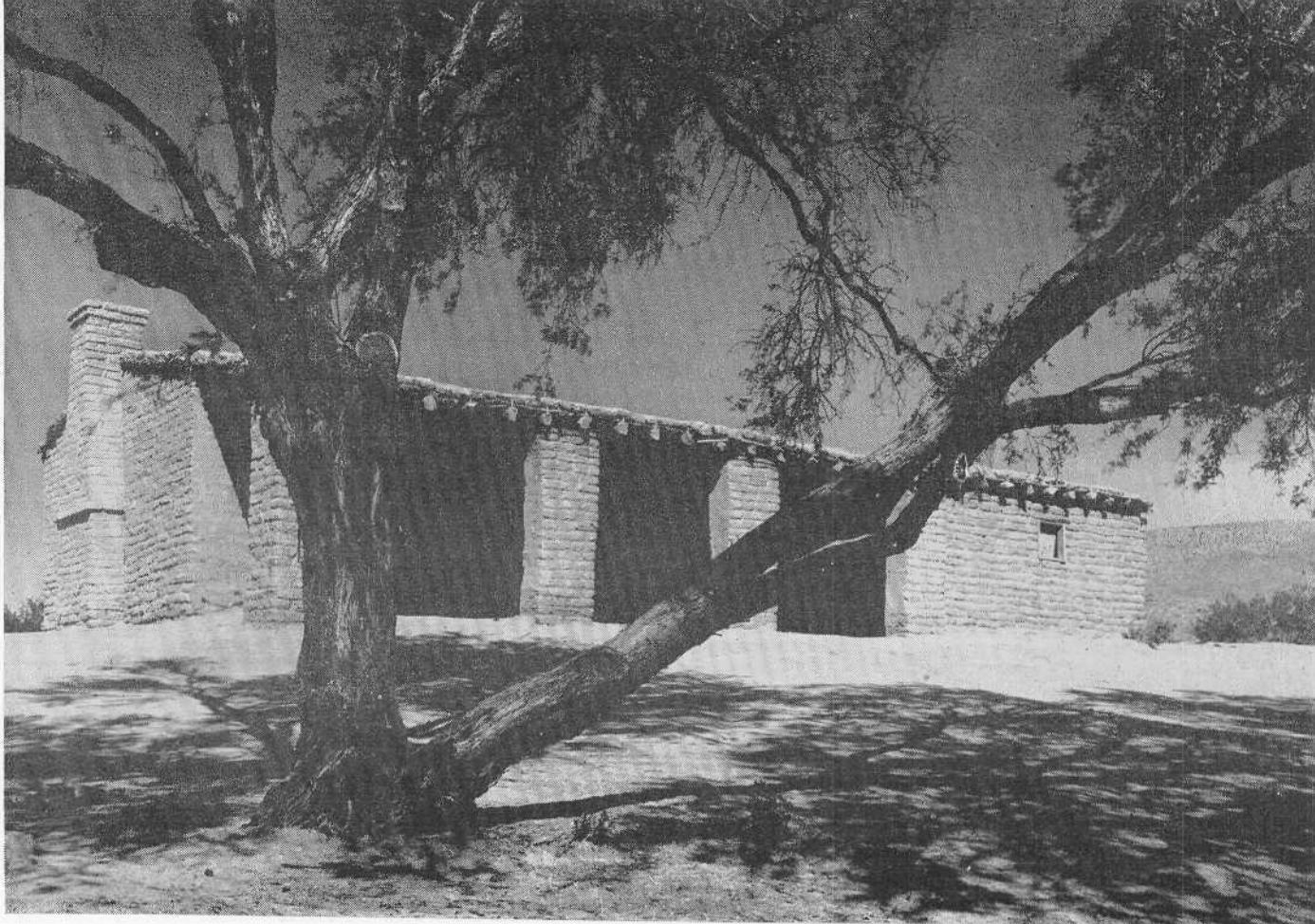


Desert

SEPTEMBER, 1957 . . . 35 Cents





The reconstructed Vallecito Stage Station, a California Historic site, as it appears today.

HISTORIC PANORAMAS VII

Vallecito Stage Station

By JOSEF and JOYCE MUENCH

In San Diego County, California, now off the main line of travel, stands this adobe building—the restored stage station where passengers on the old Butterfield Overland stage route once stopped for refreshments.

This is the Vallecito stage station, rebuilt according to its original design through the philanthropy of Dr. and Mrs. Louis Strahlmann of San Diego in 1935.

Originally this was on the route of Kearny's Army of

the West. The first wheeled vehicles to come this way were the wagons of Col. Philip St. George Cooke's Mormon Battalion in 1847. Two years later California-bound gold-seekers, after the long dusty trek across the desert from Yuma, found Vallecito a refreshing place for water and rest.

The old stage station is now reached by a very passable road maintained by the California State Park organization.



*The Old Overland Stage Station at Vallecitos
Before Its Restoration.*

DESERT CALENDAR

Aug. 30-Sept. 2 — Tri-County Fair, Bishop, California.
 Aug. 30-Sept. 2 — Annual Fiesta, Santa Fe.
 Aug. 30-Sept. 2—County Fair, Elko, Nevada.
 Aug. 31-Sept. 2 — Nevada Rodeo, Winnemucca.
 Aug. 31-Sept. 2 — Fallon, Nevada, Rodeo.
 Sept. 1—World's Championship Steer Roping Contest, Clovis, N. M.
 Sept. 1-2—Williams, Arizona, Rodeo.
 Sept. 1-2—Eureka, Nevada, Rodeo.
 Sept. 1-2—Kingman, Arizona, Rodeo.
 Sept. 2—St. Stephen's Day Fiesta and Dance, Acoma Pueblo, N. M.
 Sept. 5-8 — Antelope Valley Fair, Lancaster, California.
 Sept. 6-8—Arizona Game Protective Association Convention, Wickenburg.
 Sept. 6-8 — Uranium Days, Moab, Utah.
 Sept. 6-8 — Coconino County Fair, Flagstaff.
 Sept. 7-8—Socorro County Fair, Socorro, New Mexico.
 Sept. 7-8—Winslow, Arizona, Rodeo.
 Sept. 9-12—Metal Mining and Industrial Mineral Convention of the American Mining Congress, Salt Lake City.
 Sept. 12-14 — Dixie Roundup, St. George, Utah.
 Sept. 12-15—Quay County Fair, Tucumcari, New Mexico.
 Sept. 12-15 — Washoe County Fair, Reno.
 Sept. 13-14—Galena Days Celebration, Bingham, Utah.
 Sept. 13-14 — Otero County Fair, Alamogordo, New Mexico.
 Sept. 13-15 — Yavapai County Fair, Prescott, Arizona.
 Sept. 13-15 — Sierra County Fair, Truth or Consequences, N. M.
 Sept. 13-15—Valencia County Fair, Belen, New Mexico.
 Sept. 13-22—Utah State Fair, Salt Lake City.
 Sept. 14-15—Horse Show and Pony Express Race, Tonopah, Nevada.
 Sept. 14-15 — Mining Celebration, Randsburg, California.
 Sept. 15 — Ceremonial Dances and Races, Jicarilla Apache Indian Reservation, New Mexico.
 Sept. 18-21—Curry County Fair, Clovis, New Mexico.
 Sept. 19 — Fiesta and Ceremonial Dances, Laguna Pueblo, N. M.
 Sept. 19-20—San Juan County Fair, Farmington, New Mexico.
 Sept. 19-22 — Hidalgo County Fair, Lordsburg, New Mexico.
 Sept. 20-21—DeBaca and Guadalupe Bi-County Fair, Fort Sumner, N.M.
 Sept. 20-22 — Navajo Tribal Fair, Window Rock, Arizona.
 Sept. 21-22—Barstow, Calif., Rodeo.
 Sept. 23-27—Roosevelt County Fair and Rodeo, Portales, New Mexico.
 Sept. 26 — Jack's Carnival, Sparks, Nevada.
 Sept. 27-29 — Cochise County Fair, Douglas, Arizona.
 Sept. 28-30 — Mohave County Fair, Kingman, Arizona.
 Sept. 28-Oct. 6—New Mexico State Fair, Albuquerque.
 Sept. 29-30—Fiesta of San Geronimo on 29th, Sun Down Dance on 30th, Taos Pueblo, New Mexico.



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SEPTEMBER, 1957

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We Prefer to Camp at Dripping Springs

By NELL MURBARGER
Photographs by the author
Map by Norton Allen

FROM THE first night we camped in Organ Pipe Cactus National Monument in southwestern Arizona, we knew we'd found something extra special. What that something is, we can't quite put a finger on—but after 10 years and at least that many return visits, the Organ Pipe still is our favorite desert retreat.

Ordinarily, Dad, Mom and I do not camp in National parks and monuments. Most are too congested and

civilized for desert rats like us—we would rather camp in the open where the only rules are those prescribed by common decency. The Organ Pipe, however, is so natural and just plain big that it never gives us a feeling of constriction nor of being a "park."

Fourth largest of our national monuments, its 516 square miles—nearly a third of a million acres—are almost lost in the surrounding desert immensity. Organ Pipe's entire eastern bound-

Far from men's busy cities and close to the sun, sky and life-filled earth is matchless Organ Pipe Cactus National Monument. On these pages, as seen through the eyes of Nell Murbarger, is the story of this spacious wonderland on the Arizona-Mexico border.

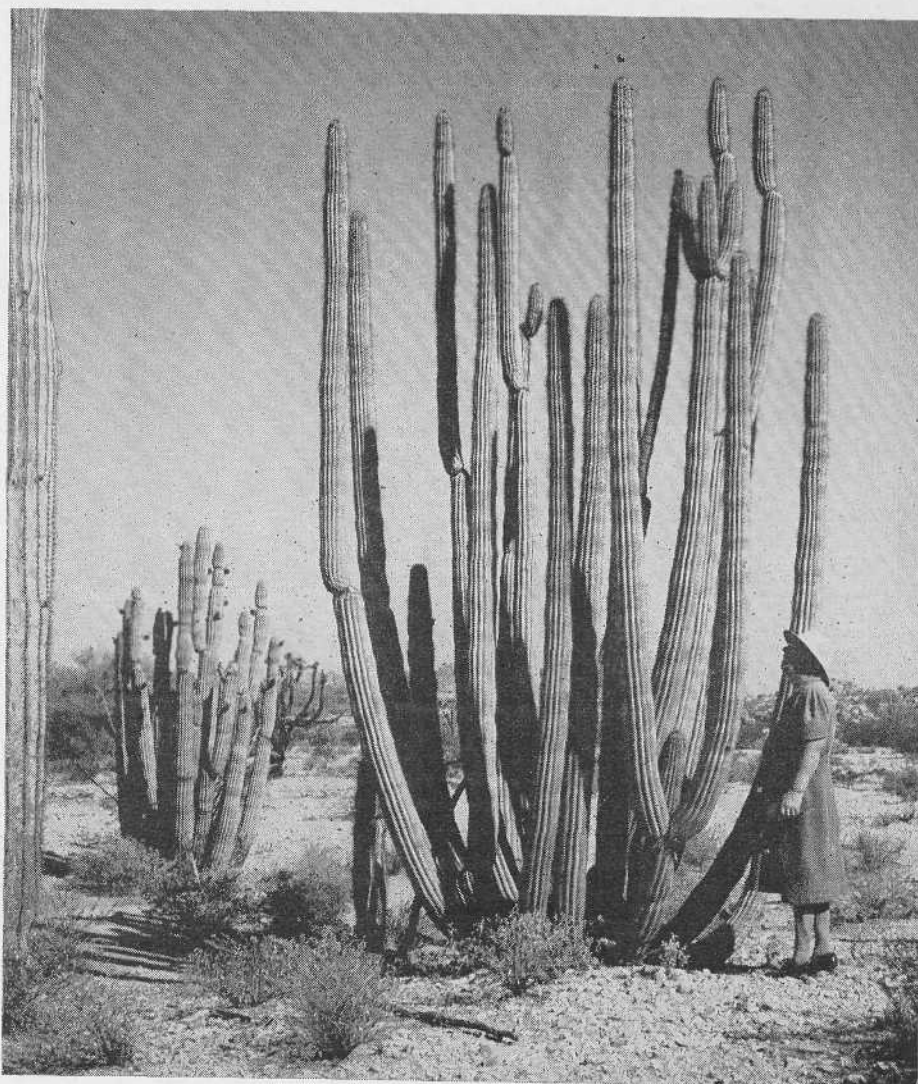
dary abuts on the Papago Indian Reservation—a desert tract two-and-a-half times larger than Delaware, but with only two small post offices, Sells and Topawa. To the west lies more than 3000 square miles of desert without any post offices, and beyond the Monument's southern boundary is the most sparsely populated sector of Old Mexico.

It is this wild land south of the border that is the Organ Pipe's natural mother—even its climate being imported from the coastal jungles of Sinaloa, 700 miles to the south. After traveling northward over the Gulf of California, the tropical air follows the Sonoyta River valley to the heart of the Organ Pipe where it is halted by high encircling mountains. Because of this coastal warmth, the lower valleys of this region between the Ajo and Growler ranges embrace what probably is the finest tract of Sonoran desert north of Mexico and support many sub-tropical plants not commonly found in Arizona and not at all in other sections of the United States. Among these is the spectacular organ pipe cactus—*Cereus thurberi*—whose name the Monument bears. It was not to protect this single species, however, but to assure preservation of this remarkable desert as a whole that the area was set aside as a national monument by President Roosevelt on April 13, 1937.

Shortly thereafter, when roads in the area still were bad, no improved campgrounds had yet been constructed and only sources of drinking water were inaccessible to auto-borne travelers, Dad, Mom and I began making annual pilgrimages to the Organ Pipe. Our visits, over the years, have fallen in every season, and while all have been good—never too chilly for comfort nor too warm for endurance—the best trips were made in the spring and fall.

Typical of our spring jaunts was the one made last year. It wasn't a planned trip. Dad and Mom were spading the garden and I was preparing to leave for Nevada for the summer, when the realization came to us that April was

The author's mother inspects a giant organ pipe cactus.



almost gone. Then came the thought that we would like to be camped at Dripping Springs in the Organ Pipe when the first warm flush of May came stealing over the hills from Sonora.

Two days later we were on our way.

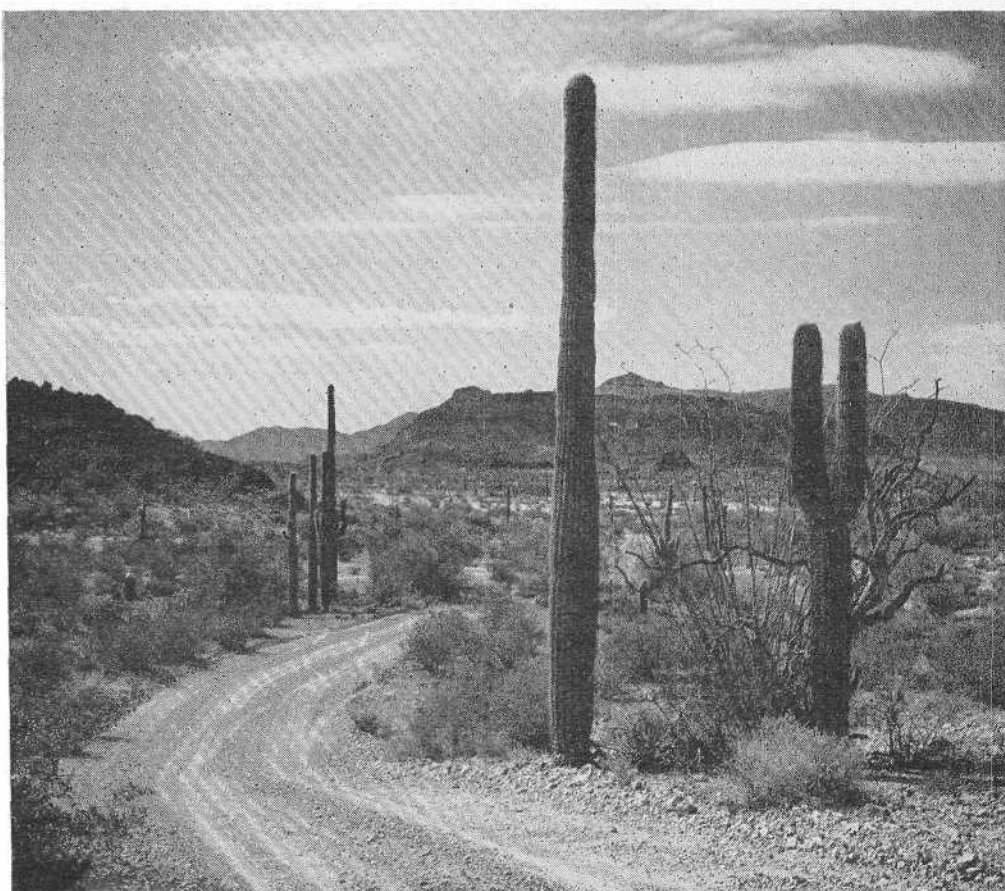
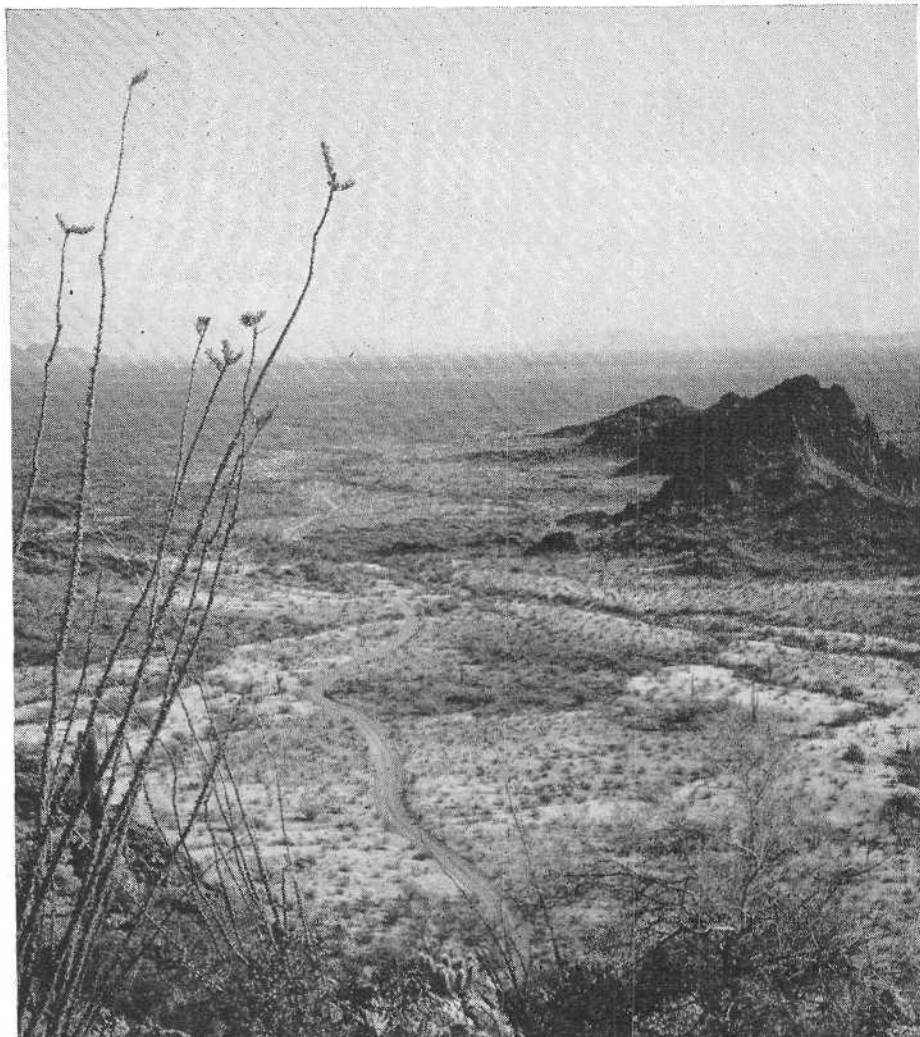
From our Southern California home it is less than 500 miles to the Monument. After traveling to Gila Bend on U.S. Highway 80, we turned south on State Route 85 and drove 42 miles through the Sauceda and Crater ranges to Ajo. From this busy little copper mining town it is 17 miles to the north entrance of the park and another 18 to headquarters, where we found the Monument in the midst of its busiest season. The big free campground, a mile from headquarters, was filled almost to overflowing with campers—trailer travelers outnumbering tenters 10-to-one.

James Eden, Monument superintendent, told us that later in the summer the campground would be expanded to 100 sites. While the average stay for campers in the Monument is only five or six days, about five percent of those coming here remain the full 30 days allowed, and some have been returning every winter for 10 years. Monument campgrounds are occupied about 12,000 camper-days each year.

Although folks in the main campground seem always to be having a lot of fun, our family prefers the greater seclusion and quiet of Dripping Springs.

Barred to trailers, but wholly traversible by ordinary family car, the dirt road that leads to the springs sneaks off into the desert from behind the buildings at headquarters. After skirting the Puerto Blanco hills and the dark Growlers, it meanders across the saguaro-grown plains of La Abra Valley, looks in on the old Papago watering place of Quitobaquito, hugs the Mexican border for a dozen miles, rounds Senita Pass, and after 42 miles of wandering, bends back to a point a couple of miles south of where it started. Twelve miles up this wayward loop we turned off the main trail, slipped around a hill and pulled down into the clean dry pocket of Dripping Springs campground.

It was early in the afternoon and the little cove was bathed in sleepy warmth. Marching away from the basin on every side were giant cactuses, and under this forest was spread a living robe of wild flowers. Tall ocotillos—each slender wand tipped with



Land of the organ pipe. Top view is from Dripping Springs. Road in photograph is the same as shown in close-up photo below.

a scarlet plume—feathered the skyline, and the palo verde under which we made camp was so weighted with bloom that it looked like a golden waterfall. Except for ourselves and the birds and other small creatures of the wild, the little cove was untenanted.

In the spattered shade of the palo verde we spent enjoyable moments spying on a mother quail and her 10 babies, fed cookies to a couple of ground squirrels, counted 31 species of wildflowers without leaving our campyard, studied an Arizona cardinal through the binoculars and played with a horned toad. By and by, Dad built a small twig fire and Mom cooked supper. Then we watched the sun set

behind the Growlers, and as we sat in the soft twilight, waiting for the full moon to rise, a pair of gray kit foxes came tip-toeing out of the dark to sniff curiously around our sleeping bags.

Night time is the grandest time of all on the desert to Dad, Mom and me, particularly in the Organ Pipe. But the days are wonderful too, and sunrise found us up and on our way. Our destination was Dripping Springs proper — the campground that bears this name having been established about a mile from the seep to minimize human interference with the wild creatures that must have this water to maintain life.

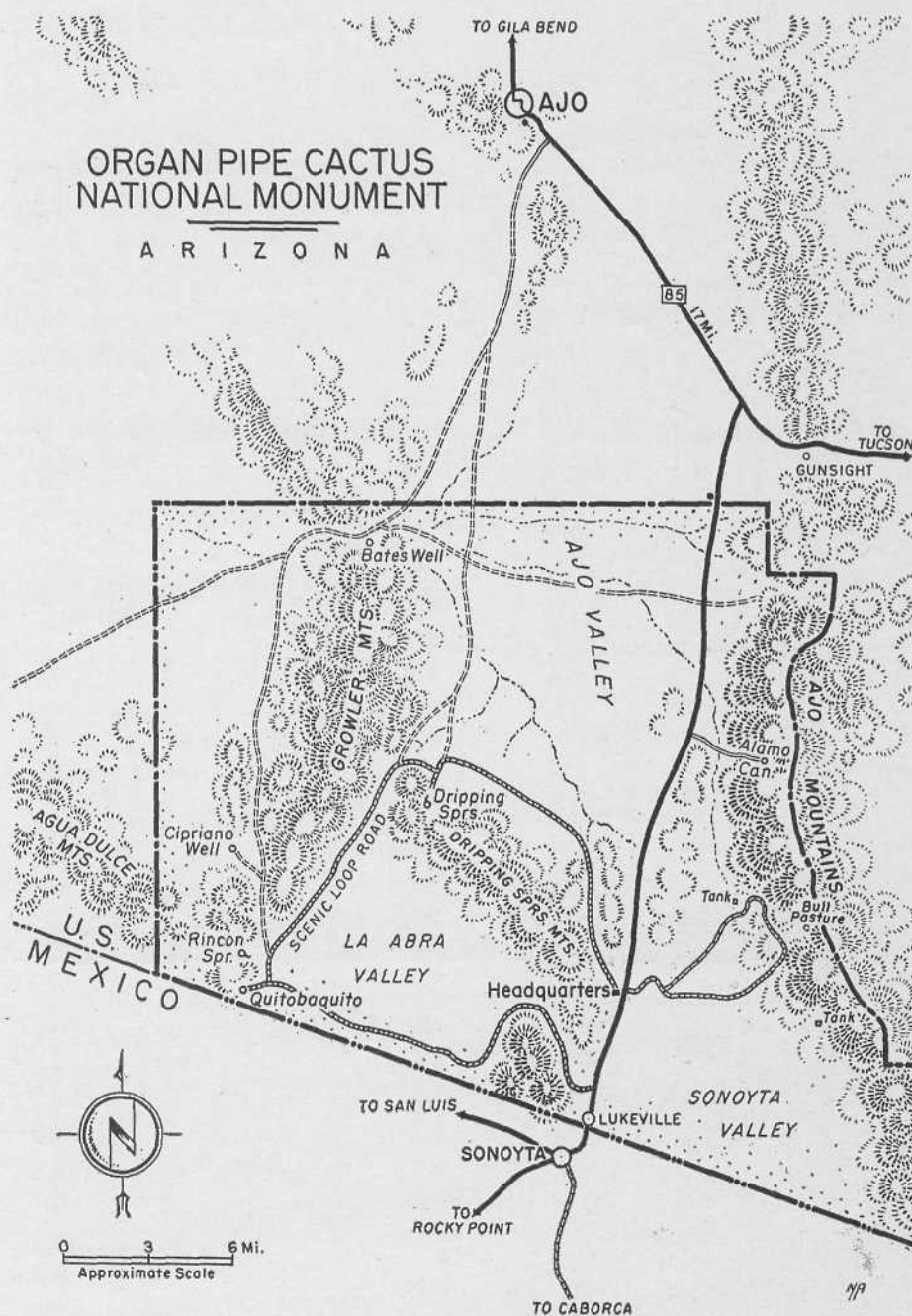
In a land as dry as this, any source of water is more cherished than gold.

With its annual rainfall varying from three to 11 inches, and averaging less than eight—and with no snow falling except on its higher peaks—the Monument's 328,162 acres support not one permanent stream, only one fair sized spring, and several small seeps including Dripping Springs.

Issuing from a volcanic cliff that would delight the hearts of all rock garden fanciers, the water of these springs collects in a natural rock basin in the floor of a shallow cave. Only a meager trickle, even in winter, the overflow of this basin is reduced to a steady drip in May, and by midsummer it is hard-pressed even to hold its own. But scant though it is, almost every day in the year finds thousands of wild bees humming around the mouth of the cave and sipping water from the surface of moist rocks and the pool. In the damp earth below the rock tank are impressed the hooves of deer and javalinas, the tracks of wildcats, skunks, desert mice, quail and Arizona white-wing doves. Beneath the jungle of velvet mesquite that shades the lower canyon grows a lush thatch of moisture-loving plants—miner's lettuce, mimulus and maidenhair ferns.

Leading from the spring is a narrow trail that switchbacks up the cliffside to a lookout point from which it is possible to see across the desert for many miles in every direction. Climbing this trail is one of our yearly rituals, and we find something new along it every time. Our latest discovery was the pencil-thin gray-green stem of a night-blooming cereus. It probably was *C. greggii*, but even the extremely rare *C. diguetii* is found sparingly in the Monument, and for an amateur botanist such as myself to distinguish between these two species by examining only the stems is impossible. May, of course, is too early in the year for either species to be in flower, but we promised ourselves to return here in July to see that dried little stem transformed into its full glory as *La Reina del Noche*—Queen of the Night.

Later, while prowling over this same hillside, Mom discovered a cave which appeared once to have been the home of prehistoric Indians. Not only was its interior blackened by smoke, but near the entrance we found a shard of rough brown pottery and hollowed into a smooth rock nearby was a perfect *mortero*. Working with stone pestle and Indian patience, these long-ago dwellers of the Organ Pipe had ground in that primitive gristmill the components of their porridge and bread—the dried meat of animals and birds, seeds of the mesquites that likely were growing, even then, in the moist earth below





Quitobaquito Spring in Organ Pipe Cactus National Monument near the Arizona-Mexico border. Indians have lived near this waterhole for centuries.

Dripping Springs, and, certainly, fruits of the saguaro and other cactuses. Even now over that hillside, the wide pads of Engelmann's prickly pear were breaking into golden saucers of bloom, and nearly every branch tip of every saguaro soon would be dressed in coronets and wristbands of waxy white flowers.

After another perfect night at Dripping Springs, where camping is limited to two nights, we wandered down our wayward road. We were not in a hurry for the day was young, the world was big and wonderful—and if we wanted to stop half a dozen times in a single mile, we stopped! We photographed the delicate chartreuse blooms of the teddy-bear chollas, the bright russet of the staghorn, and the flaming torches of ocotillos. While crossing a wash wooded with giant palo verdes and ironwoods, we stopped

to look for birds and soon tallied 20 of the 219 species that naturalists have reported from the Monument. At the same time, we found some Mexican jumping bean bushes — another rare emigrant from the warm lands south of the border.

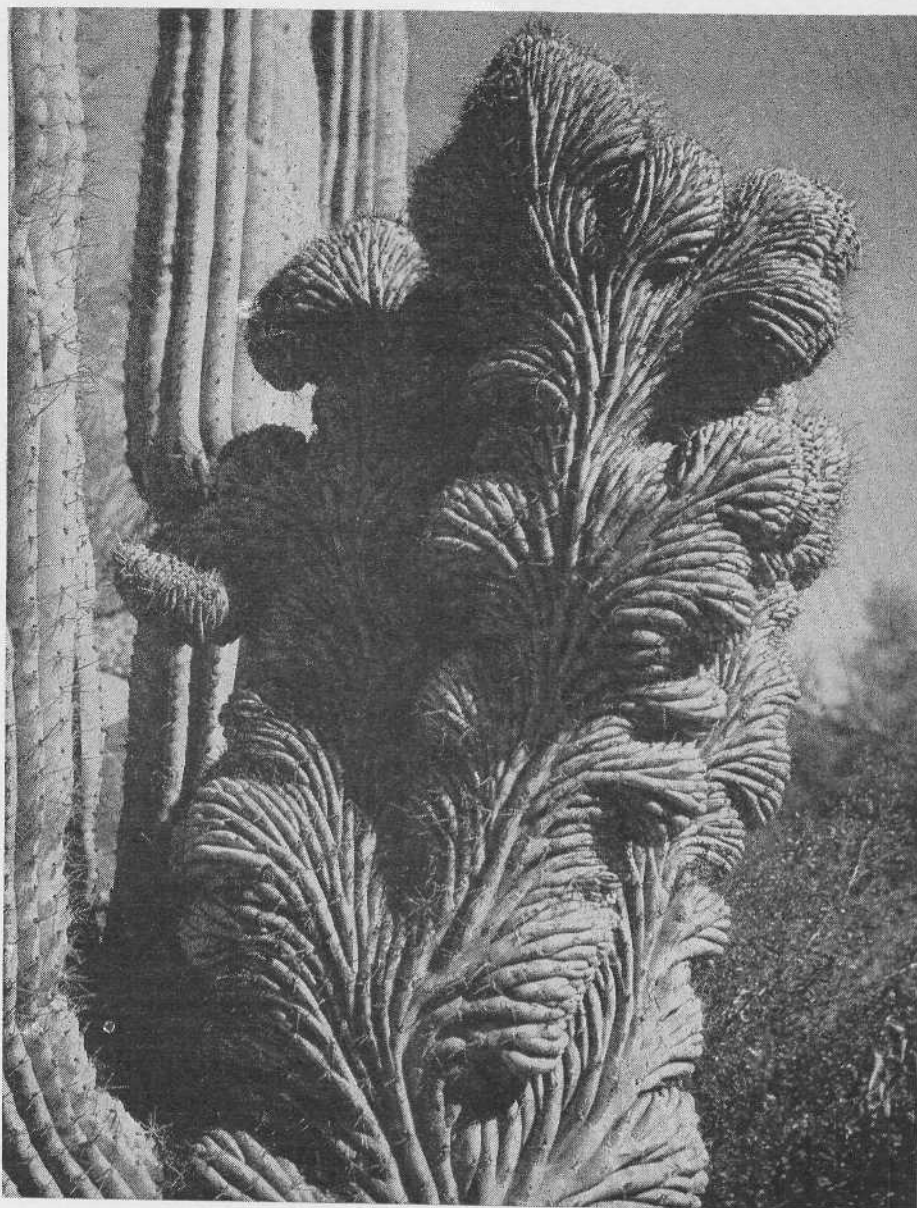
After taking five hours to travel only 15 miles, it was noon when we arrived at Quitobaquito.

We like this place—not because it is the largest and finest spring in the Monument, with a flow of almost five gallons a minute—but because it is pleasant, on a drowsy afternoon, to sit in the heavy shade of the big cottonwoods that grow all around the spring, their furrowed gray trunks leaning far out over the water as if to peer at their own reflections. We like to listen to the south wind whispering through their leaves, and to the noisy clamoring of the redwing blackbirds that nest

in the tules, and the killdeer that occupy the low flats nearby. We like to roll the name, *Kee-toe-bah-kee-toe*, over our tongues, savoring each syllable, each soft inflection. But, most of all, we like to sit and daydream of the history this place has seen.

How long Quitobaquito has been the habitat of man no one knows. As long as there have been deserts, oases have been popular and no doubt Indians have claimed Quitobaquito through all the centuries that its water has pulsed from the earth.

Certainly, the Indian camp on its banks was well populated when Diaz passed on his way to the Colorado River 417 years ago. The sandaled feet of Fathers Kino and Garces pressed the damp earth along these banks, and about the time the American Declaration of Independence was being signed, the big spring joyfully



Rare cristate growth on an organ pipe cactus.

was hailed by Juan Bautista de Anza and his weary entourage returning to Tubac after the founding of San Francisco. Three generations later the hazardous route from Sonoyta to Yuma was lined with the graves of Dixie Argonauts bound for the chimerical El Dorado of California's goldfields. With bones of their companions and animals whitening in windrows beside the way, survivors of that horrible 125 mile Death March related the grim story of *El Camino del Diablo*—the devil's highway over shifting sand, trackless malapai and heat-lashed desert plains, with the only living water in all that distance this cottonwood-shaded pool at Quitobaquito.

Throughout these changing centuries there has dwelt upon the shores of this spring a colony of Indians which today is shriveled almost to a ghost town, Jim Orosco and his wife, Maria, its only remaining members.

The Orosco live in a cluster of small brown huts at the north edge of the pool. We have never seen Maria, but Jim looks, dresses and acts like other Indians of the border country. He is a doleful fellow who never has much to say, not to me anyway, and he never has permitted me to take his picture or one of his house.

These last residents of Quitobaquito, according to Alton Netherlin of Ajo, who has made an extensive study of the Papagos, belong to the tribal division known as Sand Papagos. Originally this clan lived in the dunes along the Gulf of California where they were so troublesome the Mexican authorities marched them off to Caborca for internment. Whether they escaped or were released is not clear, but they made their way north into Arizona. Today only a very few members of the clan still are living.

Neither national monuments or in-

ternational boundaries matter much to Jim Orosco. Although he and his wife legally are residents of Arizona, the Mexican line is only a biscuit toss south of Quitobaquito and Jim's pocket-sized fields of grain, corn and squash are across the line in Sonora where they are gravity-irrigated by water from the big spring.

In addition to serving the needs of Jim and Maria and providing a nesting site for redwinged blackbirds and killdeer, Quitobaquito also is home to the only species of fish found in the Monument. *Cyprinodon macularius* is only a small fish, but according to Robert R. Miller, associate curator of fishes at the University of Michigan, it is an Ice Age relic. A hundred years ago, this minnow species also was found in streams near Tucson and Benson, Arizona, but advance of civilization has caused its disappearance there. Besides Quitobaquito, scientists believe the species survives in the United States only in one other spring near the Santa Rita Mountains.

From Quitobaquito it is about a dozen miles back to headquarters. For most of that distance the monument loop road hovers close to the Mexican boundary and it is possible to look across the dividing fence and see trucks and buses traveling on the Sonoyta-Mexicali highway. It is along this portion of the loop that the first senitas of the trip make their appearance. Like the saguaros and organ pipes with which they are associated, the senita or whisker cactus also is a *cereus*—*C. schottii*—and like most members of that clan, its white blossoms open at night and die in the light of morning. Of bunched growth like the organ pipe, but smaller—seldom more than eight feet in height—*C. schottii* is distinguished by the long shaggy white spines that envelope the upper third of each branch in the older plants. The fact that these spines bear a fancied resemblance to the white hair and beard of an old man is responsible for the plant's Mexican name, senita.

Although the organ pipe is rare enough to have our fourth largest national monument named in its honor, probably there are in the United States 100 plants of this species for every one of senita. So far as is known, the latter is not found anywhere in this country except in the Monument. An estimated 500 adult senitas, 300 in the Senita Pass vicinity alone, grow here.

Reached by a one-track trail leading north from the loop road, the Senita Pass jaunt is one of our favorite Monument drives. It is a slow road, but it travels through some of the finest arboreal desert in the Southwest. This also is a region of former mining

activity. Copper ore taken from these mines by early Spanish and Mexican miners and, later, by Americans, was ox and mule-freighted over the hazardous Camino del Diablo to the Gulf of California, loaded on sailing vessels and shipped around Cape Horn to smelters in Wales — half-way around the world. Although still open to mining, the Monument has no patented claims and, so far as is known, none of the mines within its boundaries ever made money for their owners. One time Jim Eden asked a man in Ajo why this was so.

"Was it a case of the workings being flooded by too much water?" he asked.

The man grinned. "Too much water was one reason," he said. "But the main reason was not enough ore . . ."

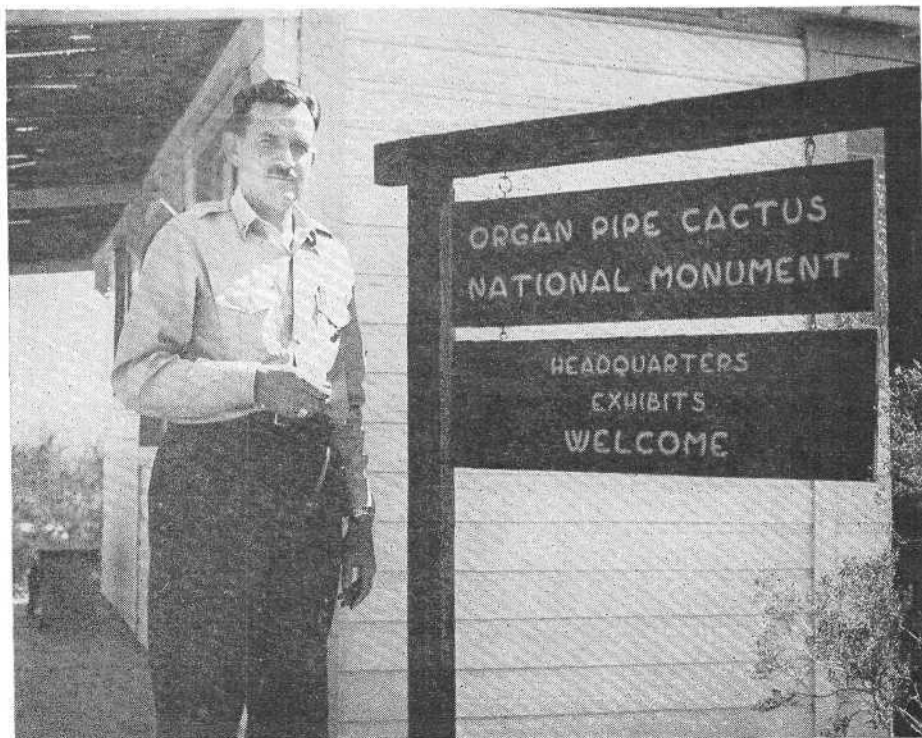
From the point where the loop road rejoins the main highway it is only a couple of miles to Lukeville, on the Mexican border. In addition to U.S. Immigration offices, Lukeville has a gasoline station, cafe, grocery store that is not always operating, and a few dwellings. Immediately across the line is the little Sonora border town of Sonoyta, where fat brown babies play in the yards and shaggy burros drowse in the sun beside crumbling adobe walls. Although Sonoyta isn't much larger than Lukeville, it is much older — and much more interesting.

In *Favores Celestials*, Father Kino describes in detail the founding of a mission at this place on October 7, 1698. That the settlement, even then,

had been occupied by farmer-Indians for unknown years is indicated by Kino, who termed it: "a post very

suitable for a great settlement because it has good pastures and rich lands, with irrigation ditches and with water."

James Eden, superintendent of Organ Pipe Monument, stands on the porch of the headquarters building.



Some of the estimated 500 adult senita cacti growing in the monument.

Having established the new mission at Sonoyta, Father Kino returned to his headquarters at Nuestra Senora de Los Dolores, 60 miles southeast of the present border town of Nogales. In February, 1699, he came back to Sonoyta with Father Adamo Gilg and Lt. Juan Mateo Manje, and established a new ranch with 36 head of cattle brought from Los Dolores. Of the new mission at Sonoyta, which he had named San Marcelo del Sonoydag, Kino wrote:

"This post and rancheria of San Marcelo is the best there is on this coast. It has fertile land, with irrigation ditches for good crops, water which runs all the year, good pasture for cattle, and everything necessary for a good settlement . . ."

On April 4, 1701, a dozen beams were cut for the new church of Nuestra Senora de Loreto de San Marcelo, an altar was made, and the first Mass said on the next day following. It is Jim Eden's understanding that the Sonoyta mission never had a resident priest. Today, after 250 years of exposure to wind, weather, cattle, treasure hunters and curio seekers, all that remains of

Kino's old mission is a low adobe mound, overgrown by weeds and grass.

The fact that the Monument borders for 30-odd miles on a foreign country does not occasion any particular difficulties, said Jim. In the earlier days of border bandits and organized raids by cattle rustlers, an old Spanish smuggling trail crossed the Dripping Springs Mountains through a pass known as Puerto Blanco—The White Pass. According to border country gossip, this old trail still sees occasional use by smugglers of narcotics and other contraband. When I asked Jim about this, he admitted that there is a possibility, of course, that the old smuggler trail still is being used, but said that he and his handful of jeep-mounted patrolmen never have encountered any evidence of that fact.

"We pick up a wetback now and then," he said, "an average of about two a month. We take them down to Lukeville and turn them over to the Immigration officers. Whatever action is taken against them is by that department—not by us."

Jim Eden came to the Organ Pipe in August, 1954. Prior to that time he served on the staffs at Carlsbad Caverns and Grand Canyon National Parks and Bandelier National Monument. Although geographic and scenic disparities between these parks and the Organ Pipe are great, Jim has found the difference in visitors to be almost as pronounced.

"Visitors here exhibit a more leisurely attitude," he said. "Unlike Grand Canyon and Bandelier, we get practically no weekend picnickers in the Organ Pipe because we are so far from large population centers. It is 150 miles to Phoenix and Tucson—and a 300 mile round trip is farther than the average person cares to drive for a picnic!"

Several years ago a movement was begun to convert Organ Pipe from national monument status to that of a national park—complete with a million dollar development program. Proponents of the altered status contended that through such action the area would be afforded more secure protection.

When considerable opposition developed both within the state and in Congress, the proposal was permitted to die a natural death.

Personally, I don't care to see a "million dollar development program" in the Organ Pipe. We prefer it the way it is. It doesn't matter to us that the only lodging accommodations it offers are a couple of campgrounds; or that roads, other than the main one, are not paved; or that it affords no guided nature walks or campfire programs. We are quite willing to leave these features to the big flossy parks, like Grand Canyon and Yellowstone.

All we ask of the Organ Pipe is that the drowsy calm of Dripping Springs be waiting for us whenever it is our privilege to return; that the giant cactuses still be marching up the slope toward Senita Pass; and that the south wind that steals over the hills from Sonora continue to whisper through the big cottonwoods at Quitobaquito.

So long as these remain, the Organ Pipe will rank high on our roster of desert retreats.

THE *Desert* MAGAZINE CLOSE-UPS

Mrs. John Plummer, who wrote "Our Camp Visitor Was a Crafty Little Fox" in this month's *Desert*, reports that she has no trouble making friends with animate things. As a devout lover of the outdoors she makes as frequent use of this gift as possible.

A native of Minnesota, Mrs. Plummer was five years old when her parents took a homestead in northern Wyoming. "It was here I learned to love the desert while herding my father's sheep," she writes. Fourteen years later the family moved to Southern California. Today, Mrs. Plummer and her husband live in Milo, Oregon, where he makes his living as a plumber. Their children all are married and have left home.

* * *

This month's cover photographer is 18-year-old Sharon Proctor of Phoenix, Arizona, valedictorian of her recently graduated North Phoenix High School class. While in school she studied both art and science and won awards in each field. A year ago she combined these interests to photograph some of the animals native to the desert—and the gila monster photo on the cover is an example of her excellent work.

Rosella Mattmueller, author of "Painted Dolls of the Hopi Tribesmen" in this month's *Desert*, was founder and first president of the San Bernardino, California, Branch of the American Pen Women.

At her lovely home, Hilltop, in that city, she leads a busy life as wife, mother of three and grandmother of two; and is editor and publisher of the *Del Rosa News*. Mrs. Mattmueller has lectured on feature writing before college classes and spends much of her free time writing, for which she has received wide notice and many awards.

* * *

Interest in the Heard Museum comes naturally to Isabel McCord Stroud, author of this month's feature on the Museum, "Southwest Treasure House." Mrs. Stroud has traveled extensively all over the world and has visited most of the places represented by displays at Heard.

She lives in Phoenix with her husband and young son and is a teacher in the Phoenix Union High School system. Mrs. Stroud is a native of Long Island and a graduate of Skidmore College with a master's degree in education from Columbia University. For a number of years she worked in the Travel Department of the American Express Company during which she wrote many articles on travel. She has lived in Phoenix for the past 14 years.

* * *

Dr. Edmund C. Jaeger, whose nature articles appear regularly in *Desert Magazine*, recently conducted a field

trip in the Joshua Tree National Monument for 35 teachers of the Summer Institute of Biological Sciences at the Claremont Colleges. Jaeger said the teachers participating in the institute had come from all sections of the nation and the outing was the first opportunity for some of them to study the biology of the desert.

* * *

"I loved the desert from the moment I first laid eyes on it on September 1, 1928," writes Dr. Ernest R. Tinkham, author of this month's "I Was Bitten by a Gila Monster." Almost immediately after that first meeting, Dr. Tinkham formulated plans to study the Texas desert and with the years these plans have greatly expanded. As a desert naturalist he has resided in Presidio, Texas; Phoenix, Tucson and Benson, Arizona; and since 1948 in Indio, California.

Immediately following over four year's army service, Dr. Tinkham held a Guggenheim Fellowship which assisted him in his desert studies. He has explored little-known deserts in northeastern Mexico and Baja California and has gained an intimate knowledge of the plant and animal life of 15 North American desert regions. At present he is preparing a book to be called *Life of the North American Deserts*.

As for Poncho, the gila monster who bit Dr. Tinkham in 1948, he became a full-grown adult by 1951 and is now in the 10th or 11th year of his life.

I Was Bitten By A Gila Monster ...

By DR. ERNEST R. TINKHAM

MY ACQUAINTANCE with Poncho began in 1948 when I was doing research for a book I was writing. One day I stopped in a shop in Old Tucson. On the porch was a cage containing five adult gila monsters and one young one.

The baby gila monster interested me greatly for it was the first I had known. They are so rare that many herpetologists have never seen one alive. I told the people in the store of my scientific interest in the baby, and what was my surprise when they said I could have him. He was too small for the larger monsters in the cage, they explained. The baby was more dead than alive from the trappings they gave him.

"His name is Poncho," said the shop keeper as I re-entered my car.

I took Poncho home and gave him a good scrubbing. He was eight and a half inches long from snout to tip of his tail, and his head was seven-eighths of an inch across. I estimated his age at 11 to 12 months, perhaps it was more. At first he would not eat, but after a few weeks he began eating some raw egg. Then he started to gain a little strength and it appeared that he would live.

On July 6 of that year, while my wife was visiting relatives in the mid-west, two little neighbor boys came over to my home to see my live specimens. I led them into the living room where the lizards were sunning in a box by the window. The gila monster was in a cardboard box in another part of the room.

As I turned to take the boys out, I noticed Poncho. His black ugly muzzle was raised straight up into the air and the fore part of his body was elevated on erect front legs. I knew he was disturbed, for a calm gila monster lies closely appressed to the surface on which he is resting. Perhaps the 111-degree Fahrenheit day was making him uncomfortable, I thought.

I walked over to his box and quickly seized him just back of the head with my right hand, thinking I would do him a favor by putting him under the paper in the bottom of his box where he liked to hide. As the fingers of my left hand pulled back the corner

of the paper and my right, holding Poncho, went forward, quick as a flash he clamped onto the knuckle of my left index finger!

"How could this happen to me?" flashed in my mind. I had always considered myself a careful scientist.

I held Poncho tightly in my right hand but could not free my knuckle from his vise-like grip. I dared not let go for I thought the instant I did he would gain a better hold and thus bring into play the back teeth through which his venom flowed.

For its size, probably no creature can equal the power a gila monster has in its bulldog-like jaws. Two men are required to pry open the jaws of

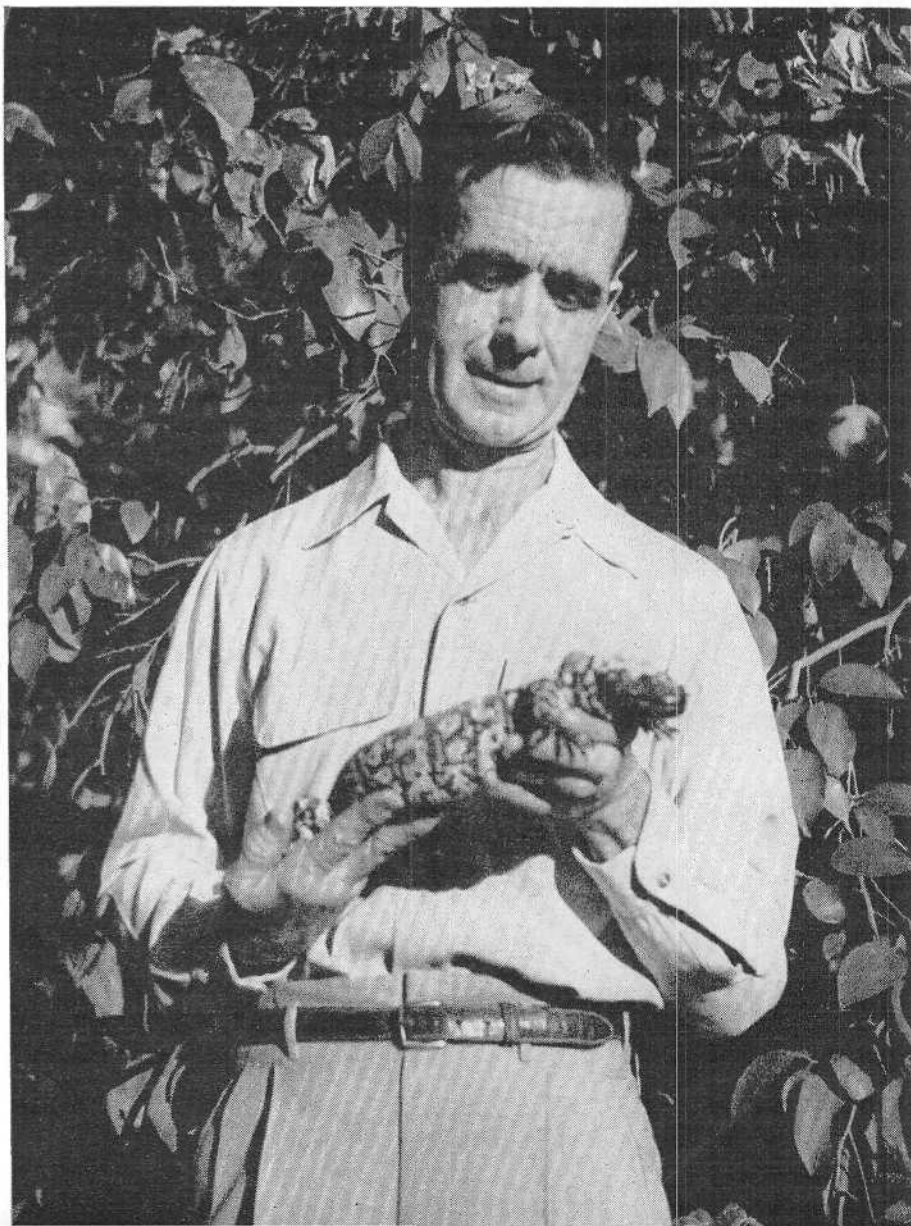
Victims do not always survive the bite of the gila monster—the only venomous lizard found on the deserts of the Southwest. Here is the story of a scientist who was bitten, and lived to write the story of his experience.

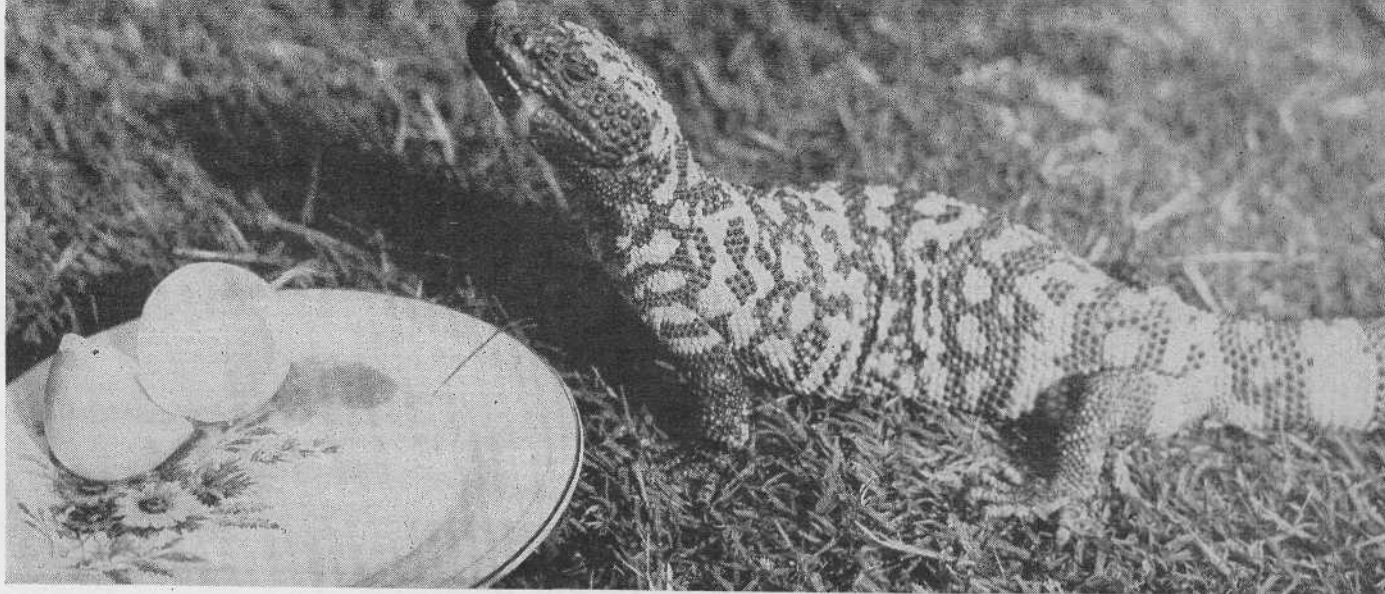
an adult reptile and even a baby possesses surprising power.

I remained calm and was unworried for I was certain Poncho only had me by his front teeth. I watched him carefully as I held his body taut. I kept my left hand higher than my right to prevent venom from flowing forward along the ridge of his jaw from the back teeth. After some seconds I perceived a very slight movement in the outer swollen portions of his lower jaw which held the poison glands. I thought he was trying to get a better grip and when the movement occurred again, I jerked my hand free. I estimated that the bite had lasted from 12 to 15 seconds.

Immediately I began sucking hard

The author holds a large gila monster.





Gila monsters are fond of raw eggs. This adult is 19 inches long.

on the wound and spat out the contents. I thought I tasted venom. As I washed the wound under the kitchen tap, I noted that it was bleeding slightly but swelling had begun almost immediately and the bite area took on a bluish cast.

I went to the refrigerator to get some ice cubes for an ice-water bath so I could apply the same type cryotherapy treatment recommended by Dr. Herbert L. Stahnke of Tempe, Arizona, for venomous bites. In my wife's absence, the ice pan had frozen solid. I asked the two boys to run home for some ice and in a matter of minutes they were back. I made the ice-water bath, put my hand in it and rubbed a cube of ice around the bitten area which now was quite sensitive to cold.

By this time I fully realized the seriousness of the matter. I recalled the case of the showman in Los Angeles who handled a large gila monster in his act. He too was bitten on the finger and died in 52 minutes. I also remembered the story about the cowboy who teased a gila monster in front of a Tombstone, Arizona, saloon in 1886. He died in 30 minutes after being bitten.

My bite had occurred at 10:50 a.m. At 11:05 I felt a twinge of pain in the middle of my forearm. I hastily applied a handkerchief tourniquet there. Five minutes later I went to the phone and tried to reach a doctor, but with no success. At 11:15 the boys brought me another pan of ice cubes and in the meantime I released the tourniquet for the recommended two minutes in 10 of application.

By 11:20 I started to feel ill. I tried another doctor and succeeded in reaching him. Suddenly a wave of sickness struck me. My legs grew weak and blinding lights flashed before my eyes.

I lay back on the couch as nausea

seized me. I threw up — the vomitus was yellow.

At 11:30 a member of the Tucson Garden Club came to my home to discuss a speaking date with me. Her coming was most timely. I had her call the doctor again as well as my neighbor, who was a nurse.

At 11:43 the neighbor arrived, all out of breath. She called an ambulance and minutes later the doctor's assistant arrived. He had barely lifted my hand to examine it when two orderlies came in the front door with a stretcher.

Entering the hospital I vomited again. A doctor gave me a shot of tetanus in my left shoulder and one of demerol in my right.

My hand was now so puffed I could not bend my fingers and the swelling had advanced far up my arm. Most of it had taken place since cessation of the ice-water bath when I was taken from the house.

Equipment was brought in next to my bed and soon a saline solution slowly filtered into the vein of my right arm to replace the body fluid loss by my vomiting every 10 minutes, which condition endured for four hours.

I was very weak and breathing heavily, but I do not remember having any speech difficulties and I could think coherently. My blood pressure was 118/74 (normal: 112/68); pulse 80 (normal: 68-72). A long series of penicillin shots—one every three hours—was started at this time.

By now I could not tolerate the slightest touch to my left arm. A sample of blood was taken from my right arm for diagnosis.

At four that afternoon the doctor lanced my swollen hand. He made two incisions on the back of the hand and a circular one through the five punctures, plainly visible on the knuckle. These were caused by the upper front teeth but definitely had

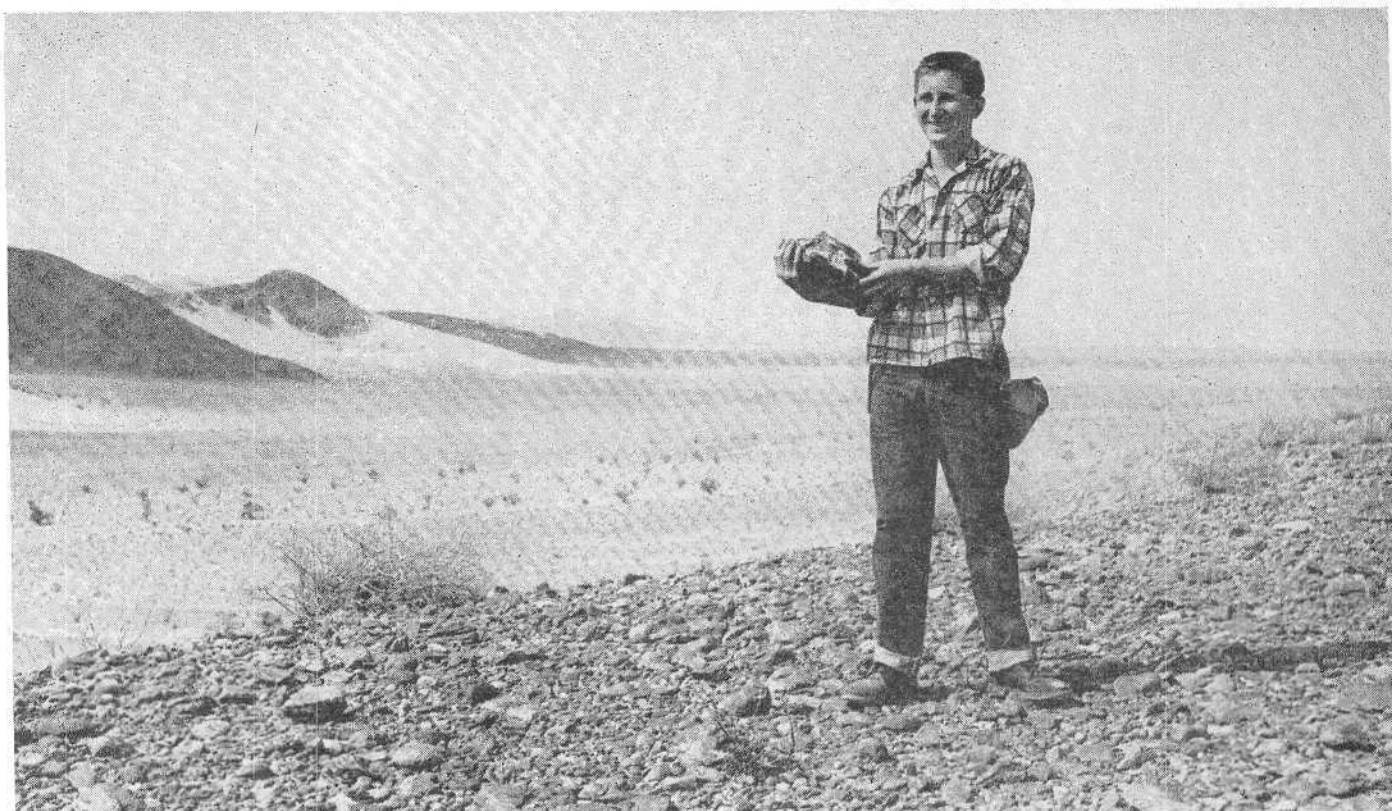
carried no venom. No incision was made through the two lower front teeth marks because they could not be discerned due to the discolored flesh—and yet they were the ones that had introduced the small amount of venom into my system.

After four hours in the hospital, my vomiting cycle lengthened from 10 to 15 minutes, then to every 20 minutes, and finally every half hour or so. The last spell came at 8:30 that evening. By midnight, after taking little sips of water now and then, I drank half a gallon in three hours to relieve my extreme thirst. After that I fell into a sleep induced by sedatives.

Next morning the swelling was the same and at 11 a.m. a nurse wrapped my arm in wet compresses packed between two hot water bottles. Over this she placed wet towels and covered the whole with rubber sheeting. I endured the "steam bath" for an hour and a half and then eased my arm out to cool it off. The swelling had receded! I slipped it back into the wrappings. This treatment continued until the following morning. By then my arm had once again assumed a more normal shape, although there still was considerable swelling, especially in the hand and fingers.

The next day—after having received 26 penicillin shots—I requested a cessation of this activity as I was safely past the crisis and felt that I could not tolerate another one.

On Saturday—I had entered the hospital Tuesday—I was released. It took a month for my hand and arm to recover although my fingers still were sore to the touch. Hot baths of epsom salts took away most of this soreness. By mid-August of that year much of the arm's sensitivity to sunlight had disappeared and I considered myself fully recovered from Poncho's bite.



Larry Hendricks of Indio, California, holds a large rhyolite specimen. View is north from base camp on malpais rise across collecting field in Pinto Basin to Pinto Mountains in left background.

Banded Rhyolite in Baja's Pinto Basin

Just below the U.S.-Baja California border in the land of wide and tranquil vistas is the easily reached Pinto Basin banded rhyolite collecting field. Here veteran collectors and beginning rockhounds alike have no trouble filling their quotas of excellent stones on every visit. Simple to cut and polish, the Pinto Basin material has long been a favorite with Imperial Valley rockhounds.

By EUGENE L. CONROTTO
Map by Norton Allen

ONE HUNDRED and eighty-three years almost to the day after Captain Juan Bautista de Anza's weary scouting party passed through Pinto Wash in Baja California into what is now Imperial County, California, Jeanne and I visited this area with a group of Coachella and Imperial Valley rockhounds. Except for the paved Mexicali to Tijuana border highway and the pole-line alongside it, this barren sweep of country probably has changed very little in the intervening years.

Though not one of the diarists —

Anza, Father Fray Juan Diaz or Fray Francisco Garces—in that 1774 expedition mentions the acres and tons of striking banded rhyolite in this country, I'm sure at least one of the Spaniards picked up one of these reddish-brown stones and marveled at the clear red, gold and brown bull's-eye rings passing through it. Perhaps Anza was the first rockhound in the Pinto country.

President Herb Ovits of the Shadow Mountain Gem and Mineral Society of Palm Desert, California, invited us to collect rhyolite and petrified wood

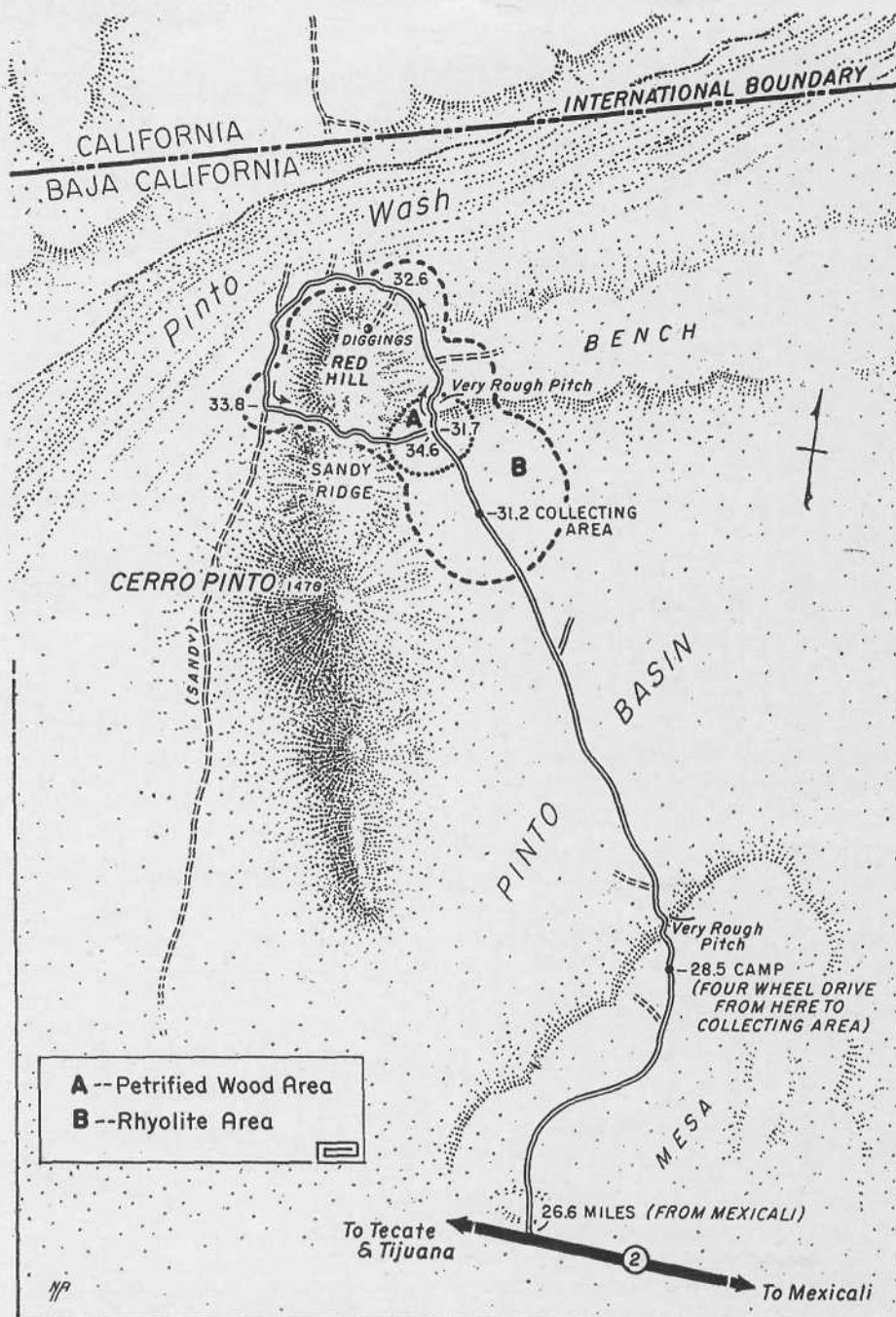
in the border country. Pinto Wash and Basin lie west of Signal Mountain, the 2263 foot terminal peak of the Cocopah range. To Anza, Signal was *Cerro del Imposible* for he had failed to reach this prominent landmark on an earlier expedition.

In the early days, rock collectors drove south from Coyote Well on Highway 80 and crossed the Mexican border into the collecting field with little regard for customs regulations. But those days are over. Border patrol officers on both sides of the line now check this area regularly and rockhounds who desire to visit the Pinto field will save possible embarrassment for themselves by crossing through the port of entry at Mexicali, Tecate or Tijuana.

Compliance with this law means traveling only a few more miles out of your way, and besides, if you drive down the Imperial Valley as we did, you have the opportunity to pass through Baja's interesting capital city, sprawling Mexicali, home to 100,000 persons.

Several of the Imperial Valley rockhounds joined us at the border and at 7 that morning we crossed into Mexico. For directions in Mexicali, consult the log accompanying this story.

A few blocks beyond the dry bed of New River, our convoy caught up with a long column of Mexican troops and



LOG—MEXICALI TO PINTO BASIN

- 00.0 Port of Entry, Mexicali. Drive straight ahead to the end of the street and turn left. At next intersection (signal light) turn right. Drive up this street and across bridge over New River. Keep left at the fork on western bank of the river. Roadsign here directs to Tijuana. This is Baja Highway 2.
- 17.8 Enter pass through Cocopah Mountains. Signal Mountain on right.
- 26.6 Turn right near curve sign on the highway onto tracks leading over a low rise. "La Star" is white-washed on the telephone pole near this turnoff.
- 28.5 Base camp. From this point to collecting field four wheel drive needed.
- 28.7 Fork. Keep right. Sandy and rough.
- 30.0 Fork. Keep left.
- 31.2 Collecting area.

Laguna Salada sink. The flat white land stretching to the haze of the southern horizon is flanked by the marching lines of the bleak Cocopahs on the east, and the higher escarpment of the Sierra Juarez on the west. The Laguna Salada, which is part of the Colorado River's alluvial basin, was dry only at its upper end when Anza's party passed through. It has contained water in recent years, but now it was as waterless as a valley on the moon.

Where the pole line comes close to the highway at 26.6 miles from the port of entry and just beyond a curve sign, our convoy turned right across a low rise above the road. The worn wheel tracks led north through a stony malpais plateau on which were growing sparse stands of ocotillo wands tipped with red tassels. Conventional automobiles will have no difficulty driving this trail to 1.9 miles from the highway where we made camp at the tip of the malpais rise.

Northwesterly across the Pinto Basin which extends from this bench are the Pinto Mountains and if Nature ever served up a Neapolitan ice cream sundae—this is it. The main mountain, 1476 feet in elevation at its highest peak, is a chocolate brown eroded mass tapering off toward the north and the U. S. Border into a stony ridge almost covered with pure white sand. At the far end of this small range is a still lower hill that is a gay strawberry shade.

From our base camp, jeeps ferried us to the collecting fields in the basin and mountain slopes below. Jeanne and I rode with Arthur H. Kuhns of Brawley, a most helpful and pleasant camp companion. Kuhns has collected extensively all through this border country and the glossy target-like stone in the bola tie he wore was found in the basin on an earlier trip.

It's a sandy and rough trail, but the

we had to crawl behind it for nearly a mile. Thus, involuntarily, we became part of a Sunday morning parade and hundreds of bare-footed youngsters enjoyed the *Americanos* as much as they did the soldiers.

The situation reflected the contrast in our two cultures. We, in our hurry to get to the collecting field, were silently impatient with the soldiers. And the Mexicans probably felt that on this bright and beautiful morning there was time for everything—especially a parade.

The Tijuana road is a first class highway roughly paralleling the border. After leaving Mexicali proper it travels for a few miles through the irrigated fields of cotton and row crops of the fertile Mexicali Valley, actually an ex-

tension of the Imperial Valley. Feathery salt cedar, in full pink bloom, was growing along the roadside. It was March and the rain gods had been good that winter. We looked forward to the flower show we knew awaited us.

Signal Mountain was now bathed in the full morning sun and the highway angled toward it. And suddenly, the farmlands were behind us and we were in the heart of the desert.

At 17.8 miles from the port of entry, we entered the easy pass between the main Cocopah range on our left and Signal Mountain. This is the *Paso Superior* or upper pass, about three miles north of *Paso Inferior* or lower pass through which Anza went in 1774.

And as the road crossed the Cocopahs we got our first view of the great

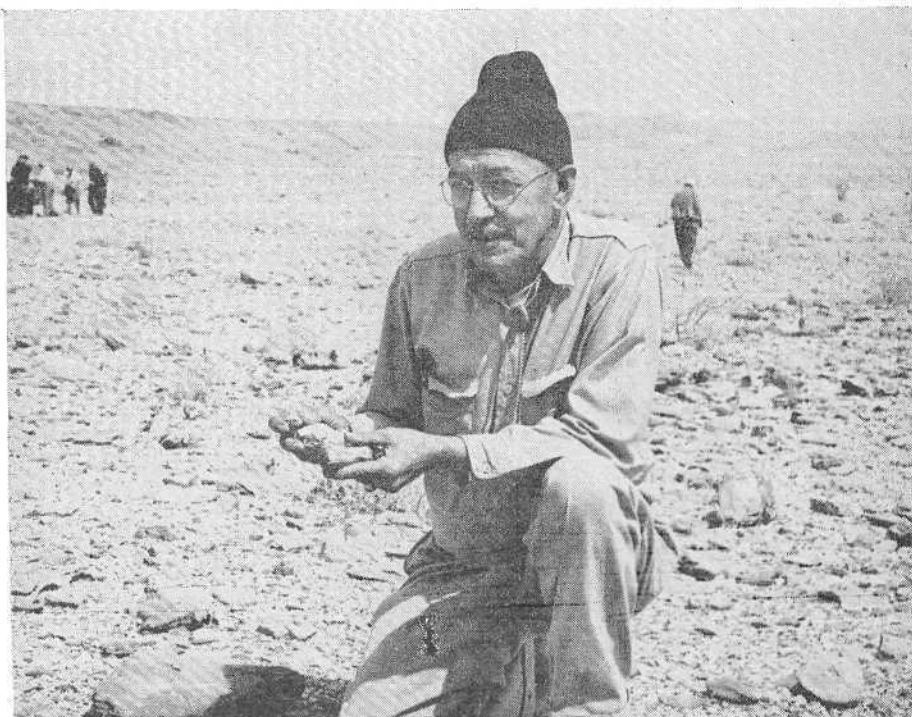
jeep bounced right along past several more reddish-brown stone-strewn lava flows and a few sandy washes fringed with yellow-blossoming creosote and a variety of smaller plants.

At 2.7 miles from base camp, Kuhns parked the jeep. All around us were good specimens of rhyolite, a light-colored lava of much finer texture than granite which it resembles in chemical composition. Although there has been a corruption and conflicting use of terms, the most commonly accepted name for the best quality rhyolite is wonderstone. Our chief problem that day was not where to find the stones—but which to keep.

Not all the Pinto area rhyolite will polish. In volcanic activity there are violent changes in direction and intensity of flow and rate of cooling which directly affect the texture of the stones. With the naked eye, I soon learned to distinguish between the fine-grained specimens and the sugary ones that will not polish.

The most desirable stones have perfect bull's-eye patterns, but it often requires a diamond saw to reveal them. This being true, collecting banded rhyolite becomes more or less a guessing game.

I found no authority who even attempted to explain the target pattern which makes Pinto rhyolite unique and especially suited for cabochon jewelry. In one specimen Jeanne found, we counted nine shades of color



Arthur Kuhns of Brawley in the collecting area.

ranging from tan to gold to bright yellow to red—truly the colors of the Desert Southwest.

Here is Kuhns' formula for polishing the material: grind to form; sand with 240 grit, then 600 grit; polish with cerium oxide. Some rockhounds have successfully tumbled banded rhyolite.

The collecting in the flat is just as good as on the slopes of the rose-colored hill, although a greater variety of material is found on the hillsides.

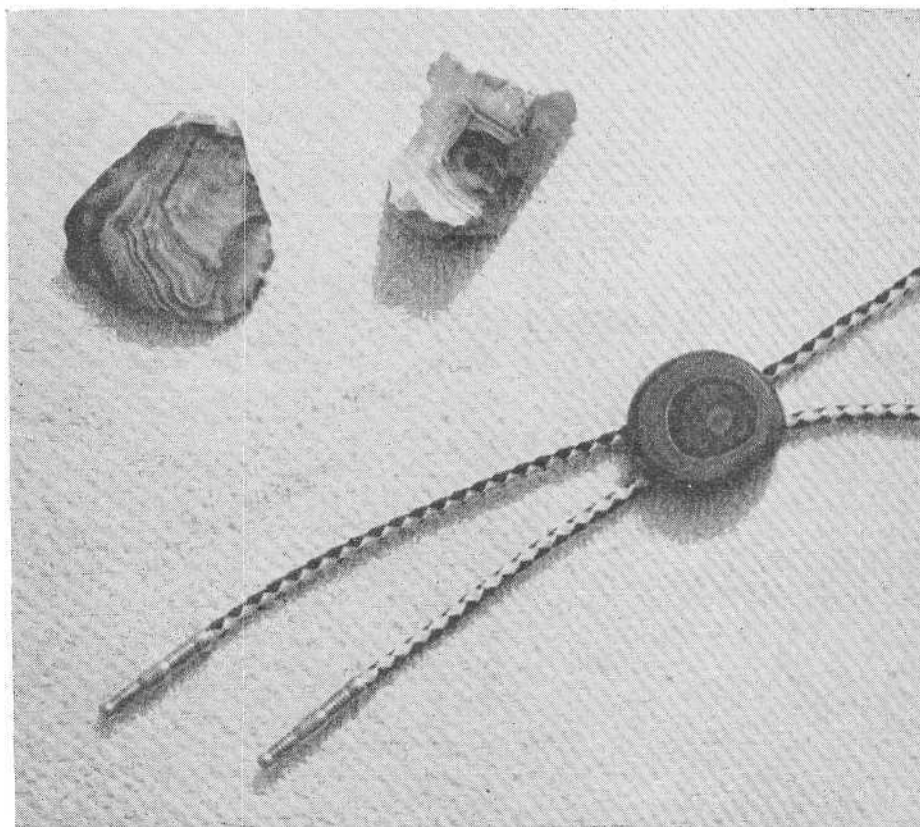
The slopes contain petrified wood and some black "raisins" of limonite, hydrous iron oxide. The reddish hill no doubt derives its hue from the high iron content of its soil.

Authorities seem to agree that the petrified wood here was deposited by the Colorado in ancient times, and therefore the old "petrified forest" label placed on this collecting field is a misnomer. Very little of the wood is of gem quality, for it lacks the hardness and color of the better types. In 10 minutes I picked up and examined over 50 large pieces and one member of the party found at the side of the road a 50-pound palm root of undetermined gem quality. Most of the dull black Pinto wood is formless, but by diligent searching throughout that day, we found many good specimens. These make excellent paperweights, door jams, garden rocks and cabinet pieces.

From the principal jeep trail, minor trails take off in all directions, but the main route continues northward across a long low malpais bench stretching from the rose hill toward Signal Mountain. With Kuhns at the wheel we drove up and over this bench and around the rose hill. On the opposite side the road runs through the high sandy slopes of Pinto Wash. It was down this passage that Anza came after camping at the base of the Sierra.

The Southwestern historian, Herbert E. Bolton (*Desert*, July '50), while

Rough banded rhyolite specimens, top left, and polished bola tie stone.



following Anza's trail in 1928, tried to cross Pinto Wash and got stuck. He and his driver labored all night carrying stones to make a road to enable them to back 140 feet out of the deep sand. And Kuhns told us that he has had to pull four-wheel drive jeeps out of this country!

All around us—as far as the eye could see—were the subtle rhyolite stones—and this despite the fact old-

timers apologize for this part of the collecting field because "it has been worked out."

We turned into a tight little wash cutting through two points of the rose hill. Sheltered by the mountain were small gardens of brilliant wildflowers—purple verbenas, yellow primrose, the open eyes of rose-purple desert five-spot—and beautifully symmetrical desert holly in prime growth and the networks

of spiny green Mormon tea branches growing out of the canyon walls.

In this pass I got my first and only view of native wildlife in the Pinto country when two pencil-sized lizards darted out of the snorting jeep's path. The round-trip around the hill is 2.9 miles long.

This field trip to Pinto was prearranged with the Mexican border authorities who are mainly interested in knowing when your group plans to enter and leave Baja. American visitors to the border towns and adjacent areas are waved through the border with little or no formality. However, if you plan to travel south of these places you will need a Tourist Card, procurable at the Mexican consulate in Calexico, San Diego or Los Angeles as well as at most travel agencies and airline offices. Only requirements are proof of U. S. citizenship and payment of \$3. They are good for six-month visits.

A word of warning regarding cameras: if you take a new foreign camera into Baja, secure an export certificate at the customs office or you may have trouble getting it back into the U. S. duty free. And remember—most standard automobile insurance policies are void when driving in Mexico. For a small fee you can buy interim coverage at the border. One final regulation that may affect the border rockhound: the State of California prohibits the importation of plants.

The Pinto collecting fields are in open, unsheltered country. Summer visits, of course, are not recommended. And campers should bring their own firewood and water.

As the bright sun sank lower toward the purple coast range we said our goodbyes and turned our car homeward. The sunshine, fresh air and exercise had relaxed us; the intimacy with history and the rich botanical rewards had thrilled us; the rhyolite and petrified wood pleased us; and the companionship had warmed us. I was disappointed when the army column was absent from the streets of Mexicali.

Desert Quiz

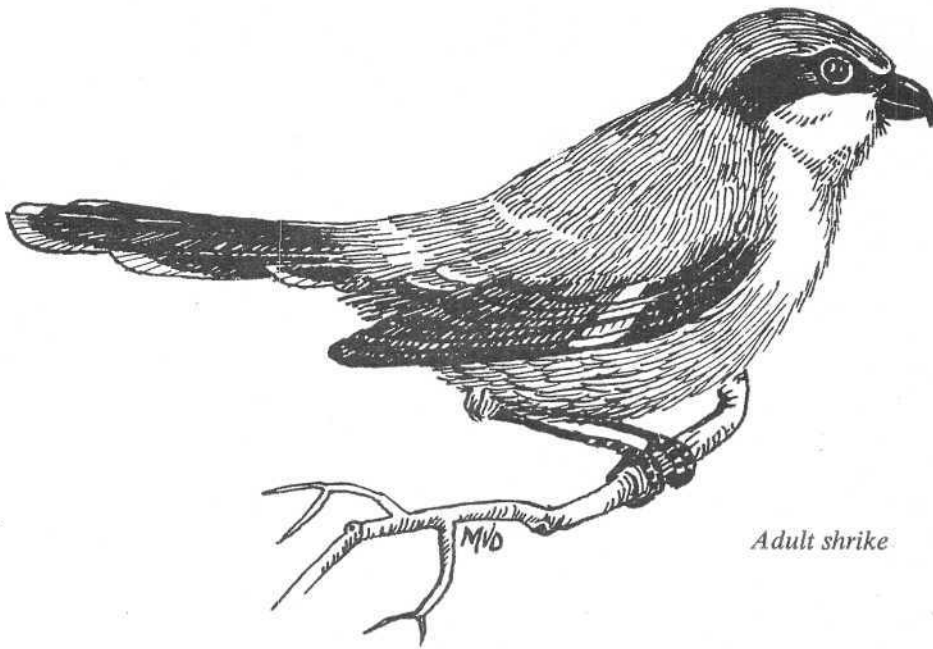
For those who wish to broaden their knowledge of the great fascinating desert region, this monthly quiz is an excellent school of instruction. It touches the fields of geography, history, mineralogy, botany, Indian life and lore of the desert. The average Southwesterner will get 10 to 12 correct answers. From 13 to 15 is a good score, 16 to 18 is excellent. Over 18 is exceptional. Answers are on page 35.

- 1—The Colorado River empties into the—Gulf of Mexico____. Gulf of California____. Pacific Ocean____. Salton Sea____.
- 2—The chuckawalla once formed part of the diet of desert Indians. It is—A small rodent____. Fruit of the Saguaro____. A lizard____. A cake made from the flour of mesquite beans____.
- 3—The blossom of the Joshua tree is—Purple____. Creamy white____. Pink____. Orange____.
- 4—Best known mineral in the mining history of Death Valley is—Borax____. Silver____. Gold____. Lead____.
- 5—A dop stick would be used by an—Indian medicine man____. Lapidary____. Miner____. Surveyor____.
- 6—The reservation of the Papago Indians is in—Death Valley____. Along the Colorado River____. Southern Utah____. Southern Arizona____.
- 7—San Francisco Peaks are the highest mountains in—Arizona____. Utah____. California____. New Mexico____.
- 8—Dinnehotsso is the name of a community on the reservation of the—Hopi Indians____. Mojaves____. Navajos____. Pimas____.
- 9—The Colorado River tributary which Powell named the "Dirty Devil" now appears on most maps as—Fremont River____. Bright Angel Creek____. Escalante River____. Virgin River____.
- 10—One of the following four states does not meet at the famous Four Corners—New Mexico____. Arizona____. Utah____. Wyoming____.
- 11—The Yampa River is a tributary of the—Colorado____. Green____. San Juan____. Rio Grande____.
- 12—In the boom days a half century ago the principal mineral taken from the mines at Tonopah was—Lead____. Silver____. Gold____. Copper____.
- 13—Traveling from Las Vegas, Nevada, to Salt Lake City on Highway 91 you would not pass through one of the following towns—Cedar City____. St. George____. Nephi____. Vernal____.
- 14—Tallest cactus growing in the Southwest is—Cholla____. Bisnaga____. Saguaro____. Organ Pipe____.
- 15—The village of Chimayo in New Mexico is noted for its—Pottery____. Wood-carving____. Weaving____. Silversmithing____.
- 16—Most of the irrigated farms in Salt River Valley, Arizona, are served with water from the reservoir behind—Coolidge dam____. Elephant Butte dam____. Roosevelt dam____. Hoover dam____.
- 17—One of the following desert trees does not have thorns—Ironwood____. Mesquite____. Palo Verde____. Desert Willow or Catalpa____.
- 18—Going north from Albuquerque, New Mexico, over Highway 85 you would enter Colorado near—Raton Pass____. San Geronio Pass____. Daylight Pass____. El Cajon Pass____.
- 19—Administrative headquarters for the Navajo Tribe is at—Gallup____. Holbrook____. Window Rock____. Tuba City____.
- 20—Geronimo was an—Apache____. Navajo____. Yaqui____. Yuma____.

RELIEF FROM DESERT HEAT ADDS WEIGHT TO COWS

Scientists at the University of California's Imperial Valley Field Station have discovered that comfortable cows gained 32 percent more weight daily than their sisters who were allowed to suffer summer heat.

The cows are cooled with 42-inch electric fans that whip up a four-mile-an-hour breeze.—*Nevada State Journal*



Adult shrike

Feathered Neighbors of the Desert Domain ...

The shrike is a handsome aristocratic fellow—a dweller of the desert solitudes. He is so neatly attired in clear contrasting blacks and whites and smoky grays that one has an instinctive feeling that this is no ordinary bird, but a unique creature—quite able to take care of itself in all situations, a bit aggressive, perhaps, but very much given to minding his own business.

By EDMUND C. JAEGER, D.Sc.
Curator of Plants
Riverside Municipal Museum
Drawings by Morris Van Dame

SAUNTERING THROUGH the Mojave desert's Joshua tree country one April afternoon I came upon a family of shrikes or butcherbirds. Two much-perturbed parent birds, handsomely feathered in black, white and gray, were perched near three baby birds. All were noisily protesting my presence in what they considered their private domain. Their scoldings ceased abruptly when I sat down a little distance away to observe them.

The broad-beaked fuzzy-feathered youngsters were sitting side by side on a limb, obviously waiting to be fed. The male parent was especially successful in bringing insects to them. After 15 minutes of watching I arose to see if I could find their nest. When I moved, the parent birds again showed excitement. They fluttered nervously

about their little ones, and finally perched on the topmost branches chirping at me in defiant notes.

The bulky nest was six feet above ground in a crotch of a tree yucca. Although easily seen, I could not have touched it from any direction, so many and so close together were the sharp-tipped leaves protecting it.

It was a typical shrike nest, eight inches across and made of loosely in-

terwoven crooked, rather stout twigs. The deep egg cavity had its special lining of fine roots and grasses and a few feathers.

Our desert dwelling butcherbirds, generally spoken of as white-rumped shrikes, build in a wide variety of places, the chief requisite being a large bush or small tree, especially a thorny one affording well-hidden shelter. Sometimes it is a large cholla or cats-claw, at other times a tree yucca or the longer-spined Mojave yucca, a honey mesquite or a screw-bean tree. In Utah and Nevada deserts three-toothed sage bushes are utilized for nesting sites, there being nothing higher to build in.

Seldom are shrike nests close together, for these birds demand large feeding territories which they stoutly defend with great courage against all encroachers. The nest is guarded by the male who keeps sharp watch for avian or other intruders from well-chosen lookout posts. Any bird which comes within his domain is promptly given warning, then vigorously chased away. All through the day he announces his sovereignty in harsh strident notes. Shrikes are among the few birds not parasitized by the cowbird, no doubt because of their vigilant and aggressive nature.

Both male and female shrikes are almost silent during the late period of courting and nesting. "What song is given (then)," says Dr. Alden Miller, "is of an ecstatic type, slightly different from the summer song."

The shrikes' vocal capabilities are never great, but during the pre-courting season and just after the nesting period they are not unmusical. I have heard vocal efforts of considerable charm.

My naturalist friend, Eugene Cardiff, told me that a pet shrike he had was a frequent singer throughout much of the year. If a shrike occasionally imitates other birds it is only the crudest of their notes. These harsh discordant notes were once imagined to be lures for small bird victims.

Many people mistake the shrike for the mockingbird, although the former has a conspicuous broad black bar or

Shrike young



mask that runs from nape through the eyes to the beak of his big flattish head, a slender tail and short but strong wings. The mockingbird is much slimmer, his tail is longer and more white shows in flight. Radically different too are the flight habits of the two birds. The shrike always drops downward when leaving its perch, progresses steadily forward with quick fluttering wing beats then suddenly ascends to its new lookout post. The flight of the mockingbird is more direct, less labored and more sustained.

The shrike, typically a bird of the wastelands, is seldom a town dweller. On the other hand, the mockingbird, while found in open spaces of deserts, is much at home in gardens and tree-lined streets of villages and cities. His song is much more refined, more musical and imitative.

Recently I came upon a pair of shrikes engaged in nesting activities among the cirio and agave thickets in the mid-peninsular desert of Baja California. There was the usual following of one bird by the other, the characteristic pre-nuptial wing fluttering of the female and twice I saw her carrying bits of rootlets and fine grass into a close-set and exceedingly thorny bush. These doings were several times interrupted to feed on small green cater-

pillars on low statured flowering shrubs.

On many of the stout spines which tipped the broad dagger-like leaves of century plants here, the birds had spitted various small creatures which they had killed. It was their way of making jerky out of the meat they did not need at the time of slaughter. Here were the dried bodies of two wild mice, three shrunken remains of lizards and several dried carcasses of grasshoppers and Jerusalem crickets. On one of the topmost spines hung the remains of a house finch. This habit of killing in excess of their needs is one common to shrikes the world over.

Under the dried eight-foot-high flower stalks of agave, which are favorite lookout posts for male shrikes, I sometimes find numerous pellets of wing-covers of beetles, hair, feathers and bone—the indigestible portions of food which, like an owl, they had disgorged.

As a rule shrikes tear their food to pieces with their hawk-like beaks. Often they hold it down with their feet as they tear away, as do other birds of prey. A shrike, like a hawk or falcon, sometimes carries food in its talons. Occasionally they eat seeds and fruits, but for the most part shrikes live on insects, especially grasshoppers,

crickets, caterpillars and sometimes scorpions and moths—a most exemplary diet and one which makes this bold hunter a real farmers' friend. Perhaps we should forgive him his sin of occasionally killing a small bird or lizard.

When taken young the shrike becomes a very pleasing and docile bird companion. Their confidence is easily won and they reward their human captor with definite attachment and frequent song.

Of shrikes there are many kinds and they are well distributed over most of the world except South America. Most of the American species of *Lanius* migrate southward when winter comes, but the subspecies *sonoriensis* of Sonora and Baja California is non-migratory.

The name shrike is thought to be a corruption of the word shriek which some think well describes the ordinary song. Most of the world's shrikes have been given the generic name *Lanius*, Latin for "a tearer to pieces, a mangler," *excubitor*, the specific name of the European butcherbird meaning "the watcher." Both names aptly describe the birds' habits. *Lanius ludovicianus excubitoroides* is the scientific name of our desert white-rumped shrike.

We Need Desert Photos . . .

September marks the start of another season in which the exciting desert land can be explored in safety and comfort. Beyond every rise, in every canyon and across every wash there is a new world awaiting members of the camera fraternity. If photography is your hobby, you will find enjoyment and perhaps monetary profit by regularly entering Desert's monthly photo contests.

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 must be black and white, 5x7 or larger, 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—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

PROPERTY ADJUSTMENT FOR PALM SPRINGS INDIANS

Secretary of the Interior Fred A. Seaton has asked Congress to equalize the value of tribal property divided among members of the Agua Caliente Band of Indians on the Palm Springs Reservation in California.

The proposed legislation would affect 92 Indians — 31 adults and 61 minors. Also affected would be undivided tribal properties estimated to be worth over \$12,000,000. The legislation calls for the transfer of the title of this property from the Secretary of the Interior, who now holds it in trust for the Band, to a tribal corporation to be organized under state law. Income from the corporation would be used to equalize the divisions or "allotments" of tribal property previously made. They range in estimated value from \$22,200 to \$164,740.

Allotment of the reservation land was begun in 1923 and under the procedure used, each Band member has been entitled to 47 acres consisting of a two-acre town lot, five acres of irrigated land and 40 acres of dry land. Although the allotments are thus all equal in acreage, they greatly vary today in value and this has given rise to litigation. With a little over 4700 acres so far allotted, about 26,000 acres remain in tribal ownership.



Hopi Katchina doll maker and his young helper add finishing touches to two symbolic dolls.

Painted Dolls of the Hopi Tribesmen

By ROSELLA MATTMUELLER
Photos Courtesy Santa Fe Railway

THE OLD Ford bounced across the desert, erupting clouds of swirling choking red dust. Our Hopi driver, Little Joe, drove with happy abandon over the chuck holes that rutted the long dirt road. Every time we received a jarring jolt, a broad grin etched itself across his brown face and he'd shout "Hold it!"

Like most Hopis, Little Joe was short with a broad and friendly face. In fact, he had an almost perpetual but sincere grin for the tourists he guided across the northern Arizona highlands to the Indian pueblos.

The Hopi villages are on three rocky mesas, called First, Second and Third

Mesas. We were headed for Walpi on the western point of the First, rising several hundred feet above the desert floor, 72 miles north of Winslow.

After two hours of rough travel, Little Joe brought his desert taxi to a grinding stop in the shadow of First Mesa. Somewhat the worse for wear, I disentangled myself from the car.

"Now we walk," Little Joe said. I looked at the steps leading skyward to the mesa-top, took a deep breath and started climbing.

From December to July, the Katchinas dance in Hopiland, and I had come to see those parts of the ceremonies conducted in public. The more sacred rituals are performed within the secret confines of the underground kivas.

To the devout Hopi, the Katchina spirits have three forms: the supernatural being; the masked impersonator of that being; and the little wooden dolls carved in the same likeness. These colorful dolls are decorative articles for the home and constant reminders of the Katchinas who bring the blessings of rain, tall corn and happiness to the tribesmen. They are symbols of a rigid faith that has withstood drouth, famine, marauding neighbors and curious tourists.

The top of the mesa is a long narrow rock ledge about a half mile long and 200 feet wide. It is so narrow there is only room for two rows of terraced houses packed tightly against each other. On the second terrace are the kivas built into the walls of the cliff, their irregular ladder-poles reaching high above them.

Walking along the mesa, I was greeted with friendly nods and smiles. Most of the men wore overalls and shirts faded by the sun to blend with mesa and desert. With the exception of the modern school girls who had



Katchina dolls are shaped out of bits of dry cottonwood roots by the expert knife of this Hopi artist.

on cotton store dresses, the women wore the traditional squaw dresses, black one-piece gowns of hand-woven wool which hung straight to the knees and were gathered at the waist with belts.

Here and there I saw a woman or young girl painting bowls of various shapes and sizes in a combination of brilliant colors, or making coiled watertight jars of willow splints. One man was weaving a ceremonial blanket and another material for a woman's dress.

But, what fascinated me most about Walpi were the hand-carved and painted Katchina dolls. They were everywhere — hanging from rafters, upon the walls of every home and on altars. And their likenesses were painted on ceremonial robes and carved on rocks.

To the Hopi a katchina is a supernatural being who is impersonated by a man wearing a mask who believes that when he places this mask upon his head and wears the appropriate costume and body paint, he loses his own identity and receives the spirit of the katchina he represents.

A katchina has three forms: the supernatural being; the masked impersonator of that being; and the little wooden dolls carved in the same likeness.

As with most Indians, the Hopi religion is the hub around which their lives revolve. It is the great motivating force behind almost every deed and thought. In this religion there are many god spirits, but only seven major

ones. Appeals and thanksgiving are sent to these gods during religious ceremonies and dances through the masked katchinas who represent them.

Just as our children believe in the bounty of St. Nicholas, so the Hopi children believe in katchinas. And as Santa Claus comes at a certain time of year, bringing gifts to good little boys and girls, so certain katchinas bring them gifts of bows and arrows, fruits and sweets and katchina dolls. However they receive such gifts not just once a year, but enjoy several "Christmas" days from December to July.

But when Hopi youngsters reach the age of seven, the myth is harshly shattered. For it is then, at a special ceremony, they learn the awful truth — just as sooner or later, their little white brothers learn there is no Santa Claus. But unlike their white brothers, the little Hopi learns the truth in a hard and painful way.

This happens on the eighth and final day of the Powamuya or Bean Ceremony held in February and it was this ritual that I saw on my visit.

Suddenly, someone shouted and pointed to the west. A prancing grotesque figure drew near, bellowing weird inhuman cries. If ever there was a bogey man to scare little children, this was it. His mask had bulging eyes, big horns and a large mouth filled with teeth and red tongue. His body was painted with stripes and he carried a bundle of yucca whips. In a high shrill voice he called on all moth-

ers to hand over their seven year old children for purification.

Like most Indians, the Hopis are ordinarily kind and gentle with their children, but they still hold that a good whipping now and then will do more good than harm. And since this one is part of their religious training, it will drive out the evil spirits and instill the good.

Out of doorways they came. Little girls, their eyes wide with fright, clinging tightly to the hand of a godmother; little boys, trying bravely not to show their fear, grasping the hand of a godfather. The Whipper Katchina swung his yucca whip four times at each child. Before the final lash, the child is screaming, but more in fright than pain, for the whip barely touched the youngster's body.

After the last child had received his flogging and had gone whimpering to the arms of his mother, all the katchinas took off their masks, revealing not dreadful beings from another world, but familiar faces of fathers, brothers and uncles. For a few seconds the children stared in stunned silence. Then as the "monsters" began to laugh and tease them, weak grins came to their lips.

Now the katchina dolls they were holding took on new meaning. These were not toys (although there are certain ones they do play with) but part of their religious training. Before a ceremony, the men of the village make the dolls in the likeness of the katchinas that will take part in the ceremony. During the dance the masked dancers give each child the doll made especially for him. But when the dolls are taken home, the parents hang them upon the wall or suspend them from rafters, so the children will see them every day. In this way they learn by easy stages to know the different katchinas (and there are hundreds of them) and the meaning of each. Ask a Hopi if the katchinas have always been part of their religion and he will nod and say, "It has always been so."

Primitive looking and gayly painted, these weird little figures have become a collector's item, although many of the Hopis bitterly resent the fact their katchina dolls are copied and sold to tourists and collectors. However, it isn't only the white people who are guilty of this practice, for many of the Indians themselves, especially the younger ones, flaunt tribal opinion and conduct a thriving business selling them.

Authentic katchina dolls are made only by the Hopi for which only the dry roots of cottonwood trees are used. This wood is collected along the banks

of the many deep washes on the reservation by men of the Katchina Society.

The roots are cut into desired lengths and taken back to the village. Here with knife and chisel, the sculptor whittles and shapes out the doll he has in mind. He then smooths it with a wood rasp and goes over it carefully with a piece of fine sandstone. He may carve the entire doll from one length of wood, or he may whittle various parts, such as the head-dress, arms and legs, ears and nose, from smaller pieces of wood and fasten them to the body with tiny wooden pins. Glue is coming into increasing use.

When the carving is complete, the doll is ready to be painted. First it is given a covering of kaolin as an undercoat, over which the artist applies his colors. Today many men use poster paints, which are brighter but tend to fade quicker.

Workmen who still believe that old ways are the best ways, mix and grind their own native pigments.

For green and blue they use malachite; for black, soot or corn smut, the latter a fungus growing on corn plants; hematite for brilliant red; limonite for bright yellow; for white, kaolin. These are the same paints used for body decorations and these colors are symbolic of the Hopi's cardinal directions: Blue-green—west or southwest; Yellow—north or northwest; White—east or northeast; Red—south or southeast; Black—Nadir or the Underworld; and all of these colors together—Zenith or Up.

Great care is taken with the masks, with traditional designs and colors closely followed. The most common symbols used are for fertility, sun, moon and stars, animal tracks, the rainbow and lightning. After the paint is dry, the dolls are decorated with wisps of eagle feathers, tiny rattles, or anything and everything that is associated with that particular katchina.

The Hopis also make play-dolls for their very young children from flat pieces of board about three inches in width and six to eight inches in length. No attempt is made for realism, yet they are distinctive enough so there is no doubt as to the katchina they represent.

Among the finest collections of katchina dolls are those at the Southwest Museum in Los Angeles, and the Museum of Northern Arizona in Flagstaff.

With the exception of the true collector, few people who buy the dolls attempt to learn the symbolism painted upon them. Unfortunately, to most they are merely quaint souvenirs of a western trip. But even the best informed collectors have not been able to pierce very deeply behind the an-



Walpi, the most picturesque of the three Hopi Mesas.

cient veil surrounding these symbolic dolls.

Shivering under a fading afternoon sun, I sat wedged between two Hopi girls who had returned home for a few days from the Sherman Institute. We were watching the closing ceremonies of the Bean Dance. The two

young girls had talked quite freely to me during the ceremony, so I turned to one and asked, "Why can't the children learn the truth without being lashed and subjected to such fear?"

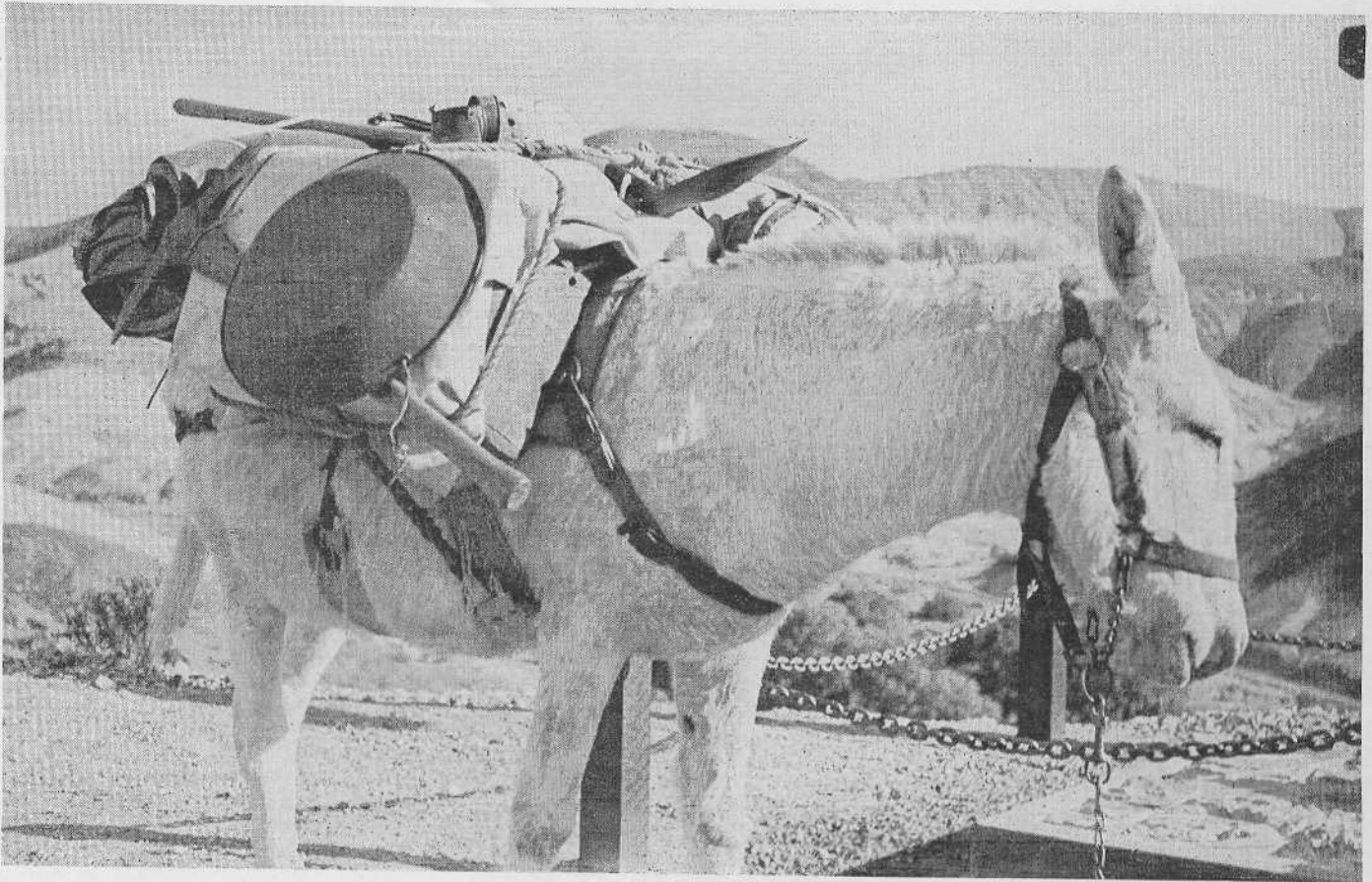
She looked at me blankly for a moment, then with a slight shrug said, "It has always been so!"

COMMANDMENT FOR THE PRESERVATION OF WILDLIFE

Have you ever wondered how abundant our wildlife might be today, had there been a commandment among the 10 to guide us in our dealings with the wild birds and mammals? Would the beautiful Carolina parakeet still be with us? Would we have spared a patch of southern primeval forest large enough for the survival of the ivory-billed woodpecker? Would the passenger pigeon, though in reduced flocks, still be one of the marvels of Nature?

Maybe such a commandment would have read like this:

*The Lord thy God hath placed upon the earth the wild creatures for thy pleasure to see. Thou shalt not molest them or disturb their homes. Thou shalt protect the forests and meadows and marshes of their dwelling places, and thou shalt not pollute the waters that are theirs. Thou shalt hold their lands inviolate against the encroachment of thy cities and thy roads, and shall in all ways see that their needs are met, so that each shall be able to perpetuate its own kind, and none shall be exterminated from the face of the earth. — From the Foreword to Devereux Butcher's *Seeing America's Wildlife in Our National Refuges*.*



DESERTS HAVE A VASTNESS

Bellflower, California
By ANONA MCCONAGHY

Someday leave the highway,
Walk a sandy road,
Find a yellow poppy
Or a horned toad.

Deserts have a vastness,
Wideness like the sea,
Mountain peaks are farther
Than they seem to be.

Listen to the silence
(Silence can be heard),
Know a re-assurance
Without the spoken word.

Time for introspection
On a mesa shelf,
Brings an understanding
Of Nature and of self.

• • •

DESERT TRAILS

By VIRGINIA HORD HAZEL
Santa Ana, California

Out to the end of the busy street,
Out to the desert wide,
I take my way with a singing heart
And a joyous swinging stride.

I'll revel in scent of mesquite and sage,
All the desert shrubs that grow,
And stand in speechless awe at eve
In the desert sunset glow.

I'll travel the desert beneath the stars,
Where the world is still and sweet,
And so forget the city's scars
And the din of the city street.

Oh life is good and my heart is glad
And I am up and away—
To the open spaces to worship God
For my Spirit is free today.

Debt To A Burro

By ETHELYNE FOLSOM SPRINGER
La Mesa, California

I promised him a cross upon a hill,
A pinyon bough set in a rocky ledge.
For it was here that I remember when
At dusk, he once set his little stubborn will
And trail-worn hooves against the canyon's
edge,

My old prospector's eyes had failed to see.
And if mirage-cursed wasteland failed to
yield

A water hole, I'd just forget the gold,
And use his shaggy body for a shield
Against the clawing sand or stabbing cold.
But I'll remember best his white clown-nose
Forever twitching if a wind had blown
Lush meadow-scent from some forgotten
ground,

Where in the sun he'd bedded down to doze,
Young neck unaltered and the task un-
known

Of packing men and foolish dreams around.

Open Way

By TANYA SOUTH

The Light of Heaven never dims.
It's we who cannot see.
And Love with mercy ever brims,
And Opportunity
Waits, with a bounty all unending,
Hoping against all hope
That we will ever keep ascending
That steep and narrow Slope,
Where Heaven with its gateway wide
Waits, and Truth is there to guide.

DESERT ROADS

By MARION M. DEEVER
Mojave, California

The casual roads in the desert sands
That wander toward the sun,
Are they wind blown trails of Indian bands
That roamed with spear and gun?

Do they mark the paths of miners' dreams;
Shadow streams of a modern jet?
Were they long since cut by wagon teams?
Are they roads where settlers met?

Do they point the way to water holes;
To fields of precious stones?
Cross the graves of long lost souls,
Mark ruts to vacant homes?

Will the casual roads through the desert sage,
As they beckon the curious one,
Divulge the tale of a long past age
As they wander toward the sun?

• • •

WET SAGE

By GEORGA A. STOUGH
Trinidad, Colorado

I slept one night on the prairie
As the rain fell gently down;
Fast cooling the dry, hot bunch grass,
Bathing the nearby town.

Then when the shower had ended
The dawn broke bright and clear,
Full drenching in rosy splendor
The landscape, far and near.

And as I stood on a hillock
To view my vast domain,
A breeze brought a whiff of fragrance
Seeped in the midnight rain.

Oh, there is no scent quite like it,
None with it can compare;
Just a blend of freshwashed sagebrush
Upon the morning air.



Kit Fox . . .

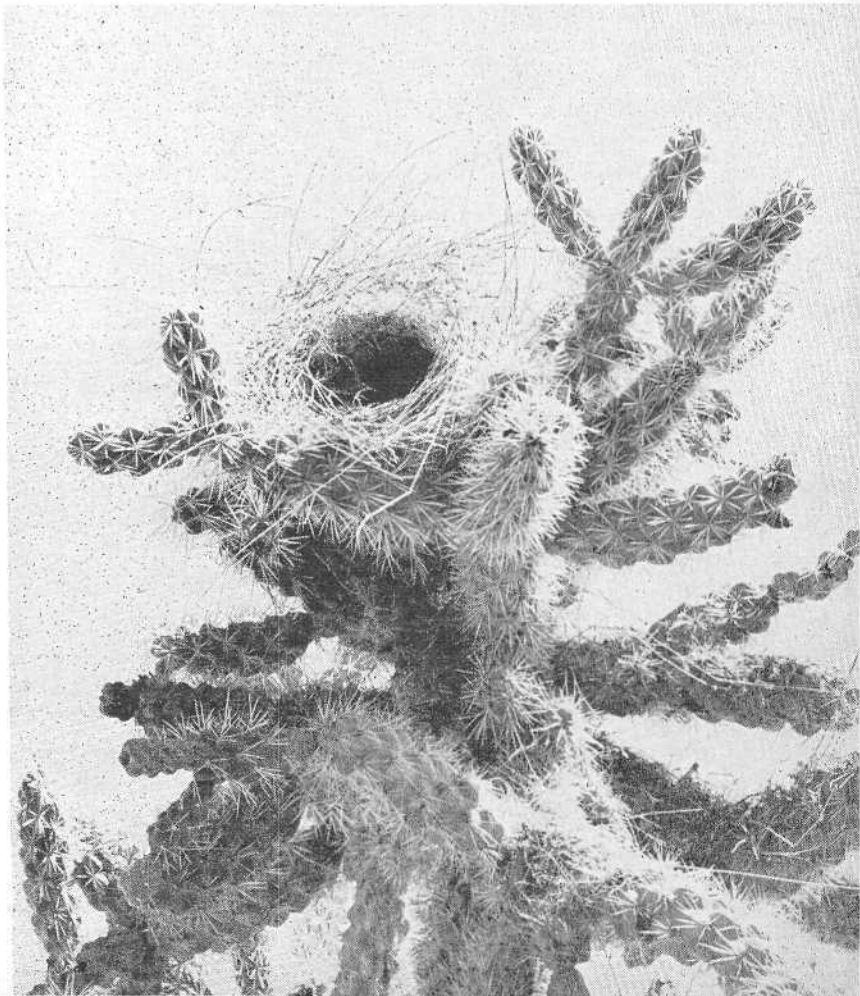
Using an electric tripper and strobe lights, Bob Leatherman of San Bernardino, California, captured this kit fox on film and, along with it, first prize in this month's contest. Leatherman used a 2¼x3¼ Crown Graphic camera with Ektar f. 4.5 lens; Eastman Type B pan. film, 1/10,000 second at f. 22. The fox was three and a half feet from the camera when it tripped the shutter.

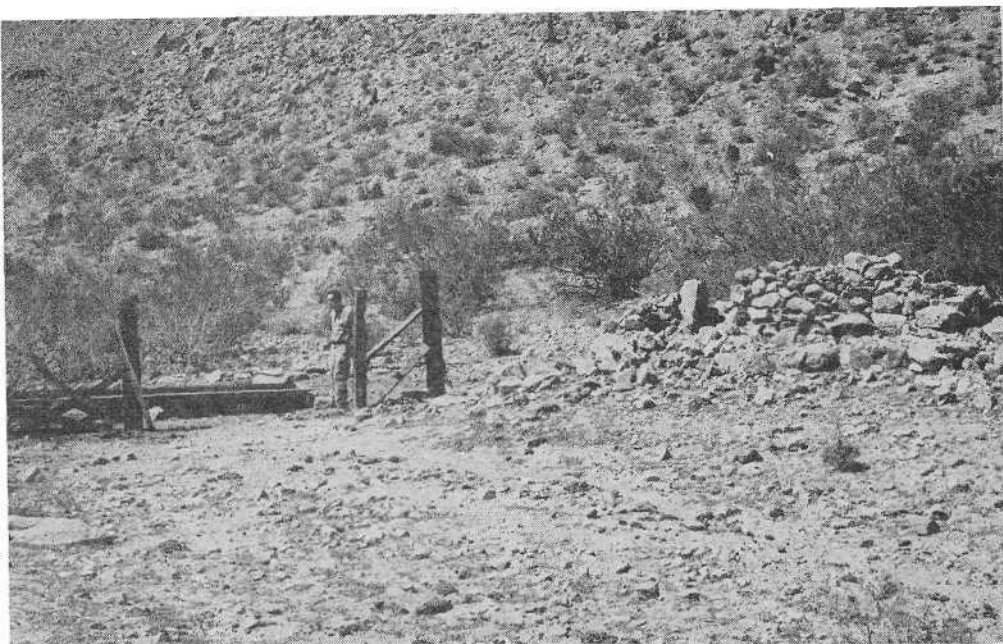
Pictures of the Month

Protected Nest . . .

For the second month in succession, Ryan O'Brien of Phoenix has won second prize in Desert's photo contest. On a bright cloudless day on the desert north of Cave Creek, Arizona, he photographed the secure bird's nest in the spiny arms of this cholla cactus. Camera data: Rolleiflex 3.5 camera; panatomic X film; 1/30 second at f. 9.

SEPTEMBER, 1957





Jumbled mass of boulders marks the site of the old government storehouse at Marl Spring on the Mojave Desert of California. Today the spring is a watering place for cattle.

HISTORIC DESERT WATERHOLES IX

Marl Spring

For the early teamsters, the tedious desert stretch between the Colorado and Mojave rivers called for more than the usual stamina, for precious little water found its way to the surface here. Marl Spring was one of the most important watering places for man and beast on the old wagon trail across the Mojave desert.

By WALTER FORD
Photograph by the author

ONE OF THE trade routes for caravans traveling between Santa Fe and Southern California during the early part of the last century entered California a few miles north of the present city of Needles, skirted the northern end of the Providence Mountains, then continued westward to Soda Lake and the Mojave River. It followed the course of the river a short distance beyond present day Victorville and entered San Bernardino Valley by way of Cajon Pass.

Later, when Fort Mojave was established on the Colorado River in 1859, the Government sent supplies to the fort from Los Angeles over this route which became known as the Government Road. Forty-niners seeking the gold fields of California probably were the first to take wagons over the road, but Lieutenant A. W. Whipple, who followed the route in 1854 in a wagon equipped with an odometer, was the first to receive official recognition for the venture.

One of the prominent watering places along Government Road was Marl Spring, located 9.5 miles directly north of the town of Kelso. An abundant supply of good water always was available at Marl Spring and for the west-bound traveler it was the last source of water until Soda Lake was reached, a desolate stretch of 30 miles.

In 1861 John Brown of San Bernardino built a toll road from the summit of Cajon Pass to the valley below. Next year he established a ferry across the Colorado River at Fort Mojave. An interesting account of his first trip across the Mojave Desert on the Government Road is given in his diary of 1862. Traveling in the heat of summer and mostly at night, Brown and his party left San Bernardino on June 12 and arrived at the Colorado River 17 days later. Some interesting items relating to their experiences at and near Marl Spring are contained in the following entries from Brown's narrative:

"Friday, June 20. Started early. Road bad. Left one wagon, went on several miles. Left other wagon. I went ahead. Found holes of water. Bad. Foster came up. Found water four miles ahead. I went back with water. Took the stock. All went to water. 20 miles. Camped at Soda Springs.

"Monday, June 23. This morning Foster and myself reached Marl Spring. 20 or 30 Piutes came to us in the evening. Foster and myself took a keg

of water and started back to meet the wagons. Went 7 miles. No grass.

"Tuesday, June 24. This morning we went 5 miles. Met and watered team. Layed by 3 hours. Then went on to Marl Spring. Found 25 Indians. They behaved well. Capt. John and Logan were the chiefs. In the evening traveled 7 miles. Camped for the night. No grass."

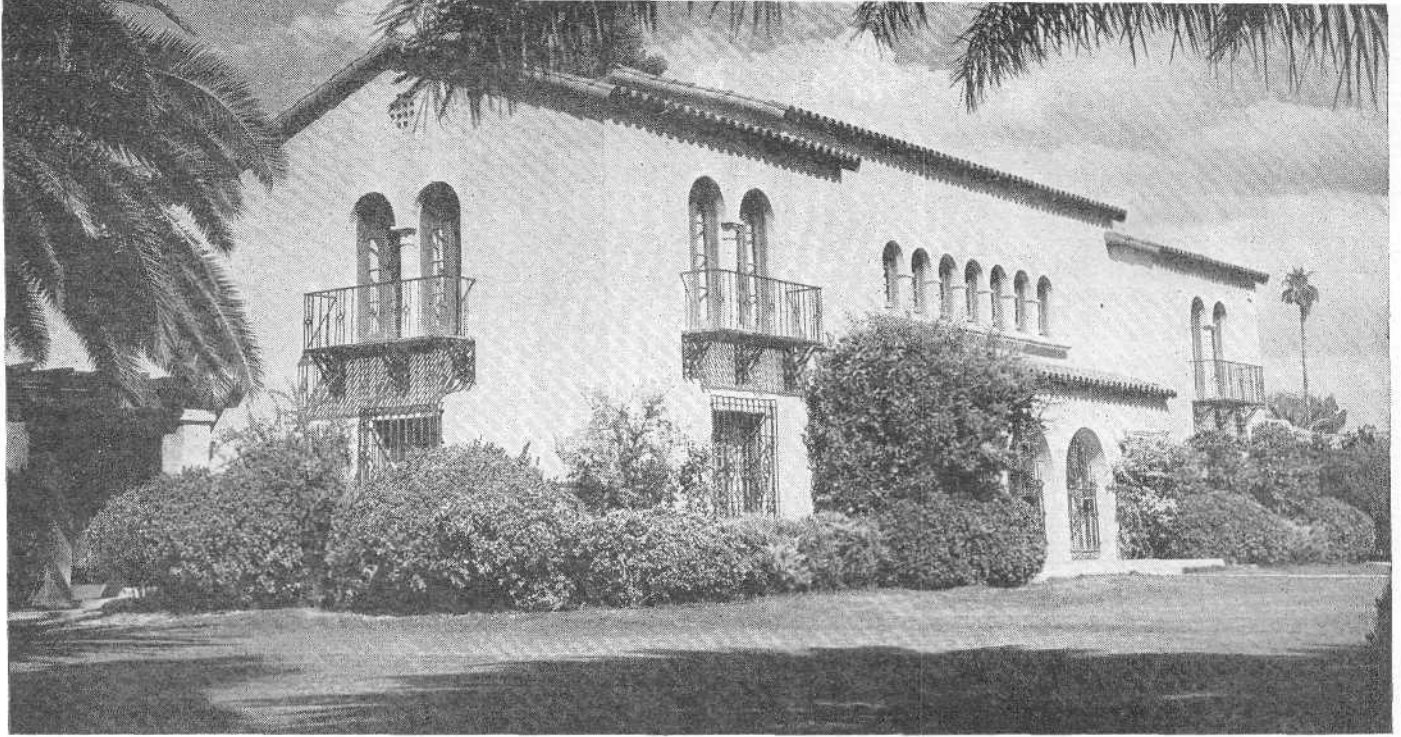
Brown's Marl Spring entry for the return trip reads:

"Thursday, July 3, 1862. Lay in camp 'til 12 M. Went on to new spring. Got supper. Watered horses. Went on 6 miles. Camped 2 hours. Went on to Marl Spring. Watered horses. Filled water kegs. Went on 5 miles. Daylight came. Camped. No water or grass."

In *On the Trail of a Spanish Pioneer*, Dr. Elliott Coues indicated that Father Garces followed a course that closely paralleled the Marl Spring-Government Road route. In the annual publication of the Historical Society of Southern California, 1927, and under the heading of "A Modern Interpretation of the Garces Route," the late Dix Van Dyke stated that Dr. Coues was in error and that the Garces trail crossed the southern end of the Providence Mountains through Foshay Pass, then continued past the Devil's Playground near Kelso to Soda Lake. Van Dyke wrote that while the Marl Spring route was better for travelers with livestock and wagons, it possessed no advantages for bare-footed Indians who could easily out-travel horses. Van Dyke was not one to base such conclusions on easy-chair observations. He had covered practically every foot of Garces' trail westward from the Colorado River, walking when the trail became impassable for his specially built car, and comparing existing landmarks with those mentioned by Father Garces in his diary.

Marl Spring is fairly easy of access and well worth a visit for those interested in California's early trade routes. It may be reached by following Highway 91 eastward to Windmill Station, then turning right and proceeding to the power line road, about one mile north of Cima. Approximately 8.4 miles westward along the power line road another road branches to the left and follows a telephone line for six-tenths mile, when a turn-off to the right leads to Marl Spring, 1.3 miles distant.

Today Marl Spring provides water for the many cattle that graze in the area. It is piped from the spring to a watering trough, which is now enclosed in a wire fence. The walls of the stone cabins which served as shelters at this once important watering place are still standing a short distance from the spring.



The Heard Museum in the heart of Phoenix, Arizona.

Southwest Treasure House...

Last year 35,000 persons visited the Heard Museum in Phoenix to see and study the products of human workmanship gathered there from the far corners of the world, with special emphasis on the cultures of the Southwest. Privately endowed, Heard Museum is one of the most important cultural institutions on the Great American Desert.

By ISABEL McCORD STROUD

Photographs courtesy Phoenix Chamber of Commerce

THE IMPOSING red tile-roofed building looming above the gnarled olive trees that line Monte Vista Road could pass for a conquistador's mansion. This bit of Old Spain lies in the heart of Phoenix, Arizona, and attractive landscaping with eucalyptus, palm and orange trees adds to its old world setting.

But this beautiful structure is the modern Heard Museum. Within its walls is the "Treasure of Monte Vista."

Just beyond the massive wrought iron gates is a large flagstone entrance patio which is enclosed on all sides and open to the sky. Stone metates, old Spanish chests, giant Pima baskets, earthenware jars and Navajo rugs are casually placed under the patio balconies as invitations to visit the treasure stores within the wings. On both sides of the entrance are timely exhibits to coincide with the season. These might be a miniature Kwakiutl fishing village from British Columbia, statues of Balinese goddesses, shrunken heads from the Jivaro in Ecuador, Iroquois masks, Navajo jewelry or dueling pistols from the Spanish era of the South-

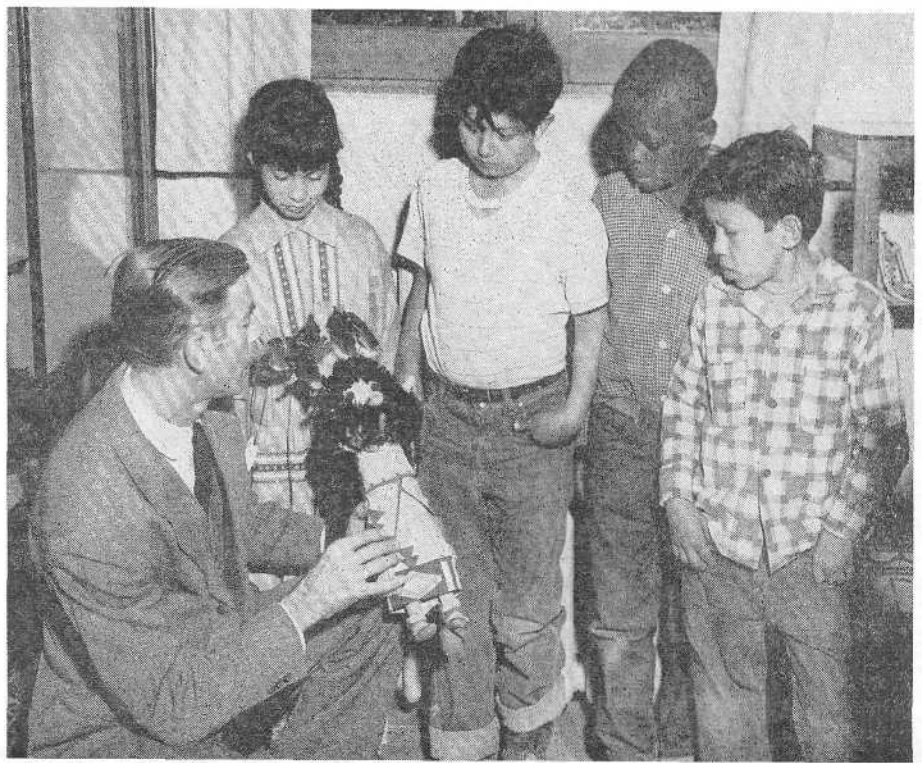
west. The patio is used to highlight traveling exhibits.

The entire lower floor of the two wings is given over to the culture of

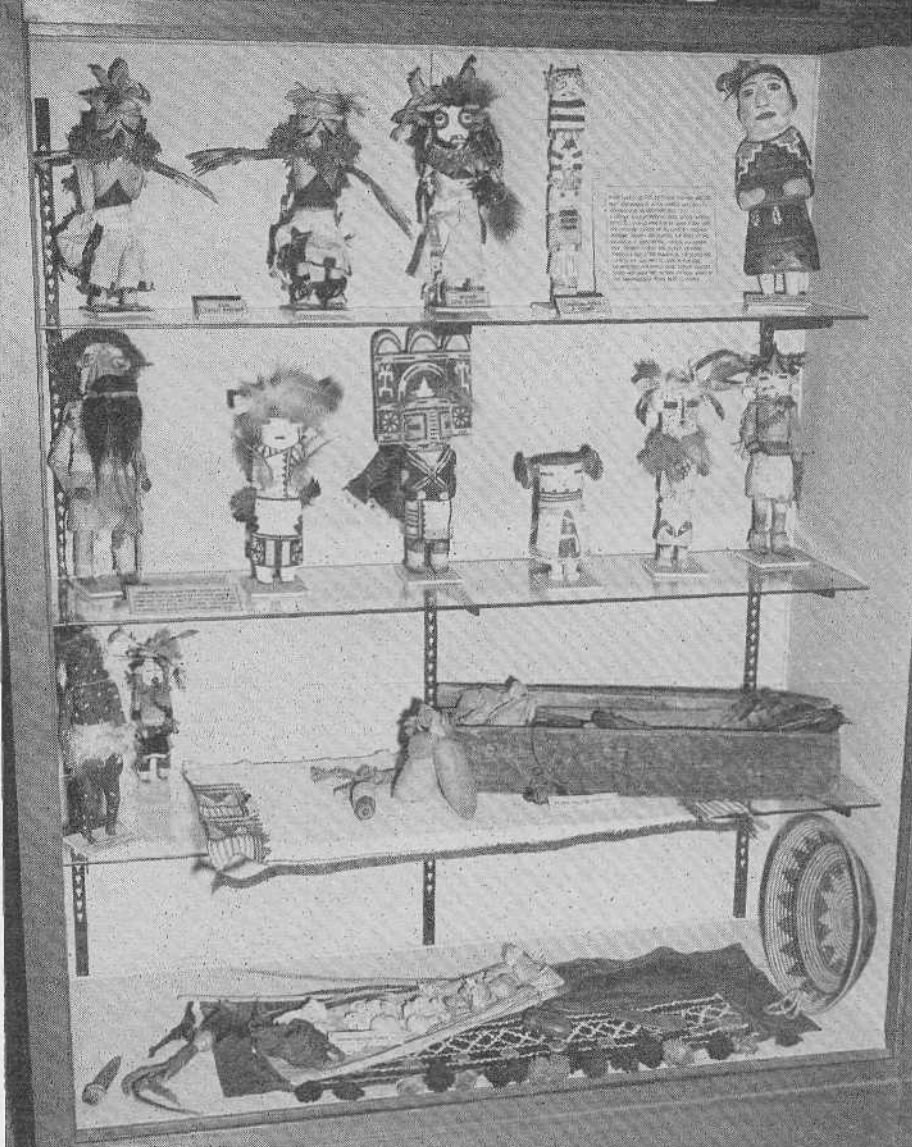
the American Indians. On the second floor are exhibits from the peoples of the Pacific, Africa, Egypt, Mexico and the Spanish Colonial period. One of the finest collections of Navajo rugs in the Southwest is on exhibit here, and the collection of miniature Pima baskets is the best in the country.

The museum founders, Mr. and Mrs. Dwight Bancroft Heard, came to Arizona late in the 19th century. During the years they became increasingly interested in the Southwestern cultures

Museum Curator H. Thomas Cain shows a Hopi Katchina doll to visiting school children.



CEREMONIAL LIFE



Hopi Katchinas on display at the museum. These dolls are made by adults and given to children so that they may learn the over 200 supernatural beings in the tribal religion. On the top row are two eagles, cow, clown and Navajo girl katchinas, from left. On lower shelves are medicine men's kits, Navajo on bottom shelf and Picuris, second from bottom.

and began collecting artifacts. Soon their extensive collection could no longer be contained within their home and in 1927 they started construction of the Heard Museum of Anthropology and Primitive Arts.

Two years later the grounds, building and contents of the museum were endowed to the public. The museum still is maintained by the endowment of the Heards. It receives no public appropriations, nor has it ever charged fees of any kind until the Board of Trustees recently permitted the small charge now made for the rental of films. At present a membership drive is being conducted to supplement the

ever-growing expense of maintaining the museum and to provide for future expansion.

The Heards did not confine their artifact collecting to the Arizona Indian cultures, however. They were world travelers who made thorough studies of the history and culture of the countries and remote islands which they visited before making these trips and thus were prepared to select the outstanding examples of preliterate arts and crafts now housed in the museum. Anthropological material from 45 countries is represented at Heard Museum.

During the past four years the en-

tire museum has undergone a complete renovation with modern museum techniques, lights, colors, maps, printing, explanatory information and arrangements introduced. Local artists have helped in redecorating the building.

"Each exhibit tells a story," curator H. Thomas Cain explains. "They are no longer bundles of dusty items." Every object has been cleaned, polished and brought to light so that the whole museum has indeed "come alive." During this period of face lifting 25,000 items have been worked on and over half have been re-catalogued. Over 500 gifts have been added to the Heard collection in this same period and the research library on the Southwest expanded.

Children are especially welcome at the museum, and there is no hush-hush atmosphere here. Pupils from the Phoenix schools are taken through the museum on guided tours and the lecture series held in the spacious auditorium attracts not a few children as do the Sunday afternoon movies, a television series and many of the traveling exhibits. These museum talks cover a wide range: African safari, Pima Indians, Navajo weaving and Hopi katchina dolls, to mention a few. The museum season runs from November 1 to June 1 and it is open from 10 a.m. to 5 p.m. Tuesday through Saturday and from 1 p.m. to 5 p.m. on Sundays.

Credit for the museum's outstanding improvements goes to Cain. Countless thousands have been enriched through observation, study and research at the museum since its founding, and Cain's work in preserving these treasures is providing new inspiration to museum guests. Last year 35,000 persons visited the museum, a marked increase over previous seasons.

Ranking as one of the leading cultural institutions in Arizona, the Heard Museum has a collection comparable to those of the Museum of Northern Arizona at Flagstaff and the Arizona State Museum on the University of Arizona campus at Tucson.

The Heard family home recently was dismantled and a multi-storied modern apartment building is being erected on the site which adjoins the museum, but the museum is here to stay.

Arizonans and visitors to the Southwest are showing more and more appreciation for what the Heards left. Because of their vision and forethought the Treasure of Monte Vista is available to all who accept the warm invitation to enter this beautiful building.

LIFE ON THE DESERT

Our Camp Visitor Was a Crafty Little Fox ...

Campers frequently find that the richest rewards received from their outdoor experiences result from intimate contacts with Nature's wild offspring. Desert creatures—such as the fox in this story—sometimes reveal an amazing resourcefulness in their efforts to obtain food in a land where the food supply is never a simple problem.

By MRS. JOHN E. PLUMMER

7 OUR SUMMERS ago my husband and I were camped on the Anza Desert of Southern California, enjoying a perfect evening after dinner. The sun had disappeared behind the western mountains and not a rustle of wind disturbed the stillness. To complete the charming setting, a full moon was rising, casting its soft light over the silent desert.

We were deep in quiet meditation when suddenly we realized that we were not alone. A little fox had come near our camp area on his nightly search for food and water.

Fascinated, we watched him repeatedly appear and disappear in the shadows. Hastily we fastened a short length of wire around a large bone and secured it to a nearby rock. Around this lure we scattered small pieces of meat and placed a pan of water there, hoping our visitor would return. We did not have long to wait.

Silently and cautiously, he came out of the dimness. His movements were apprehensive and deliberate. After each short stride forward, he would sit on his haunches, ears erect, and survey everything within range of his vision. Slowly he turned his head from side to side, making further advance only after he deemed it absolutely safe to do so.

Several times he was startled by sounds we did not hear, and then he would leap backwards. He was in no hurry and neither were we, so we waited for the next move.

In the mellow light of the moon we received a second thrilling surprise when a smaller fox, undoubtedly his mate, appeared. Judging from her thin body and shaggy coat, life on the parched summer desert had dealt many meatless days to Mrs. Fox.

Circling the camp wide at first with rapidity and stealth, she appeared un-

real. Then, as though driven by an overwhelming urge to satisfy her need for food and water, she cast aside her fears and slowly approached the bone. She too frequently sat down to observe for possible danger, but soon she was at the pan, greedily lapping water.

At the sound of drinking, Mr. Fox silently joined her and both continued to quench their thirst with only occasional glances in our direction. Then, as suddenly as they had attacked the pan of water, they pounced upon the meat scraps and emitting fierce garbled growls, ravenously began devouring them. We were sitting so near to the animals that we could have reached out and touched them as they fed.

For a time they alternated between the food and the pan of water. Finally, Mrs. Fox again started to circle in

wider and wider arcs around the camp until she faded from sight.

In the meantime, Mr. Fox pounced on the large beef bone and began trying to carry it off. In order to better watch this show, we played a flashlight beam on him and he did not scamper off.

After a few futile attempts, Mr. Fox secured a firm hold on the bone and turned to leave. The look of surprise that crossed his face when he reached the end of the wire was an amusing sight. Startled, he dropped his prize, jumped to one side and then hastily retired to the outer circle. There he sat and pondered the surprising situation. After a long deliberation, apparently he decided that it would be worth another try, and back he came to the bone.

This time he changed techniques. Taking a firm hold of it, he pulled backwards, lying flat at times as if to gain traction in the coarse sand. This did not work either, so he tried jerking at the bone he held in his teeth. On the last violent pull it fell to the ground and Mr. Fox eyed the situation with a most disconcerted look. After a brief pause he renewed his efforts with vigorous tugs, but soon his strength was spent and he sat down next to the bone to review his dilemma and to rest.

Peering intently at us, the narrowed eyes of our midget phantom gleamed in the subdued light of the moon. We spoke in quiet tones to him, which seemed to add assurance to his deter-

Kit fox. Photo by John L. Blackford.



mination and he resumed the struggle for the bone, but this time he seemed content to eat his meal on the spot. He gnawed the meat from the bone and made frequent trips to the water between bites.

While he fed on the bone and marrow, our gaunt little guest alternated from a sitting to a prone position. But, soon the determination to take the bone back to his den returned, and once again he began struggling. Now he tried to bite through the wire, but we knew he would not be able to do this. His boundless cunning, resolute-

ness and patience made us marvel at this creature as he worked at the puzzle confronting him.

Our thought was that he would soon tire of the struggle and leave the scene. Then we would unfasten the wire and when Mr. Fox returned later in the night, as we felt sure he would, he would have no trouble taking home his hard won meal.

But we underestimated our desert friend for in another moment he had freed the bone! Casting an occasional triumphant glance our way, he paused

with the trophy in his jaws as if trying to decide which course through the desert he would take to reach his family.

He placed the bone on the ground, took a last leisurely drink, returned the bone to his mouth and looked our way a final time. He disappeared into the desert night over the bank of a dry wash below our camp.

As soon as he was gone we rushed to examine the wire. The fox had neatly unwound with his teeth the wire loops we had placed on the wire with a pair of pliers.

LETTERS

Burbank's Cacti Lacked Reproductive Ability

Santa Barbara, California

Desert:

There is a well-substantiated answer to the question raised in the July issue as to why cactus is not cultivated by the cattle industry in arid places, and it is this: there are many better forage plants which require the same amount of moisture necessary for cactus. This was the conclusion reached by Dr. David Griffiths who was for many years the horticulturist in charge of the Division of Plant Exploration and Introduction of the Bureau of Plant Industry, United States Department of Agriculture. For many years he carried out exhaustive research with opuntias at the station in Chico, California. My husband, the late E. O. Orpet, was during that period (1917-1920) working with Dr. Griffiths as Chief Propagator.

Unfortunately, Burbank's experiment with the spineless opuntia proved disastrous as a forage plant in Australia. Briefly what happened was that the Australians imported and planted large quantities of spineless cactus pads, which rooted and grew prodigiously. The plants remained spineless only so long as they were propagated by vegetative methods, but as soon as fruit formed and the seeds were distributed by birds, the plants at once reverted to the old spiny forms and there was a terrific problem with spines in the tongues of the cattle. The Australian Government went to work to try to eradicate opuntias, but it was an impossible task until they found the Cochineal bug, a parasite which preys on the prickly pear, and after years of

work and enormous expense they were able to distribute this parasite widely enough to control the plantings.

Dr. Griffiths and Mr. Orpet both worked very hard on this whole problem of opuntias. Dr. Griffiths went all over Mexico collecting every available variety, and they had a big planting at Chico. The upshot of the experiment was Dr. Griffiths' order to "destroy the lot." There are three bulletins which the Department of Agriculture printed, as follows: Bulletin No. 124—The Prickly Pear as a Farm Crop, Bulletin No. 483—The Thornless Prickly Pears, Bulletin No. 140—The "Spineless" Prickly Pears, all written by Dr. Griffiths. The bulletins probably are no longer in print.

This is a very serious matter, since too many people seem not to have heard of the disastrous Australian experiment, and it would be a great pity to have it repeated here in our deserts.

MRS. E. O. ORPET

* * *

San Diego, California

Desert:

Four years ago we built a cabin in the desert at Canebreak Canyon. Because of our good water supply we planted many cacti—both native and foreign varieties—on the premises.

Soon it became apparent that cacti watered during the hot summer months were quickly devoured by rabbits and other vegetable-eating desert inhabitants. The only chance cactus has of surviving in the dry seasons is the natural way of shriveling up to a woody pulp.

Also we planted three lobes of Bur-

bank Spineless Opuntia under a screen cage. They were rather slow to start, but soon took hold—until some small rodents that could squeeze through the half-inch mesh screen found them. In six months the plants were consumed. These opuntias will thrive along the coast and foothills without care, but grown in the mountains they would freeze, and the desert, with its rodent enemies, is too severe.

As spineless cacti will not grow well unirrigated, I imagine cattlemen with the time and water to spare could find a much more palatable food to grow for cattle.

WILBER H. WIER

• • •

Would Kill Rattlers . . .

Rialto, California

Desert:

The July editorial raises an interesting question regarding rattlesnakes and whether or not they should be killed on sight, even when they are found far from inhabited places. I believe they should, unless it could be possible to establish a sanctuary in which rattlers, mice, king snakes and road runners could be confined.

The old timer leading your party of hikers was a practical realist and had I been along, being a good shot with rocks at close range, I would have helped him kill the venomous reptile. The protestors among the hikers sound like sentimental and ignorant softies. Perhaps if one of those people unintentionally stepped on one of the killers, particularly at night, he would change his tune.

The rattlesnake is not aggressive, it will even pull its head and neck out of the way to prevent being stepped on and as for rattling a warning, it will if aroused and has time to do so.

Except in cold weather, anyone out in the desert country, and particularly those not wearing high boots, should never forget the possibility of rattlers being around, and self-preservation demands a sharp lookout.

H. GRAHAM

WOULD PROTECT WILDLIFE IN SAN JACINTOS, SANTA ROSAS

Hunting and trapping of all species of wildlife will be prohibited in the San Jacinto and Santa Rosa mountains of Southern California if a program initiated by the Desert Protective Council at its summer meeting in July is successful.

The Council proposed that the entire mountain area, part of which is now a Bighorn Sheep Refuge, and part a California State Park, be set aside by county ordinance or state enactment as a wildlife sanctuary. Col. James Westerfield of Mecca, California, was named chairman of a committee to work on the project.

Members of the Council pointed out that the increasing use of these Southern California mountains for recreational purposes has created so great a hazard to residents and visitors on the two ranges that the discharging of firearms by game hunters should be forbidden.

Part of the area is now open in season to deer and game bird shooting. Dr. Edmund Jaeger, the naturalist, said: "Only four percent of the population indulges in game hunting, while there isn't a child or adult living who doesn't get a thrill in seeing a Bighorn Sheep along the Pines-to-Palms highway which runs through the area, and the experience is hardly less thrilling when deer are seen crossing the road, as frequently happens." The action of the Council was unanimous.

The Council also voted a letter of commendation to the California State Park Commission for its recent action in refusing to renew certain cattle grazing leases in the Anza-Borrego and Cuyamaca state parks. The California Senate previously had adopted a resolution asking the Park Commission to renew the grazing leases. The Commission took the stand that it had no legal right to do so. The Council asked the Commission to continue its efforts to abolish all grazing in all state parks.

The summer meeting, at the new mountain home of Randall and Cyria Henderson in the San Jacinto Mountains, was attended by 68 members and guests of the Council. The next general membership session of the Council is to be held in October.

NEW RESTRICTIONS PLANNED ON SMALL TRACT DWELLINGS

More stringent regulations governing the construction of Jackrabbit Homestead dwellings in Southern California are indicated by a program recently initiated by the Los Angeles office of the federal Bureau of Land Management.

The Small Tract Act of 1938 authorized the Bureau to lease or sell small

parcels of the public domain to bona fide applicants. In recent years there has been a great land rush in Southern California to obtain these tracts under a leasing program which required that a dwelling of not less than 400 square feet of floor be erected within one year. Most of the tracts have been on the desert, many thousands of them in San Bernardino County. Lacking personnel to classify and appraise the lands as rapidly as applications came in, the Bureau recently announced that 900 of the parcels would be sold at public auction.

Desert property owners protested against the auctions, on the ground that the lands would be bought for speculative purposes, and that with no controlling agency to zone and restrict the improvements, the desert would be cluttered with unsightly structures.

Heeding the protests, the Bureau of Land Management discontinued the auction sales, and the Los Angeles office is now working out a new program.

San Bernardino County has been temporarily closed to all small tract

applicants pending the adoption of a new plan for disposal of the lands. The new program, being worked out by Ernest Palmer, assistant state supervisor for the BLM, Harold Tysk, area land office, and Paul Witmer, manager of the Los Angeles office of the Bureau, would be a cooperative arrangement between the federal government and local county planning commissions. The county in which the land is located would assume the responsibility for zoning and restricting all building improvements, and the federal government's issuance of a small tract title would be dependent on compliance with the county rules.

Supervisor Palmer reported late in July that supervisors and planning commission authorities in Riverside, San Bernardino, San Diego, Imperial and Inyo counties in Southern California have indicated their willingness to cooperate in the program. The problem has been especially acute in Southern California because more applications for small tracts have been made in this area than in all the other western states combined.

Hard Rock Shorty of Death Valley



"Naw, we don't need a cemetery here. Nobody ever dies."

Hard Rock Shorty was answering a question asked by one of the dudes who stopped in at the Inferno store occasionally to ask about the roads, and buy a bottle of cold soda.

The visitor said he was an undertaker, and had come out West to look for a new location. "I've read about all the shooting that goes on at these desert mining camps," he explained, and I thought I might find a good boom town that needed a funeral parlor."

"Long as I can recollect we only had one funeral in Death Valley," Hard Rock said. "That was nearly 30 years ago."

"Usta have a lot o' outlaws livin' in them caves up at the head o' Eight Ball crick. They wuz bank robbers an' horse thieves—anything to make a dishonest dollar. The law finally

came out lookin' fer 'em an' they headed north.

"The leader o' them badmen wuz a feller they called Butch. Don't know what the rest of his name wuz. Butch wuz doin' all right up in Montana where he landed after he left Death Valley. Had a lot o' notches on his gun."

"But the sheriff finally caught up with 'im, an' Butch died a shootin', with his boots on. Seems Butch'd told his pals that when his time cum he wanted to be buried down in Death Valley—in the hottest spot they could find. Guess he figgered he'd be a little closer to hell that way."

"They sent word down here an' some of us ol' prospectors arranged to have a burial. Got Indian Joe to dig the grave an' when the corpse arrived we went out to see the job wuz done right. We didn't care much fer Butch—but after all, when a man's dead his wickedness is over."

"Jest before the box was lowered into the hole, some o' the boys thought they'd like to have a last look at the ol' outlaw, so they pried off the lid. When the Death Valley air hit the body there wuz a stir. Ol' Butch turned over, kicked the lid off o' that coffin an' danged if that ol' buzzard didn't start to climb outta the box. The boys had to shoot him agin so they could finish the buryin'."

Here and There on the Desert . . .

ARIZONA

Observatory Sites Tested . . .

PHOENIX—National Astronomical Observatory, in Arizona to search for a possible \$5,000,000 observatory site, recently began a year-long testing program on four sites in the state. Evaluations will be made by specially constructed open-air truck trailers equipped with 16-inch telescopes at the Papago Reservation and areas south of Winslow, Williams and Kingman.—*Phoenix Gazette*

Visitor Center Dedicated . . .

GRAND CANYON—Formal ceremonies marked the opening of the Grand Canyon National Park's Visitor Center located just east of Grand Canyon village. The building will serve as an information center and will contain exhibits of the area's Indian neighbors, history, wildlife, plant life and geology. The center also will house the Park's scientific collections and a library pertaining to the area.—*North-ern Yavapai Record*

Park Status Proposed . . .

HOLBROOK—National Park Service Director Conrad Wirth said that he is preparing a bill which would change the status of Petrified Forest National Monument and adjacent areas of the Painted Desert to a national park, if approved by Congress. One of the conditions to be met before the proposed change can be made is acquisition of certain state land needed for the proposed park, Wirth added.—*Holbrook Tribune-News*

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Indian Land Development . . .

PARKER—A group of prominent Arizona businessmen and companies submitted a proposal to the United States Department of the Interior through the Area Office of the Bureau of Indian Affairs for the leasing and development of 71,000 acres of agricultural lands on the Colorado River Indian Reservation near Parker. If accepted, the group's plan will complete without expense to the federal government the gravity flow system of irrigation actually commenced in 1867. The group, known as River Valley Farms, has proposed the formation of an irrigation district for the operation and maintenance of the project, and a partnership arrangement with the Colorado River Indians.

New Town for Pensioners . . .

WICKENBURG—Plans for a new community for retired persons were announced by developer Ben Schleifer. The new community would be north of Wickenburg and known as "Plato's Dream." Schleifer, builder of Youngtown northwest of Phoenix, said homes in Plato's Dream would start at \$3900. Part of his plan is to provide guaranteed services for Plato's Dream residents including living quarters, food and medical care for the rest of their lives, for which they would turn over their assured income of no less than \$160 per month to the management.—*Phoenix Gazette*

Bighorn Sheep Trapping Ends . . .

KOFA GAME RANGE—Summer rains have ended another season of desert bighorn sheep trapping by Kofa Game Range personnel. This is the third year of the program, but the first that any sheep actually have been caught. The animals were transported to the Big Bend National Park in Texas.—*Yuma Sun*

CALIFORNIA

River Bank Park Proposed . . .

BLYTHE — The Interior Department has proposed that the entire 250-mile stretch of the lower Colorado River be designated an interstate recreation area and be placed under the jurisdiction of the National Park Service. Present occupants of the reclamation withdrawn lands, known as squat-

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ters because they do not own the land on which they live, would be required to vacate if the plan is carried out. No direct reference was made to farm lands in the area although provision was made to include "when possible" existing trailer parks, motels and lodges into the master plan — but owners would be required to vacate a 200-foot strip along the river. — *Palo Verde Valley Times*

Picacho Park Development . . .

EL CENTRO — The establishment of Picacho State Park will be expedited, according to an announcement by the Director of Public Resources following the settlement of inter-departmental disputes by various government agencies. Money has been appropriated by the State for purchase of private lands in the park area and the construction of camping and sanitary facilities, but additional funds are needed to construct a suitable road to the site.—*Imperial Valley Weekly*

Transmitter Controversy Flares . . .

DEATH VALLEY — The dispute over the installation of a radio transmitter by Inyo County on Rogers Peak, just inside Death Valley National Monument, continued with the Park Service standing adamant in its refusal to grant permission for the station, and county officials still trying to change this attitude. Park Service officials said Aguerreberry Point, where the Park Service has some radio facilities, would be the best location for the county transmitter inasmuch as such an installation would not "disfigure the natural scene."—*Inyo Independent*

Sculptor Moves Statues . . .

YUCCA VALLEY — Most of the nearly 50 statues of Biblical figures at Desert Christ Park have been removed by their creator, Sculptor Antone Martin, who earlier had knocked their noses off as a protest against his partner, Rev. Eddie Garver's alleged attempts to commercialize the park. Attorneys are attempting to settle the dispute.

Rising Water Suit Scheduled . . .

INDIO—The \$450,000 suit of Desert Beach Corporation for damages caused by rising waters of the Salton Sea several years ago, will come to trial in Indio on September 26. The suit, against Coachella Valley County Water District and Imperial Irrigation District, was revived two years ago after being thrown out of court. It charges waste water from the two districts poured into the sea during the late 1940s and early '50s and caused Salton Sea to rise sufficiently to inundate Desert Beach.—*Coachella Valley Sun*

Mojave River Dam Proposed . . .

VICTORVILLE—The Army Corps of Engineers has recommended the construction of a \$3,000,000 flood control project for the west fork of the Mojave River. The project was first urged by Victorville interests nearly 20 years ago. Recommended in the Army study were a 40,180-acre-foot reservoir and a dam with a crest length of 443 feet and a height of 138 feet above streambed. — *Desert Valley News*

NEVADA

Lake Mead Rising . . .

BOULDER CITY—Snow melted by heavy rains on the west flank of the Rocky Mountains has caused Lake Mead to reach its highest level since 1953. Engineers expect the lake to fill to near its normal operating level this year, and if there is as much water available next year, the dam is likely to fill up to the Hoover Dam spillway crest, they added. In one month—June—the 115-mile-long desert lake rose 47.7 feet.

National Park Drive Launched . . .

CARSON CITY — A two-pronged drive aimed at obtaining for the state its first national park recently was launched by the Nevada Board of Economic Development. The board passed a unanimous resolution urging the National Park Service to make a careful and thorough survey of the Mt. Wheeler-Lehman Caves area of White Pine County; and approved the expenditure of \$2500 to cover partial cost of a color-sound movie of the area as an added attempt to "sell" federal authorities on the national park possibilities of the Great Basin area.—*Nevada State Journal*

Missile Test Site Purchased . . .

VIRGINIA CITY—Curtiss Wright Corporation disclosed purchase of a 150-square-mile missile and atomic test site near Virginia City, and negotiations are underway to increase the total area to over 300-square-miles. The company revealed no other details of the project. Included in the purchase was Marlette Lake, its watershed and the water rights of way from the lake to Virginia City plus water rights on the Truckee River.—*Phoenix Gazette*

Deer Repellent in Use . . .

SMITH VALLEY — Nevada Fish and Game Commission personnel are conducting an experiment in the Smith Valley region into the usefulness of a new odor chemical which is supposed to be offensive to the keen olfactory organs of deer. In the past, these animals have caused damage to the area's alfalfa crops.—*Nevada State Journal*

Ichthyosaur Replica Planned . . .

IONE—Summer project at the Ichthyosaur State Park (*Desert*, Dec. '55) is the building of two 70-foot long and 14-foot high walls, one to show in relief the ichthyosaur as scientists believe it looked in its natural form; the other wall to show the actual bone structure of the huge marine monster. —*Fallon Standard*

New Park Commission Named . . .

CARSON CITY—Appointments to the state's new park commission, reorganized by this year's legislature, were announced by Governor Charles H. Russell. Named were Thomas W. Miller, chairman of the old commission, Mrs. Louise M. Marvel, Mrs. Margaret M. Wheat, Chris Sheerin, Norman E. Hanson, J. E. Brinton and R. F. Perkins.—*Pioche Record*

Doctor Pledged \$650 Monthly . . .

AUSTIN—With the nearest doctor 100 mountain miles away, Austin appears well on the way to obtaining a doctor of its own following a decision by the county commissioners to pay \$400 a month as an assured salary for an M.D. The county action, together with individual monthly payments pledged by Austin citizens, makes it possible for the community to assure a doctor an income of at least \$650 a month, plus whatever he will be able to make from private practice which, it is believed, will add considerably to his income.—*Reese River Reveille*

NEW MEXICO

Son to Finish Blanket . . .

CHIMAYO—The loom of a master weaver of Chimayo blankets, stilled by his death, was busy again as the son of the late Antonio Mier completed the unfinished blanket left in it. Marin Mier, a California machinist, took leave of absence from his job to finish his father's last blanket.—*New Mexican*

San Juan Ruins Explored . . .

NAVAJO DAM SITE—Archeologists of the School of American Research and Museum of New Mexico returned to the site of the proposed Navajo Dam for further excavation work. Purpose of the program is to salvage priceless historical material from some of the many prehistoric and historic Indian ruins in that area before it is flooded by water held back by the dam.—*New Mexican*

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Fort Restoration Underway . . .

POT CREEK—Texas Technological College archeology students have begun searching into remains of Cantonment Burgwin, the pre-Civil War fort south of Taos which they will rebuild as a museum for northern New Mexico. Under the direction of Dr. Fred Wendorf, students have traced posts which formed the walls of the kitchen and mess hall, have outlined the stables, are following remains of puncheon floors in what was once the enlisted men's barracks, and have traced fireplace foundations. — *New Mexican*

Navajo Assimilation Urged . . .

GRANTS—Navajo Tribal Council Chairman Paul Jones called on Grants area businessmen to continue their efforts to help the Navajo raise his economic status with off-reservation employment. Jones declared that it was the Council's aim to help assimilate the Navajos into the society around them so that they may live "like other Americans from coast to coast and get out of the confines of that museum of a reservation." He blamed lack of education as a major factor in the Navajo's inability to compete successfully with his white neighbors. Three thousand Navajo children still are not in school this year, but Jones noted marked improvement in the situation. Although 150 Navajo youngsters were graduated from high school last spring, that number will rise to 1500 by 1965, he estimated.—*Grants Beacon*

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SECTIONIZED COUNTY maps — San Bernardino \$1.50; Riverside \$1; Imperial, small \$1, large \$2; San Diego 50c; Inyo, western half \$1.25, eastern half, \$1.25; Kern \$1.25; other California counties \$1.25 each. Nevada counties \$1 each. Topographic maps of all mapped western areas. Westwide Maps Co., 114 W. Third St., Los Angeles, California.

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Beetles Threaten Forests . . .

SANTA FE—Two species of bark beetles are stripping a vast area of northern New Mexico of its pinyon and ponderosa pine. Dr. C. Massey of the Forest Insects Division of the Rocky Mountain Forest and Range Experiment Laboratory, estimates approximately a million acres of trees already are dead or currently being killed by the insects. From Santa Fe, the area of dead and dying trees extends northward more than halfway to Taos, southward to the Albuquerque area, east almost to Las Vegas and west up to the higher slopes of the Jemez Mountains around Los Alamos. The beetles are the *Ipslecontei* (Arizona pine engraver) and *Dendroctonus barberi* (Southwest pine beetle). Senator Clinton Anderson has called on the Department of Agriculture to provide funds from its current budget for the purpose of controlling the insects.—*New Mexican*

UTAH

Salt Lake Level May Rise . . .

SALT LAKE CITY—A decreasing water level of Great Salt Lake, which has averaged nine inches annually for the last four years, may be changing, U. S. Geological Survey engineers believe. The 12-year period preceding 1952 showed consistent rising of the water level and a return to this cycle may be forthcoming, according to findings by the engineers. Over the long range period, however, Great Salt Lake shows a gradual shrinking.—*Salt Lake Tribune*

Four Climb Totem Pole Peak . . .

MONUMENT VALLEY — Four expert rock climbers, after four days of grueling and superhuman effort, became the first to reach the 25x25 foot summit of the Totem Pole, a slender 800-foot high sandstone monolith. The four were William Feuerer, Mark Powell, Jerry C. Gallwas and Don M. Wilson of the rock climbing section of the Sierra Club of California. The final assault was made more hazardous when a strong wind swept the desert, swinging the climbers on their slender lines more than 20 feet out from the sheer wall, and banging them back again time after time.—*Salt Lake Tribune*

Park Board Created . . .

SALT LAKE CITY — Governor George Clyde put a State Park and Recreation Commission into operation recently with the appointment of five unpaid commissioners on authority of the 1957 Legislature. Named were Harold P. Fabian, Arthur F. Bruhn, Aldin O. Hayward, John Jorgensen and A. Hamer Reiser. — *Salt Lake Tribune*

Glen Canyon Study Assured . . .

KANAB—University of Utah officials and representatives of the National Park Service agreed to a \$110,000 contract under which extensive archeological studies will be conducted in the area to be covered within 10 years by waters of Glen Canyon reservoir. Dr. Jesse D. Jennings, head of the university's department of anthropology, will direct the study. — *Salt Lake Tribune*

Glen Damsite Homes Planned . . .

KANAB—Bids were expected to be called for construction of 200 permanent homes at the Page, Arizona, Glen Canyon Dam townsite. The Bureau of Reclamation also announced that it will call for bids for the leasing of an additional 150 lots in Page for construction of privately financed housing.—*Salt Lake Tribune*

MINES AND MINING

Falling Metal Prices Force Mine Closures

Declines in mineral prices have forced the closure of several Western mines with many others reportedly making ready to stop work. Mining men blame the price drops on a ruthless dumping of metals on American shores by companies engaged in low-wage foreign production.

Hardest hit was the lead-zinc industry. American Smelting & Refining Co. plans to close three mines in Colorado, New Mexico and Washington. Combined Metals Reduction Co. has closed its Gunnison, Colorado, operation, and unless an improvement in prices comes by late summer, the firm plans to shut down its 100-employee Pioche District, Nevada, operation.

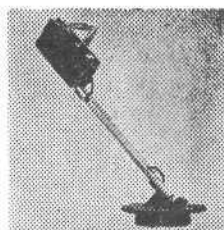
American Smelting and Refining's decision affects 200 New Mexico min-

ers and millmen at the Silver City mine and Deming custom mill.

The Chief Consolidated Mining Co. suspended operations at its Eureka-Tintic, Utah, district mine, affecting 70 miners. Another lead-zinc producer, the Johnson Mine located 18 miles east of Benson, Arizona, was expected to release 130 workers.

Unfavorable tungsten price trends were blamed by Wah Chang Mining Corporation for the curtailment of mining and milling operations at its Bishop, California, Black Rock and Tempiute, Nevada, Lincoln mines.

Copper prices also were low. Anaconda reduced its Nevada mine operations from a six to a five-day week, thus lowering the state's mine production by 17 percent. Falling copper



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prices were blamed for a \$55,000,000 reduction in mine property valuation in Arizona.

Round Mountain, Nevada . . .

The mammoth gold dredging and milling operation at Round Mountain, closed since the fall of 1952, will be reactivated "as soon as possible," officials of the Fresnillo Company of Mexico announced. A company representative said it is likely the payroll will exceed that of the past, when over 100 men were employed at times. — *Tonopah Times-Bonanza*

Aurora, Utah . . .

Western Clay and Metals Company is processing bentonite at its Aurora mill for the Macco Corporation of Paramount, California. The mineral, used in highway construction work, is being mined at the Bosshardt properties near Redmond. The Aurora mill will continue processing the company's own product, Fullers Earth. — *Salina Sun*

Farmington, New Mexico . . .

Shell Oil Company has scheduled drilling of 100 wells this year in Paradox and San Juan basins, the firm's Farmington area production department said. Forty of the wells are due to be drilled in San Juan County, Utah, and 60 in the Bisti, New Mexico, field. — *Salt Lake Tribune*

Phoenix, Arizona . . .

The Arizona copper miner has enjoyed the highest weekly earnings of any worker in the United States, according to the Arizona Department of Mineral Resources. And furthermore, wages of the Arizona copper miner have more than kept pace with his output and his cost of living, as shown in a report issued by the department. The state miners' annual wage (not including fringe benefits) averaged \$5966 in 1956. — *Arizona News*

Eureka, Nevada . . .

Flexiform Engineering and Mining Company of San Francisco and the Eureka Hamburg Mining Company recently signed an agreement whereby the former concern will work on a royalty basis the Eureka Hamburg's mining properties in Nevada. Included in the operation is the Uncle Sam Mine which produced \$3,000,000 in gold-silver-lead ore before its closure in 1923. High grade ore will be shipped to Salt Lake City for smelting while low grade and mill ore will be milled nearby and the concentrates shipped to Salt Lake City. — *Eureka Sentinel*

Chicago, Illinois . . .

Argonne National Laboratory disclosed that the cost of producing electricity for household use with its experimental nuclear reactor is running about a nickel per kilowatt-hour. This compares with a cost of half to one cent per kilowatt-hour in conventional power plants across the country. However, spokesmen for Argonne and the Atomic Energy Commission point out that production of electric power from nuclear sources still is in the experimental stage and the cost is expected to be reduced. — *Phoenix Gazette*

Las Vegas, Nevada . . .

Plans for the construction of a \$2,-000,000 industrial lime plant at Arrolime, 19 miles northwest of Las Vegas, were announced by United States Lime Products Corporation, a Flintkote Co. subsidiary. According to company officials, the plant will have a 400-ton-per-day capacity. Production will include lime flux and lime products for use in steel making and for certain chemical industries. — *Nevada State Journal*

Los Angeles, California . . .

Construction contracts were let for over half of the 750-mile Four Corners to Los Angeles crude oil pipe line, the Four Corners Pipe Line Company announced. First portions of the line to be constructed are those near its two terminal points—from the Aneth field in Southern Utah to Seligman, Arizona; and from the Colorado River to Olive, California. Work on the latter section is not expected to begin until October 15 while the Aneth-Seligman line already is under construction. — *San Juan Record*

Reno, Nevada . . .

The Bureau of Mines announced perfection of a novel method—similar to making coffee in a percolator—to recover manganese from certain low-grade ores of Nevada. Known as percolation leaching, the process recovered from 78 to 97 percent of the manganese from soft wad-type ores that could not have been handled by conventional gravity concentration. In the process, sulphur dioxide gas is passed upward through crushed ore piles, followed by a downward movement of percolating water. — *Pioche Record*

McGill, Nevada . . .

Kennecott Copper Corporation's Nevada Mines Division disclosed plans for a \$1,500,000 skip-hoist haulage system to remove waste and ore from its big Liberty Pit in White Pine County. When completed in the second quarter of 1958, the skip-hoist will make available for reduction extensive fringe ores on the perimeter of the pit where necessary stripping of over 2,000,000 tons of overburden is expected to get underway shortly. — *Salt Lake Tribune*



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Johannesburg, California . . .

The first step in a sizeable mining venture aimed at recovering tungsten and some gold ore from surface deposits in the hills between Johannesburg and Red Mountain recently was completed when a 400-ton bucket sand line dredge was moved intact to its new location. The monstrous dredge, high as a three-story house, had to be towed 18 miles across the desert. The moving operation took six weeks.—*Indian Wells Valley Independent*

Nye County, Nevada . . .

A new fluorspar open pit mining operation will begin operation in Nye County, according to the Western Fluorspar and Lead Mining Company of Portland, Oregon. The firm has leased five claims from Wright C. Huntley of Bishop, California. The property is situated east of the Cloverdale Ranch in the Toiyabe Forest. Elevation is 6100 feet.—*Pioche Record*

Hamilton, Nevada . . .

East Standard Corporation announced the start of large scale mining and milling operations at the old Belmont mine and mill near the ghost town of Hamilton in western White Pine County. The operation primarily is based on 46,000 tons of milling ore blocked out in the Belmont mine by Tonopah Belmont Mining and Development Company engineers in 1926. Another 25,000 to 30,000 tons of ore also are available from other mines in the area, East Standard officials said.—*Nevada State Journal*

Pershing County, Nevada . . .

Erection of a 100 ton Gould mercury furnace in Pershing County, if sufficient ore can be assured, is the plan of the Metals Exploration Company. The company's president, George H. Salmon, said that he was out to enlist as many mercury claim holders as possible to assure a daily 100 ton operation. At last report Salmon had eight property owners signed up.—*Nevada State Journal*

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Tombstone, Arizona . . .

A uranium strike of possible major proportions recently was made in the Whetstone Mountains, 24 miles west of the old mining town of Tombstone. Otis B. Taylor and Fred E. Drake, both of Benson, located the mine which has shown assays of 0.22 to 0.56. Principal minerals in the dikes are autunite, torbernite, kasolite, uraninite and pyrite. — *San Pedro Valley News*

Window Rock, Arizona . . .

Paul Jones, chairman of the Navajo Tribal Council, announced a public bonus-lease sale of 7900 acres of tribal lands surrounding various oil pools in San Juan County, Utah. September 15 was set as the tentative date for the bonus bidding at Window Rock. The council will lease the acreages for oil and gas drilling to the highest bidder. The council retains a 12½ percent over-riding royalty and receives rental payments in addition to the bonus money.—*Salt Lake Tribune*

ANSWERS TO DESERT QUIZ

Questions are on page 16

- 1—Gulf of California.
- 2—A lizard.
- 3—Creamy white.
- 4—Borax.
- 5—Lapidary.
- 6—Southern Arizona.
- 7—Arizona.
- 8—Navajos.
- 9—Fremont River.
- 10—Wyoming.
- 11—Green River.
- 12—Gold.
- 13—Vernal.
- 14—Saguaro.
- 15—Weaving.
- 16—Roosevelt dam.
- 17—Desert Willow.
- 18—Raton Pass.
- 19—Window Rock.
- 20—Apache.

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GEMS AND MINERALS

CALIFORNIA FEDERATION ELECTS JACK KLEIN

Jack Klein of the Mojave Desert Gem and Mineral Society was elected president of the California Mineralogical Federation at the recent Gem-O-Rama convention and show. Don Graham, El Dorado County Mineral and Gem Society, will serve as mineral vice president and Howell Lovell

of the Gem and Mineral Society of San Mateo, lapidary vice president. Others elected were Vervely Carnahan, Compton Gem and Mineral Society, re-elected secretary; Ken Tharp, Whittier Gem and Mineral Society and Mineral Society of Southern California, treasurer.

The 1958 convention and show will take place at the National Orange Show grounds in San Bernardino.—Psephite

MORGAN HEADS NATIONAL MINERAL ORGANIZATION

Vincent Morgan of Boron, California, chief chemist at the United States Borax and Chemical Corporation's mine in that community, recently was elected president of the American Federation of Mineralogical Societies. Morgan was vice president of the Federation last year and is a past president of the California Federation of Mineralogical Societies.

Also named to office were Hazen T. Perry of the Midwest Federation, vice president; Henry G. Graves of the Eastern Federation, second vice president; Will Sanky, Texas, third vice president; James F. Hurlbut, Rocky Mountain Federation, secretary; and re-elected treasurer was Mrs. Helen M. Rice of the Northwest Federation. Ben Hur Wilson, first American Federation president, was re-elected historian.

Next year's National Gem and Mineral Show and annual meeting of the Federation will be held in Dallas, Texas, Morgan announced.



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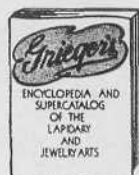
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It would be well for all crystal and gem collectors to memorize one of the most precise definitions ever written about a crystal. It appears in *Precious and Semi-Precious Stones* by Michael Weinstein: a crystal is "a naturally produced solid of a definite form, bounded by smooth surfaces and possessing definite internal structure."

Collectors will find this a simplified answer to the frequently asked question regarding crystals and their basic difference to other minerals. The crystal's external form is an expression of its internal form and here we see the chief difference between a natural crystal and an artificially produced glass. Glass has no definite internal structure, it has not developed from a smaller to a larger form and its internal particles are irregularly arranged and in no way connected with one another.

On the other hand, the natural shape and internal atomic arrangement of the crystal is of great importance. These arrangements have led to the classification of crystals into six systems: isometric, tetragonal, hexagonal, orthorhombic, monoclinic and triclinic. Each system refers to a constant number of planes of symmetry.

Crystals which are broken, waterworn or even distorted can be identified by close attention to their structure, crystal properties and other factors such as hardness, cleavage, heat and electrical effects. — N. Moore in the Compton, California, Gem and Mineral Club's *Rockhounds Call*

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Mojave Rockhounds Await Sept. 14-15 Randsburg Show

Plans for the September 14-15 Randsburg, California, Old Timers' Celebration gem and mineral show were announced by Chairman Della Gerbracht. This year's event will be a "neighborhood show," she said, with entries expected from the China Lake Naval Ordinance Test Station Rockhounds, show hosts, Mojave Mineralogical Society of Boron, Searles Lake Gem and Mineral Society of Trona, and the Kern County Gem and Mineral Society of Bakersfield. There will be no entry fees.

Scheduled to be held in conjunction with the gem and mineral show are special competitions for purple glass displays, Indian artifacts, polished desert woods, desert photographs and high grade ore specimens from the Mojave Desert's famous old mines. In the latter category both metallic and non-metallic classifications have been established and entries must be made by the owner of the mine from which the specimen came or his bonafide agent, and the specimen must have been removed from the property within the past two years.

The Celebration begins on the evening of the 13th with donkey baseball at Johannesburg and a free dance at the Legion Hall in Randsburg. On the 14th and 15th mine tours will be conducted along with hard rock drilling contests, games, concessions, and the gem and mineral show.

These gem and mineral shows also are scheduled for September and October:

- Aug. 29-Sept. 2 — Northridge, California. Mineral Dealers Show at Devonshire Downs Fairgrounds.
- Aug. 31-Sept. 2 — Tacoma, Washington. Northwest Federation of Mineralogical Societies annual convention and show at Armory.
- September 14-15 — Antioch, California. Lapidary Club's annual hobby show at Fairgrounds.
- September 14-15—Gresham, Oregon. Mt. Hood Rock Club show.
- September 21-22—Benicia, California. 5th annual show at Veterans' Memorial Hall.
- September 21-22 — Salem, Oregon. Willamette Agate and Mineral Society's annual agate and mineral show at State Fairgrounds.
- September 21-22 — San Jose, California. Santa Clara Valley Gem and Mineral Society's annual show at I. E. S. Hall.
- September 22-25—Bremerton, Washington. Kitsap Gem and Mineral Society's annual show at County Fairgrounds.
- September 28-29—Eureka, California. Humboldt Gem and Mineral Society's 4th annual show at Redwood Acres.
- September 28-29 — Renton, Washington. Geology and Gem Club's annual show at Williams and Swanson Showroom.
- September 28-29 — Bellflower, California. Delvers Gem and Mineral Society's 7th annual show at Simms Park Auditorium.
- October 3-13—Fresno, California. Gem and Mineral Society's Fall Show held in conjunction with District Fair.
- October 5-6—Los Angeles. Lapidary Society's annual show at Van Ness Playground Auditorium, 5720 2nd Avenue.
- October 5-6—Seattle, Washington. Regional Gem and Mineral Show at Civic Auditorium.
- October 12-13—Hollywood, California. Lapidary and Mineral Society's 10th annual

- exhibit at Plummer Park, 7377 Santa Monica Blvd.
- October 12-13—Topeka, Kansas. Gem and Mineral Society's annual rock and mineral show at City Auditorium.
- October 12-13 — Napa, California. Napa Valley Rock and Gem Club's Fall Show at Fairgrounds.
- October 19-20—North Hollywood, California. San Fernando Valley Mineral and Gem Society's annual gem and mineral show at Victory-Van Owen Recreation Building, 12240 Archwood St.
- October 19-20—San Francisco, California. Gem and Mineral Society's annual show at Scottish Rite Auditorium.

- October 19-20—Trona, California. Searles Lake Gem and Mineral Society's annual show at Recreation Center.
- October 26-27—Burbank, California. Lockheed Employees Rockcrafters Club's 2nd annual show at 2814 Empire Ave.

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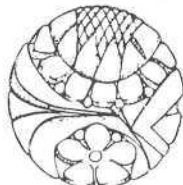
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SAWDUST IN TUMBLER HELPS POLISH STONES

The following tumbling procedure has proven successful for a large scale operation: To each 50 or 60 pounds of rock material use five gallons of water; tumble 12 to 14 days with three pounds of coarse grit; tumble four to five days with three pounds of 600 grit; tumble five to six days with one pound of polishing grit; then cover heavily with sawdust and half cup of Tide detergent, tumble about 16 days, adding sawdust as needed to keep thick mat over the rocks. — Austin, Minnesota, Gem and Mineral Society's *Achates*

These new officers were elected by the Wichita, Kansas, Gem and Mineral Society: George Michener, president; David Kimball, first vice president; Jesse Cook, second vice president; Mrs. M. W. Taylor, third vice president; Mrs. Duane Pierce, secretary; Stephen Lee, treasurer; Mrs. Walter Broder-son, editor; Joe Townsend, director.

Meerscham, which literally means "sea foam," is an altered serpentine that is found floating in the seas near Asia Minor. Because it is easily worked and takes a good polish, meerscham is used for pipe bowls. The white clay-like material floats in dry masses.—Evansville, Indiana, Lapidary Society's *News Letter*

Glued Crystals Give New Life to Culled Cabochons

GRINDING WHEELS SHOULD BE RUN AT TOP SPEEDS

For economy, efficiency and greater hobby enjoyment, speeds approaching the maximum operational limits should be observed in the grinding of rocks.

A surface speed of 5000 feet per minute with plenty of water lubricant and plenty of pressure is ideal for rounding off the edges of a sphere in the making. To grind off the sphere's high spots, use the same surface speed but less pressure, and grind dry which allows better sight of the spots that are to be removed. This grinding operation should take a total of 10 minutes on a three-inch marble sphere.

In general, soft wheels are used on the harder materials, since dulling the wheel more rapidly necessitates a faster removal of the dulled particles. Harder wheels can be used for the softer materials.

A wheel that is too hard for the work to be done may glaze and refuse to cut. A wheel that is too soft will wear away too rapidly. — George Heald in the Verdugo Hills, California, Gem and Mineral Society's *Rockhound News and Views*

New Officers of the Mineralogical Society of Southern California are Deac Flick, president; Eugene Singer, vice president; Connie Flick, secretary; Ray Bittman, treasurer; Gus Meister, federation director; John McCarty, Marna Gilbert, Grant Ostergard, Edward Adams, Don Harding, Aubert Johnson and Robert Brewer, directors.

Euclase, because of its rarity, seldom appears outside of large collections. It resembles the aquamarine and both are silicates of beryllium and aluminum. Euclase's color never varies from a delicate blue and green tint. Only two localities—the Urals in Russia and Brazil—have yielded the gem material. — East Bay, California, Mineral Society *Bulletin*

To brighten tarnished gold jewelry, rub it lightly with a toothbrush dipped in ammonia and then baking soda.—*Matrix*

Many cabochons have been culled from collections because they have fallen short of lapidary expectations. But because of time and effort spent on them, instead of being discarded, they have been stored away out of sight. On some, the shape might have just missed being true. Others perfectly shaped and polished failed in the necessary quality to spark another rockhound's collecting spirit. If, for any reason, they lacked uniqueness desired in a final analysis for a cab's perfection, they were hidden away.

One method of utilizing such stones was recently made by Lillian Morrell who glued specimens of angel wing calcite onto a beautifully polished but otherwise "unglamorous" amazon stone cabochon. The fragile beauty of the mineral specimen complements the pale green of the stone, and the cab's background emphasized the delicate tree-like formation of the calcite.

Then she glued a tiny group of dark brown endliche crystals atop a small highly polished slab of clear agate. The results were refreshingly beautiful.—Mary Blair in the Montebello, California, Mineral and Lapidary Society's *The Braggin' Rock*

The Topeka, Kansas, Gem and Mineral Society has scheduled its annual rock and mineral show at City Auditorium for October 12-13. All interested clubs, club members and individuals are invited to place exhibits in the show. Information can be obtained from J. W. Tyler, 812 Chester, Topeka, Kansas.

After polishing an agate with cerium or tin oxide on a felt wheel, polish again with Linde A on a muslin buff. This will result in a higher luster. Try adding a few drops of liquid soap to the water you use for mixing cerium, tin or chrome oxide. It will make polishing much easier and faster as the soap holds the polishing compound to the wheel longer.—*Template*

Precious garnet cut cabochon is called "carbuncle," while coarse garnet is used for an abrasive.—*Evansville News Letter*

ARTIST MAKES PLATE GLASS LOOK LIKE FANCY MARBLE

A San Francisco artisan, highly skilled in working marble but realizing that the salt air and fog of the area was conducive to the etching of fancy marble, started out with the idea of laminating plate glass to the surface of marble to protect it.

Soon he abandoned this idea, and instead, applied various colored paints to the back surface of plate glass. Threads of silk were dipped into different paints and with great artistic skill pulled through the still wet first coat of paint on the glass. Over the back of all was placed an insulating coat of paint. The finished product, used for the facade of a famous San Francisco restaurant, appears to be fancy marble.—*The Mineralog*

"Silk" in a gemstone is a reference to corundum or rutile needles which give the stone a flash of reflected light resembling that produced by fabric—hence the name.—*Template*

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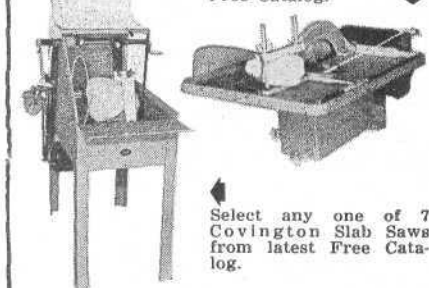
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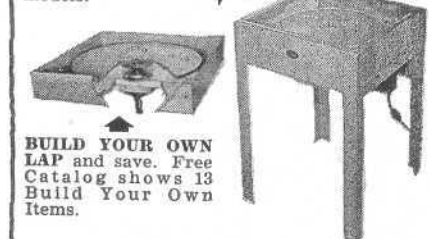


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AMATEUR GEM CUTTER

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

Agate sometimes has been referred to as moonstone, but true moonstone is wholly different from agate or chalcedony. Moonstone is a variety of adularia or microperthite, which exhibits a bluish, pearly adularescence. A real moonstone is always bluish and when cut cabochon it reflects a beam of light similar to the reflection of moonlight on water. White or cloudy agates never show this ray.

Many fine moonstones have been found

on the beaches of Ceylon, especially after a storm. In this respect the deposits are similar to some of our beach agate deposits. Moonstone (hardness 2.56) is much softer than agate, hence the former will not survive as long under beach sand abrasion. Fine moonstones also are found in stream gravels at various localities. Moonstone occurs in the United States but not nearly in the fine quality available from Ceylon.

* * *

A massive garnet-idocrase rock occurring in Placer County, California, and found in connection with serpentine, has been at times mistaken for jade. Studies made by Dr. Austin Rogers proved this material to be an intimate mixture of grossularite garnet and idocrase.

The color of the rock varies from white to greenish gray, and has interesting brownish red mottlings. It is an attractive ornamental stone especially in thin slabs, reports Dr. Rogers. It is essentially different from the well-known californite, but the latter term might be expanded to include it.

* * *

The home gem cutter may note that the sanders, either disk, drum or belt type, may suddenly cease to function properly. The true cause may not be obvious, but it generally is assumed that the sanding cloth is worn. But this may not be the real reason for the disability.

Ray Vallier has made the observation that failure of the sanding cloth to function properly frequently is due to a thin film of oil or kerosene which has contaminated the cloth. This is especially true where a diamond saw may be operated in a position adjacent to the sander. Or if a great deal of sawing is being done, the invisible fog of oil and kerosene floating about in the room, may eventually settle on the sanding cloth, even if the sander is located some distance from the saw unit or units.

Oil and kerosene are fatal to the proper functioning of a sanding cloth. The remedy is to cover the sanders when they are idle—a heavy cloth will do the work. Those who wear glasses and do a good deal of sawing will soon note that the glass becomes coated with a "fog" of oil or kerosene, proof that it can float around in the atmosphere in minute amounts.

* * *

In the use of silicon carbide grinding wheels for gem stone cutting the wheel should be kept quite wet with water while in operation. The function of water is important for the following reasons:

(1) To maintain the temperature of the work as uniform as possible and to prevent localized heating. Cold water generally is

used, but it has been recommended that in the cutting of valuable opals, the water should be warm.

(2) Water reduces the friction between the wheel and the work.

(3) Water is important in preventing the "loading" of the surface of the wheel. In attempting to use a silicon carbide wheel dry, the wheel surface will soon become clogged with debris from the work. The water serves to flush away particles of grit which slough from the wheel, and the fine dust and particles from the work. A clean surface on an abrasive wheel is much more effective for grinding. A wheel surface glazed over with debris will not cut effectively, and will generate considerable heat.

* * *

For many years the cause of color in amethyst was thought to be due to the presence of manganese, and reference to this is made by writers of old works on gemmology. Later it was supposed that both manganese and iron accounted for the color of amethyst, as mentioned in one of the older editions of Dana.

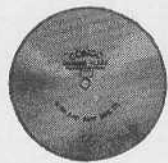
In 1925, the late Edward F. Holden carried on some extensive research at the University of Michigan regarding the cause of color in amethyst, smoky quartz, and rose quartz. According to Holden, manganese and titanium cannot be the cause of color in amethyst, since they are present only in small amounts which do not vary with the depth of color. Holden believed that amethyst was colored by a compound of ferric iron stable up to 260 degrees C. He also called attention to the fact that certain ferric compounds have the same color as amethyst, that upon being heated amethysts become identical in color and absorption spectrum with citrine varieties of quartz, which has long been believed to be colored by a ferric compound. The amount of iron in amethyst is relatively large and varies in proportion to the depth of color.

Holden determined that the amount of iron, titanium and manganese in smoky quartz is small and bears no relation to the depth of color. Moreover, the pigment in smoky quartz cannot be a hydrocarbon. Holden decided that the cause of color in smoky quartz was due to the presence of particles of free silicon, atomic in size, which cause a light scattering of "smoky" appearance. It is believed that the association of smoky quartz with radioactive minerals liberates the free silicon. The color of heat-decolorized smoky quartz can be restored by exposure to radium radiations.

The smoky quartz specimens studied by Holden contained significant amounts of uranium, with radium in equilibrium. Holden also concluded that manganese is the cause of color in rose quartz. According to G. F. Herbert Smith (*Gem Stones*, 9th ed. 1940) the cause of color in amethyst is probably due to the presence of iron in a colloidal form.

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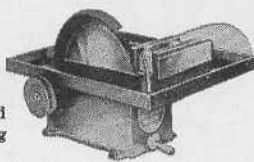


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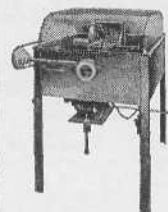
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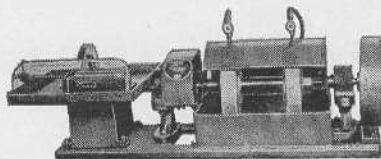
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This is the polytheistic doctrine of the Mormon religion. It is novel and because the world little appreciates novelty in theology, the Mormons do not stress this point today. In the post Civil War days the Mormons had to place on the shelf another "dangerous" doctrine until that time comes when they feel the world will have progressed to the point where it can accept it. This, of course, is polygamy.

These are isolated themes in the story of Mormonism, but untold numbers of people based damning opinions of the Latter-day Saints on them alone.

Serious students of Mormonism have had two main sources from which to find the answers to their broader inquiry—and both are somewhat inadequate: the official church histories which lack objectivity and the broad view of Mormonism in its American context; and the works of gentiles which were avowedly critical and were written as "attacks" on what was once felt to be a dangerous conspiracy against national security and Christian morality.

Because Mormonism emphasizes that its members are a chosen people—one big family bound by divine revelation and a common history of hardship—one can retain his identification with Mormon society even after he has lost faith in the religion. Such a person is Ray B. West, Jr., who has thus been able to write a most understanding and yet accurate account of Mormonism: *Kingdom of the Saints*. Dominating the book as they have the church's history, and serving as keys to the understanding of Mormonism today, are the Prophet Joseph Smith, and Brigham Young, "The Lion of the Lord" whose vigorous determination and executive ability led to the establishment and preservation of the Mormon's New Zion in Utah.

What is Mormonism? To Author West it was the most rational version of the more extreme adventist beliefs

(the impending second coming of Christ) on the restless American frontier. It was a blending of America's manifest destiny—the great Westward movement—with theological justification. It combined traditional Christianity with strong emphasis on the Hebraic elements and native American qualities and aspirations. Its concept of paradise borders on Mohammedism. It was and is more formalistic than Unitarianism, less mystical than Christian Science and less rigid than most adventist reform churches.

It holds that salvation is a continuing process—not a sudden process—and this doctrine allows Mormon theology a flexible ability to keep pace with rapid social change and thus avoid the fatal character of errors in judgment made by many other new religions.

Mormonism is a unique and still young religion which grew from a handful of men in the 1830s to its present million and a half members. One of the basic reasons it did so is because it answered a need universally felt in man to reconcile matter and spirit in understandable language and action, the author believes.

The history of Mormonism is a story of persecution, of cold blooded murder and mob violence directed against men who were in the main possessive of all the characteristics we deem desirable—thrift, moderation, consecration, industriousness and devotion to family. From the very beginning gentiles felt fear and wonder towards Mormonism and each new year brought fresh predictions that it would wither away. Today, far from having lost its basic strength, Mormonism is growing in influence, and for the gentile the fear is largely gone—but the wonder remains.

Published by Viking Press, New York; illustrations; index; 389 pages; \$6.00.

Desert Best Seller List*

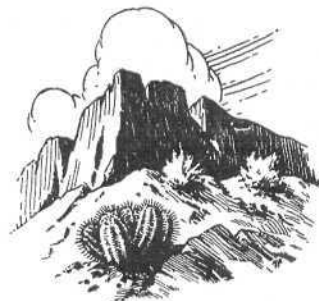
1. *Ghosts of the Glory Trail*
Nell Murbarger\$5.75
2. *Physiology of Man in the Desert*
E. F. Adolphpaper \$3.50
.....cloth \$5.00
3. *Lost Mines and Buried Treasure*
John Mitchell\$5.00
4. *The Story of Bodie*
Ella M. Cain.....paper \$2.50
.....cloth \$4.00
5. *Lost Treasure, The Search for Hidden Gold*
Robert G. Ferguson\$2.75

*Based on July sales by Desert Magazine Bookshop.

ORIGINAL WRITINGS OF MANLY MAKE NEW BOOK

The raw material from which history is drawn always makes exciting reading, especially when that "raw material" is the original writings of a Western pioneer of William Lewis Manly's stature. Perhaps more than any other person, he epitomizes the kind of man it took to win the West.

(Continued on page 43)



Eighteen-year-old Everett Ruess dreamed of a wild carefree life in the far places of the earth where, unfettered by the petty restrictions of civilization, he could explore the unknown wilderness and paint and write as he roamed.

In 1934 Everett entered the canyon wilderness along the Colorado River, searching for the "beauty beyond all power to convey" that he knew awaited him in the colorful desert land.

He never returned from that trip.

His burros and pack saddles were found by searching parties three months later—but no clue has ever disclosed the fate of this young artist-explorer.

From that fateful journey and earlier treks has come a compilation of his letters, stories, wood cuts, drawings and photographs, first published by Desert Magazine Press in 1940, but as vivid and alive with the wonder and enthusiasm of youth today as they were in 1934—and as they will be in 1994—

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By RANDALL HENDERSON

DURING THE past year Cyria and I have built a little summer cottage on a hillside overlooking a natural meadow in the San Jacinto mountains. Almost every evening two or three deer come down out of the timber to feed in our front yard. Sometimes two of the does bring their fawns with them.

We are intruders in their world, and it has been a slow patient experience, breaking down the distrust they have for all the members of our two-legged species—a distrust which we humans have brought on ourselves.

Visitors at our cottage always share the thrill we feel at dusk when the deer come down to graze. If one of those animals should be killed we would feel the loss as keenly as would another family over the loss of a pet dog. They mean that much to us.

I believe that a great majority of civilized humans have an instinctive fondness for the higher forms of wildlife. This was not always true. There was a time when our prehistoric ancestors depended on the fruit they gathered and the game they killed for survival. Hunting was necessary to live—and all men were hunters.

Today, according to the statistics of the fish and game authorities, only four percent of the population are hunters. So we have made considerable progress in our slow ascent up the ladder of evolution.

Recently the Desert Protective Council passed a resolution asking that the entire San Jacinto-Santa Rosa mountain area be set aside as a wildlife sanctuary. Today a portion of it is a bighorn sheep refuge, but much of the remainder is still open to game hunters.

Members of the Council expressed the view that the San Jacintos and Santa Rosas are becoming increasingly popular as recreational areas for the millions who now reside in Southern California—and that the conflict between the 96 percent of the population who come to these mountains for rest and recreation, and the four percent who come to kill the wildlife, is becoming so critical as to make it imperative that there be a drastic curtailment of the activities of the minority group.

This proposal no doubt will meet with vigorous opposition from the hunting fraternity. But sooner or later the huntsmen will have to give way, for that is the trend of our civilization. There are good reasons why this is true: The pressure of increasing population has, and will continue to restrict the areas where high-powered firearms can be discharged without hazard to human beings.

Another factor, thanks to the research of the men of science, is the growing realization that all life on this planet is related and in some measure inter-dependent—and that if all the wildlife on this earth were destroyed, the place no longer would be habitable by man himself.

It is true the human species has advanced further along the road toward maturity than any of the other forms of life. But we must abandon the notion that the earth and everything on it were created for the sole benefit of man. The deer and the bighorns also have a role to fill in maintaining the natural balance necessary for human survival.

* * *

It is gratifying to note that in recent months the states of Nevada, Arizona and Utah have all established state park departments—empowered to set aside certain areas within their boundaries for recreational and educational purposes.

Thus the desert becomes more and more a well-regulated playground for those urbanites who want—and need—the pure air, the sunshine and broad horizons of the world as designed originally by the Creator.

* * *

Hardly a week passes that I do not receive letters from persons asking about the meaning of the prehistoric Indian petroglyphs and pictographs inscribed on the rocks in hundreds of places in the Southwest.

Despite all the study given the subject, no one has yet solved the mystery. It is true that many of the figures are recognizable as objects with which we are familiar. And in a few instances plausible theories have been offered as to the probable meaning of particular glyphs. But generally speaking, the thinking which prompted ancient Indian artists to leave these indelible marks of their culture remains a puzzle. Perhaps they have significance—or possibly an aborigine with an urge to do something creative merely was doodling. We do not know.

However, my psychologist friends assure me they can explain the conduct of 20th century morons who dab their names or initials on the rocks along the roadside. It is done by humans with a exhibitionist complex. It is a silly way of trying to make themselves feel important.

* * *

Nell Murbarger's writing grows better and better. I think her story of the camping trip she made with her parents to Dripping Springs in the Organ Pipe Cactus National Monument in this issue of *Desert* is one of the finest examples of reporting she has ever produced—and I have been editing her manuscripts for many years.

On most of her reporting trips she camps in the open, sleeps on the ground—and somehow absorbs from the good earth a "feel" that she is able to pass along to her readers. Skill in writing consists of presenting a series of word pictures which the reader can see and feel—and Nell has become one of the artists of her profession.

BOOKS . . .

(Continued from page 41)

Rough, unpolished in speech and dress, above all he was courageous and honorable. It was second nature with him to face death to aid those in trouble.

And now Arthur Woodward has edited the first book of original Manly material to be published since Manly's desert classic, *Death Valley in '49*, appeared in 1894. *The Jayhawkers' Oath and Other Sketches* tells of life in the early days as Manly lived it and wrote about it. Violence and misfortune walked hand in hand with humor and golden bonanzas in this exciting time. Particularly interesting are Manly's reports of life in the early Northern California gold camps.

But, always in the background in this work is the desert which most folks regarded 100 years ago as next door to hell. In this land where "the air became so arid men died through lack of moisture in the atmosphere, although supplied with water" Manly's courage and loyalty were put to the hardest tests any man could face and he came through triumphant in both instances.

"Surely it has been an age worth living," he wrote in a farewell article when he was over 75 years of age. "To have had a part in the events of this wonderful era, is a pleasing memory. I might have done better, perhaps, but in a general way, 'I did the best I could'."

Published by Warren F. Lewis, Los Angeles; 168 pages; 36 full page illustrations; six-color fold-in map, replica of one of the important and favorite maps of the Gold Rush days; \$6.00.

HEALD'S SCENIC GUIDE TO CALIFORNIA REPRINTED

Scenic Guides of Susanville, California, has reprinted *Scenic Guide to California* by Weldon F. Heald, well known Western travel writer.

The paperback book gives thumbnail sketches of the state's major attractions in alphabetical order—with emphasis on outdoor recreation and family vacation activities.

California's desert playgrounds are well represented in Heald's book and full page maps of Anza Desert State Park, Joshua Tree National Monu-

ment-Coachella Valley and Death Valley are included among the many maps in the publication. A special feature for rockhounds are the over 100 gem collecting fields shown on the maps in small print.

Although the author admits "it may appear presumptuous to present a book about the entire state of California in 112 pages," he very ably succeeds in giving the reader what these books aim for: "quickly-read, pocket-sized menus to the lavish banquet of mountains, forests, deserts, lakes and sea-coasts."

Published by Scenic Guides; paper cover; illustrations, maps and index; 112 pages; \$1.50.

Written in the same format is the 1957 edition of *Scenic Guide to Arizona*. Author of this book is H. Cyril Johnson, originator of the Scenic Guide series and head of that publishing house.

The Arizona guide also contains maps and illustrations and this 56-page paper back book sells for \$1.00.

. . .

STORY OF CALIFORNIA'S MORONGO BASIN PUBLISHED

Friends of the Morongo Valley-Yucca Valley-Twenty-nine Palms, Cali-

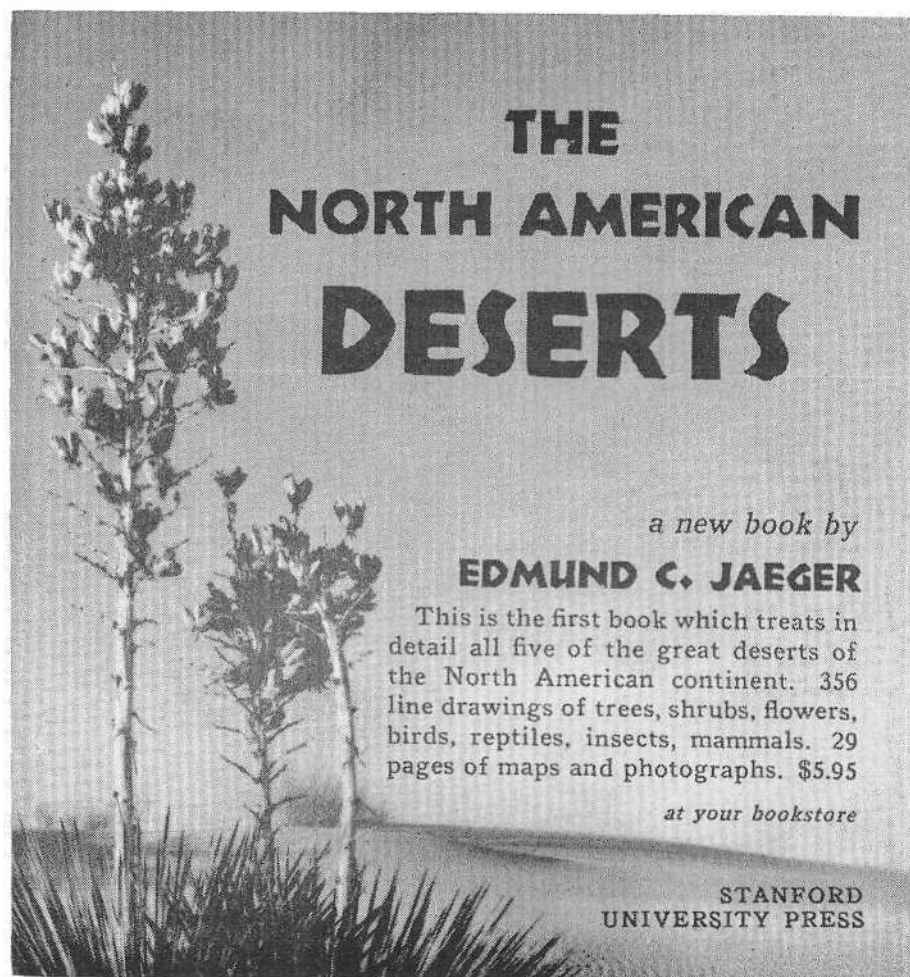
fornia, area will be interested in a new book by Lulu Rasmussen O'Neal which tells about the people, events and physical characteristics which make up this interesting country along the western and northern boundaries of Joshua Tree National Monument.

The author takes the title for her work, *A Peculiar Piece of Desert*, from a line written 50 years ago by George Wharton James in his classic, *The Wonders of the Colorado Desert*, in describing this country: "tree yucca . . . adds its weird and picturesque characteristic to an already peculiar piece of desert."

Lulu O'Neal, like hundreds of others who have acquired deep attachment for the desert, is a jackrabbit homesteader. She spends as much time at her desert retreat as her metropolitan area job will allow.

The Morongo Basin has been known to Indians for centuries, but the white man is a relatively recent arrival. Most of the history related in this book is of a late vintage and many of the area's chief actors are still active in community affairs, which will further add to the reader's pleasure.

Published by Westernlore Press in a limited edition; illustrated; index and bibliography; 208 pages; \$7.50.



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Here is a listing of Magazines with articles which may have a special interest for you:

PERSONALITIES

Jul. '46—Tom Keams of Keams Canyon
Nov. '52—Cabot Yerxa of Coachella Valley
Jan. '53—Turquoise Miner of Nevada. MAP
Mar. '53—Ghost Town Prospector. MAP
Apr. '53—Borax Smith of Death Valley
Jul. '53—Nell Murbarger, Roving Reporter
Dec. '53—Ben Lily, Last of the Mountain Men
Jul. '54—Glenn Emmons, Indian Commissioner
Oct. '54—Burro Man of Corn Springs

EXPLORATION

Apr. '52—Valley of Thundering Water, N.M. MAP
May '52—Goblin Valley of Utah. MAP
Oct. '52—Glen Canyon Voyage. MAP
Feb. '53—Boat Trip in Mojave Canyon. MAP
Apr. '53—Arroyo Grande in Baja California. MAP
Jul. '53—Boat Ride on Big Bend, Texas. MAP
Sep. '53—Seldom Seen Canyon, California. MAP
Dec. '53—Graveyard of the Dinosaurs. MAP
Jan. '54—Through the Narrows in Zion. MAP
Oct. '54—Boatride in Desolation Canyon. MAP
Oct. '55—Day in Greenwater Canyon, California. MAP

INDIANS

Aug. '51—How Indians Roast Mescal.
Aug. '51—Navajo Indian Burial.
Jul. '52—Tribesmen of Santa Catarina. MAP
Aug. '52—Story of an Indian Marriage.
Sep. '52—Indians of Ancient Lake Mojave. MAP
Oct. '52—Tribal Council at Window Rock.
Dec. '52—Christmas at San Felipe, New Mexico
Jun. '53—Ancient Towers of Mystery. MAP
Aug. '53—Indian Farmers in Parker Valley. MAP
Jun. '54—Seri Indians of Baja California. MAP
Aug. '54—Revolt Against Ancient Gods.
Nov. '54—Legendary Lake of the Paiutes. MAP
Apr. '55—Navajo Medicine Man.

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Oct. '52—Salt Mining in Salton Sea Basin.
Dec. '52—Bodie in the Early Days.

MOUNTAIN CLIMBING

Aug. '51—Ascent of Avawatz Peak, California. MAP
Sep. '52—Climbing Rabbit Peak, California. MAP
Jan. '53—Ascent of El Diablo, Baja California. MAP
Feb. '53—Back Packing technique.
May '53—Ascent of the Coxcombs. MAP
Nov. '53—To the Top of Telescope Peak, California. MAP
Apr. '54—Trail to Keynote Summit, California. MAP
May '54—Mopah Crater in the Turtles. MAP
Sep. '54—Scaling Shiprock in New Mexico.
Dec. '54—Ascent of Boundary Peak, Nevada. MAP
Feb. '55—Whipple Mountain Climb, Arizona. MAP
Apr. '55—Summit of Glass Mountain, California. MAP

DEATH VALLEY

Aug. '52—Taming Death Valley.
Sep. '52—Building Scotty's Castle.
Mar. '53—Where Hungry Bill Lived. MAP

MINING

Jan. '53—Turquoise Mining in Nevada. MAP
May '53—Iron Mountain in Utah. MAP
May '55—Marble in Apacheland.

CAVES

Aug. '51—Cave of the Golden Sands.
Nov. '51—Cave of the Crystal Snowbanks. MAP

MISCELLANEOUS

Apr. '53—There's Gold in Old Placer Fields. MAP
Jul. '53—Walter Knott Bought a Ghost Town
Oct. '53—Mexican Tour in Baja California. MAP
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