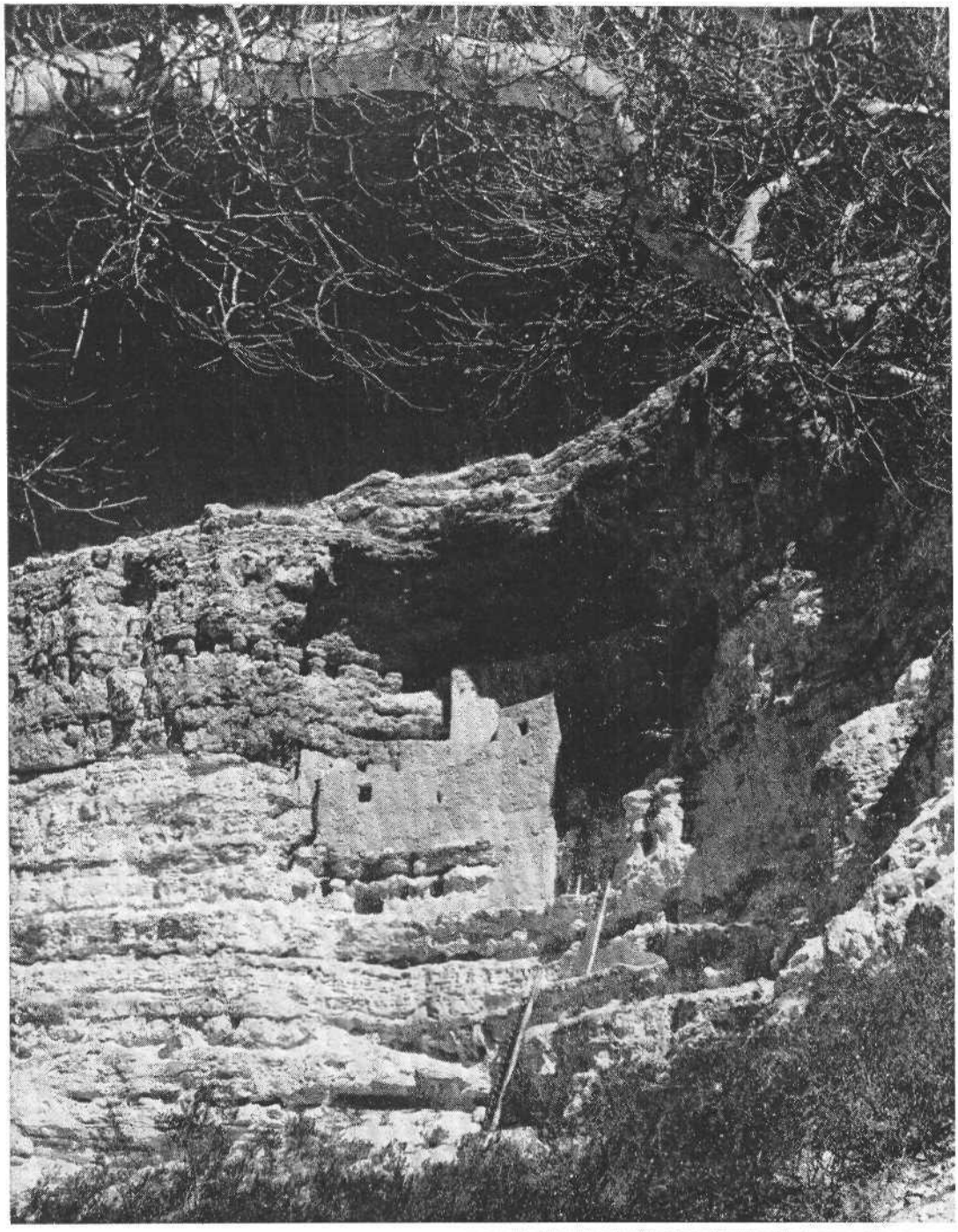
$5.75 postpaid

California buyers add 3% sales tax

Order today from

Desert Magazine Bookshop

PALM DESERT, CALIFORNIA



The Castle

Constructed in a great rock hollow, beneath shelving rim of shining white limestone cliffs bordering Beaver Creek in the Verde Valley of central Arizona, Montezuma Castle stands as a striking example of a well preserved cliff-dweller abode. Safe in this streamside eyrie from plundering marauders, its builders labored through several centuries to create a five-story gem of cliff-dweller architecture.



PUEBLO PANORAMAS VI

Montezuma Castle

By JOHN L. BLACKFORD

Beaver Creek . . .

From peephole and parapet, square window and curious low door, the early Indian inhabitants of Montezuma Castle had this splendid view of Beaver Creek, its silvery sycamores, and high ranges beyond. Here, beside a living stream, they enjoyed a vale of abundance such as few cliff and pueblo peoples knew. The five-storied structure was built up over a period of 325 years, from 1100 to about 1425 A.D.