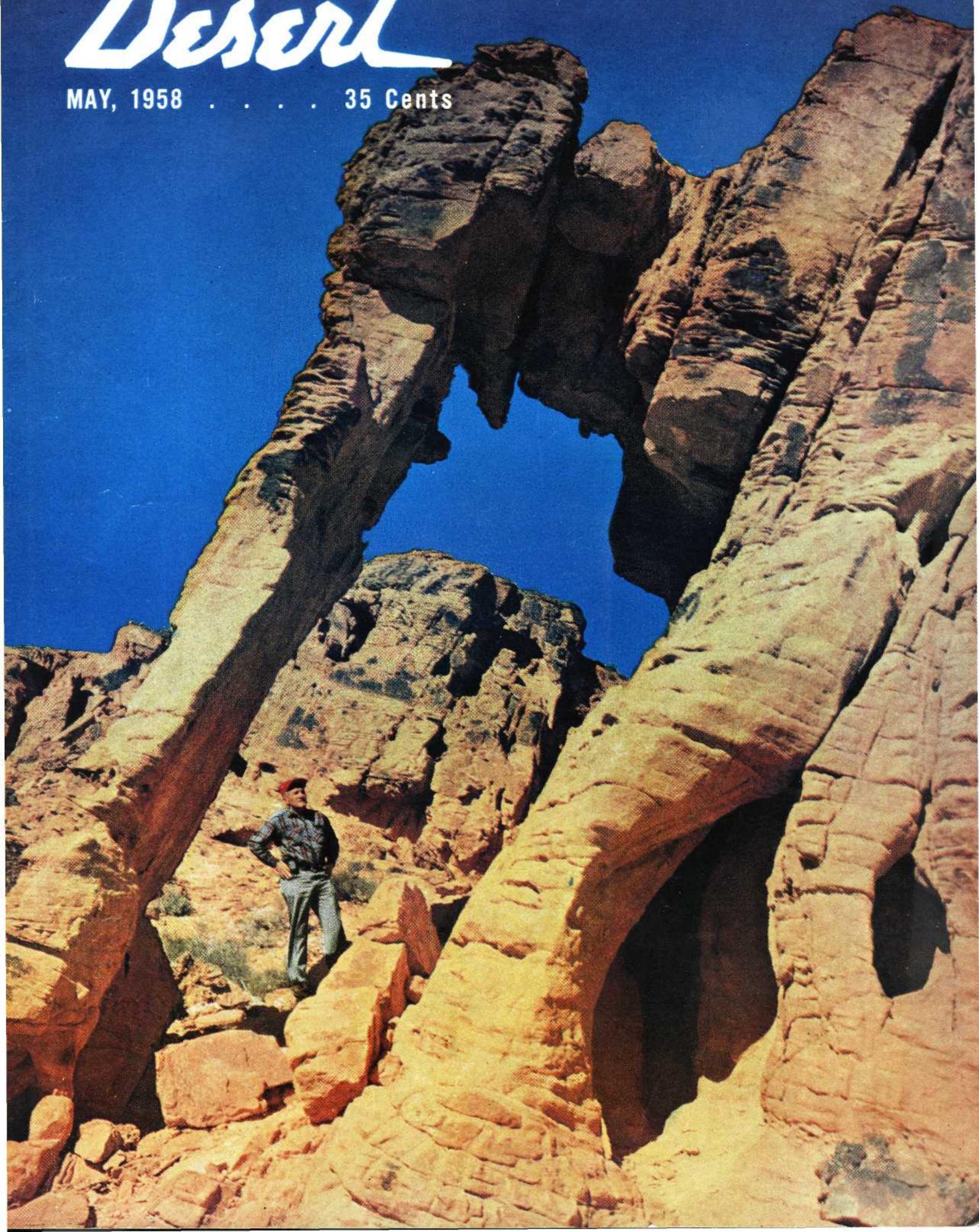


Desert

MAY, 1958 35 Cents





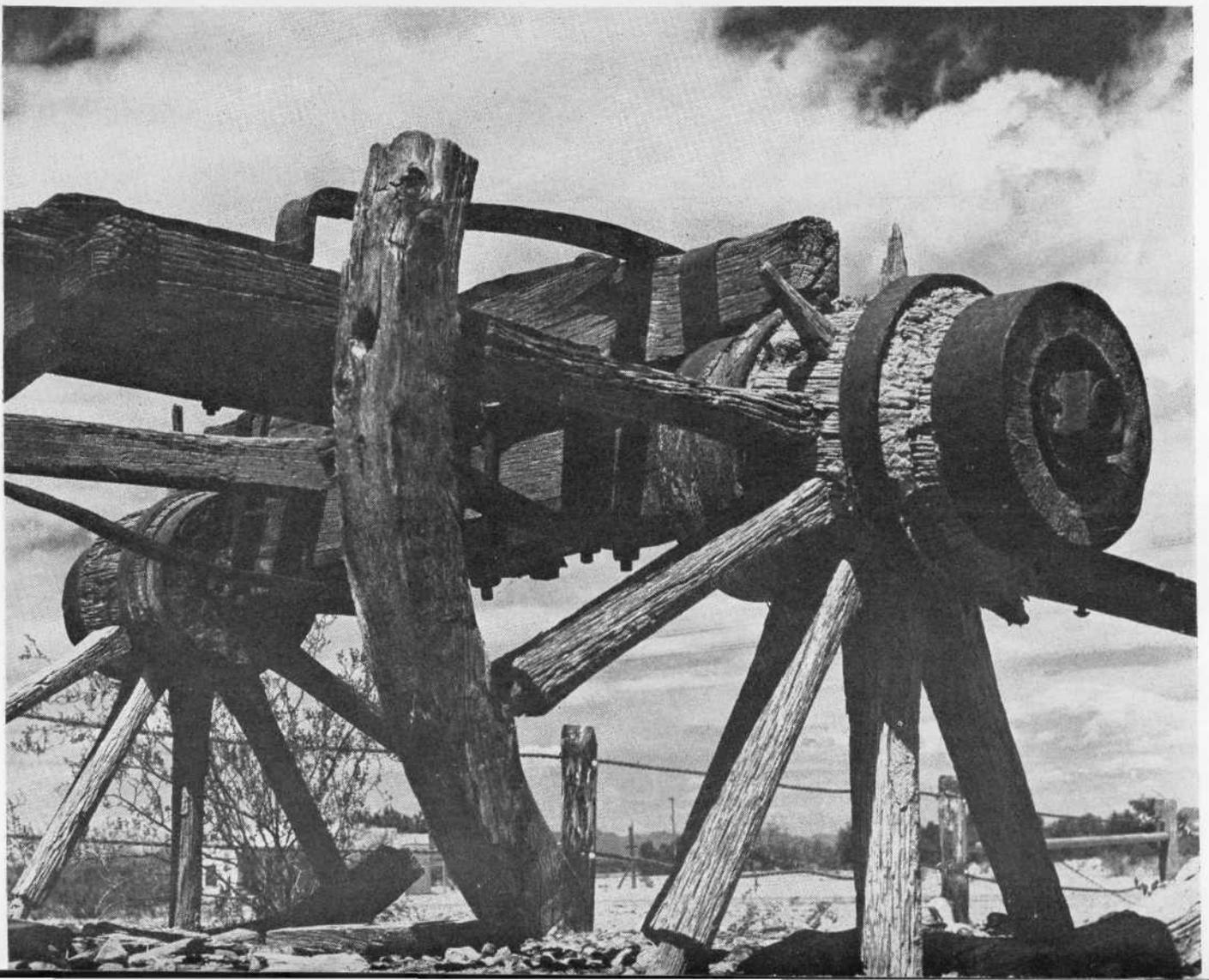
Zuni Olla Maiden

Henry P. Chapman's close-up of a Zuni Indian woman carrying an olla on her head is this month's first prize photo contest entry. Chapman is a resident of Santa Fe. These ollas are made by the Zuni women without the aid of a potter's wheel, and are handpainted without preliminary sketching of the designs. The Zuni Pueblo is in New Mexico a few miles south of Gallup. Camera data: Rolleiflex 2.8c camera; f. 16 at 1/50 sec.; Pan-X film; yellow filter.

Pictures of the Month

Wagon Wheels...

Time and the elements have reduced these wagon wheels to picturesque ruins — weathered reminders of an age when transportation depended on horseflesh and wood. Second prize photo by L. D. Schooler of Blythe, California, was taken just across the Colorado River in Ehrenberg, Arizona. Camera data: Rollei-cord camera; f. 11 at 1/50 sec.; Plus-X film; red filter.



DESERT CALENDAR

April 26-May 18—24th annual Junior Indian Art Show, Museum of Northern Arizona, Flagstaff.

April 30-May 3—Las Damas Trek, Wickenburg, Arizona.

May 1 — Fiesta and Spring Corn Dance, San Felipe Pueblo, N. M.

May 3—Santa Cruz Corn Dance and Ceremonial Races, Taos Pueblo, New Mexico.

May 3-4—31st Presentation of the Ramona Pageant, Hemet, California.

May 3-4 — Newhall-Saugus Rodeo, Newhall, California.

May 3-5—Cinco de Mayo (Mexican Independence Day) Festivities at Nogales and Gilbert, Arizona, and most border towns.

May 4 — Colorado River Regatta, Parker, Arizona. Western barbecue on preceding evening.

May 4-5—Desert Panorama Displays, China Lake, California.

May 9—FFA and 4-H Stock Show, Kaysville, Utah.

May 9-10 — Humboldt County Auction and Fair, Winnemucca, Nev.

May 9-10—Western Division Rodeo, Brigham Young University, Provo, Utah.

May 10—Re-enactment of the Golden Spike Ceremony, Promontory, U.

May 10-11—17th annual Lone Pine, California, Stampede.

May 10-11—Desert Rat Days, Twentynine Palms, California.

May 10-11—9th annual Racquet Club Tennis Tournament, Palm Springs, California.

May 10-15—Equestrian Trails Ride from Calico, California, to Las Vegas, Nevada.

May 10-25—Wildflower Show, Julian, California.

May 11—Sacramento Peak Observatory east of Alamogordo, New Mexico, open to public every Sunday throughout summer.

May 14-15—San Ysidro Procession and Blessing of Fields, near Los Cordovas, New Mexico.

May 15-16—Dairy Days, Plain City, Utah.

May 15-18—Helldorado, Las Vegas, Nevada.

May 16-18—Grubstake Days, Yucca Valley, California.

May 18—2nd annual 90-mile Outboard Marathon, Blythe, California. Barbecue on preceding evening.

May 18—Horse Show, Sonoita, Ariz.

May 18 — Beaver County Livestock Show, Milford, Utah.

May 23-25 — New Mexico Mobile Home Show, Albuquerque.

May 24-25—Sanpete Rambouillet and Junior Livestock Show and Parade, Ephraim, Utah.

May 24-25—American Legion '49ers Day, Milford, Utah.

May 26-27 — Uranium Convention, Albuquerque.

May 30—Davis County Sheriff's Rodeo and Posse Review, Kaysville, Utah.

May 30 — Memorial Day Rodeo, American Fork, Utah.

May 30 — Memorial Day Regatta, Provo, Utah.

May 31 — Homecoming Day, Caliente, Nevada.

May 31-June 1—Fiesta de San Felipe de Neri, Albuquerque.



Volume 21

MAY, 1958

Number 5

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The Desert Magazine is published monthly by the Desert Press, Inc., Palm Desert, California. Re-entered as second class matter July 17, 1948, at the postoffice at Palm Desert, California, under the Act of March 3, 1879. Title registered No. 358865 in U. S. Patent Office, and contents copyrighted 1958 by the Desert Press, Inc. Permission to reproduce contents must be secured from the editor in writing.

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SUBSCRIPTION RATES

One Year.....\$4.00 Two Years.....\$7.00
Canadian Subscriptions 25c Extra. Foreign 50c Extra

Subscriptions to Army Personnel Outside U. S. A. Must Be Mailed in Conformity With P. O. D. Order No. 19687

Address Correspondence to Desert Magazine, Palm Desert, California



HISTORIC PANORAMAS XV

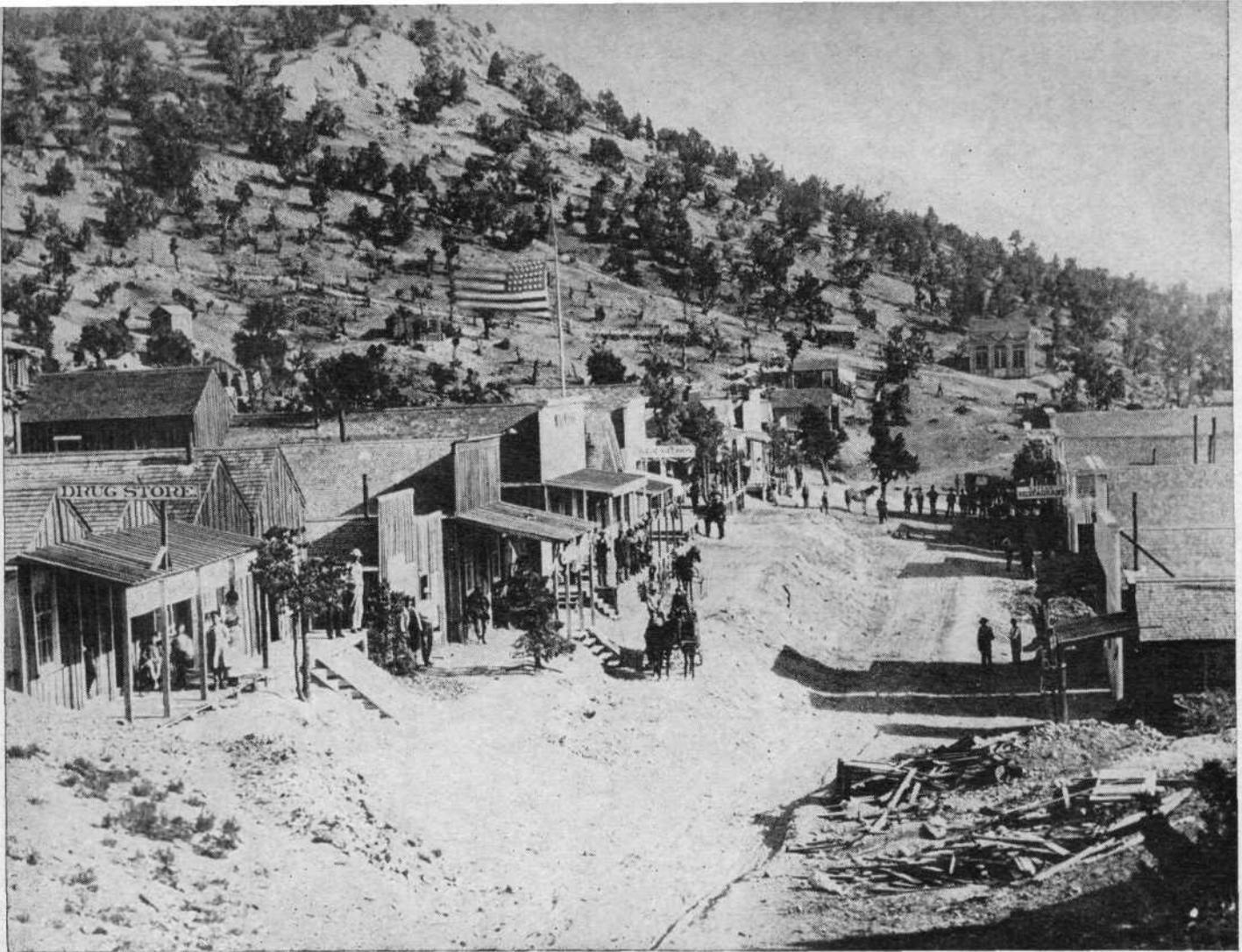
... Stokes Castle ...

By JOSEF and JOYCE MUENCH

Just out of Austin, Nevada—at the junction of U.S. 50 and State 8A—this crumbling ruin overlooks shafts which once yielded rich silver ore. When it was built in 1879 by brothers J. G. and Anson Phelps Stokes of Philadelphia, it almost justified the title which now clings to its denuded walls. Balconies on the second and third floors, a sun-deck on the roof, deep narrow windows, and its lofty position on a hill all marked it as unusual for its

time and locale. Intended as a residence, it was never finished.

Legends, rather than clinging vines which a more moist climate might have produced, have grown up around these stone walls. None of these stories seem based on fact, but include such lurid tales as foremen high-grading rich ore, and the brothers spying from the upper windows.



Main Street, Taylor, Nevada, in the 1880s. Old timers say this photograph was taken on the day President Garfield died (September 19, 1881), which would account for the flag flying at half-mast. Photo courtesy Irwin Fehr, Ely, Nevada.

When the Brass Band Played at Taylor ...

By NELL MURBARGER
Map by Norton Allen

CLAUDE GARDNER'S first job at Taylor, Nevada, was helping his dad demolish the opera house. Claude was 12 years old, McKinley was president of the United States, and Taylor, even then, was a ghost mining camp.

Today Claude Gardner is the last remaining resident of Taylor. He lives in an old rock store building with three-foot thick walls and a porch held together with square-cut iron nails. He still owns 26 mining claims and several leases; and now and then makes a shipment of ore. Claude enjoys good friends and flowers and sunsets and

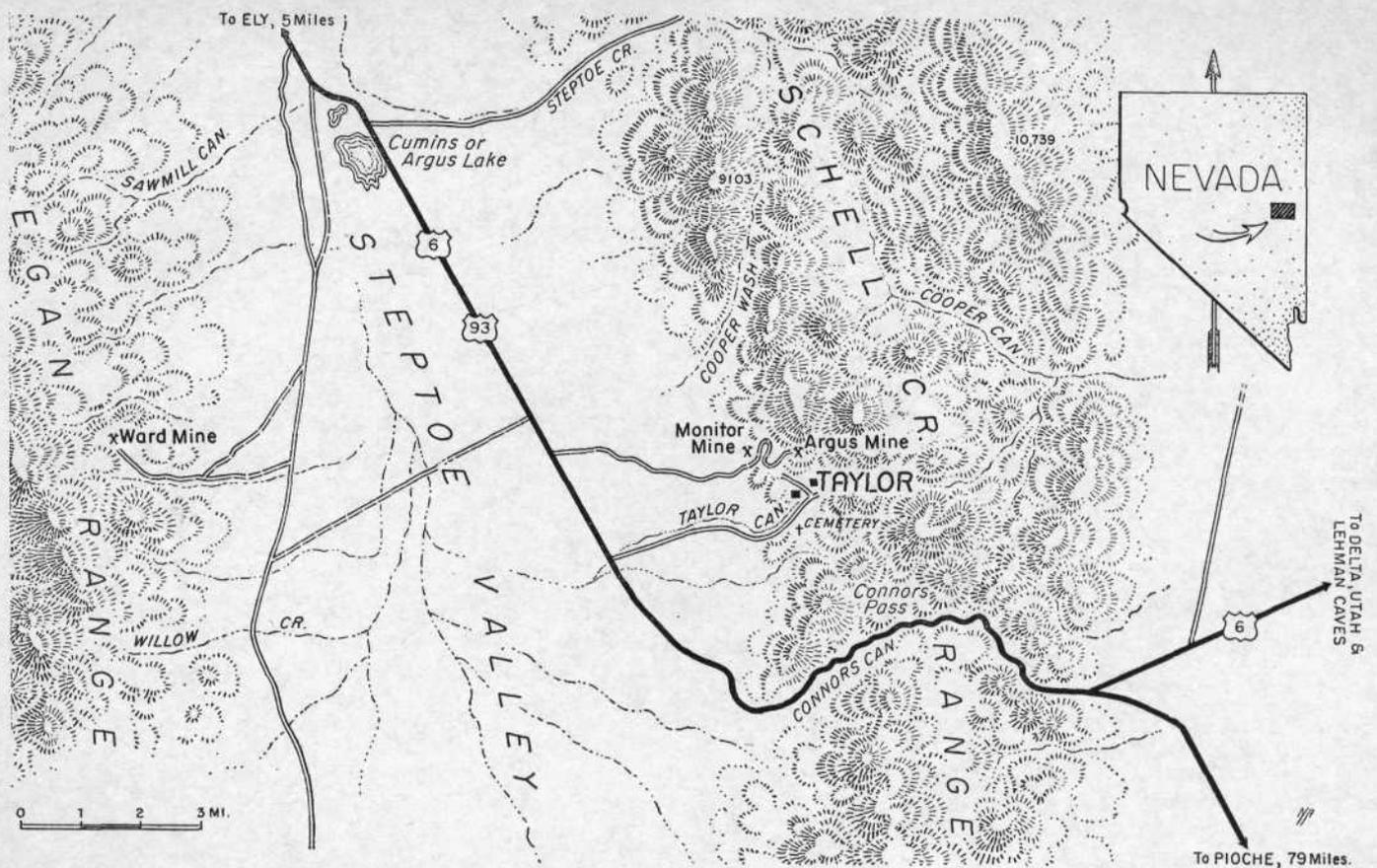
good books. He is a hearty eater, sleeps well, laughs a lot, has struck a truce with the world—and at 70 years of age looks much younger than many men of 50.

"This was main street," said Claude Gardner, indicating the narrow desert road up which I had driven from the mouth of the canyon. "When Dad and I came here in 1899 there were houses and store buildings along both sides of this street, but only two or three of the cabins were occupied. The opera house set down yonder, away. This rock building I live in was Dave Felsenthal's general store, and that

With two of Nevada's most productive silver mines in operation, the community of Taylor came to life and prospered during the 1880s. Then silver was demonetized and Taylor's boom ended without fanfare or apparent remorse. Fifteen hundred people left their sunny canyon homes on the west slope of the Schell Creek Range, and headed for new bonanzas. Claude Gardner, who still lives in Taylor, is the only one who came back.

piece of wall down in the ravine is all that is left of George Metzger's Philadelphia Brewery. Even now, folks prowling through the sagebrush occasionally find one of its old quart bottles. Below the brewery was Chinatown. Those dumps on the hill belonged to the Argus Mine, and the Monitor laid over that little rise to the north. . ."

As I roamed over the hillside where Taylor had stood, with Claude as my



guide, I learned more about my host. He was born in the old Mormon lumbering town of Pine Valley in the Southwestern part of Utah. His paternal grandfather and granduncle, Robert and Archibald Gardner, had established the first sawmill in Utah, near Salt Lake City; and after moving to Pine Valley, had cut trees and sawed lumber for construction of the Mormon Temple at St. George.

Claude developed an early interest in mining, and when he grew older staked several claims in the Taylor district. As time went on he strayed periodically to other sections of the West, but always returned to the old camp in the Schell Creek Mountains. About a dozen years ago he realized that Nevada's dry canyons, sagebrush, nut-pines and junipers meant more to him than all the chimerical green pastures of the world—and he came home to stay.

After gaining what information I could at the long deserted campsite, I returned to Ely and spent the next two days in the recorder's office scanning the files of the *White Pine Reflex* and *White Pine News*, Taylor's two newspapers, and the *Ward Reflex*, published in the 1870s and 1880s at the mining camp of Ward, a dozen miles west of Taylor. In the news columns of these priceless old journals is faithfully recorded week-by-week the story of Taylor.

First ore discoveries in this part of the Schell Creek Range were made in 1872 by Prospectors Taylor and Pratt, but their strikes failed to attract much attention, and most of the original claims were permitted to lapse. Several of these were relocated about eight years later by W. G. Lyons, Robert Briggs and W. N. Billy McGill, who developed their holdings into the Monitor—one of the district's two greatest mines, and producer of some of the richest silver ore ever found in Nevada.

The other big mine was the Argus, discovered by Jim Ragsdale, an Indian, who assertedly sold it for \$500 in cash and a good team of horses. The Argus was developed by Joseph S. Carothers, prominent Nevada mining man of that day, with the financial backing of the wealthy Aultman family of Canton, Ohio. During their few productive years, the Monitor and Argus each yielded \$5,000,000 in free-milling silver—most of it mined within 50 feet of the surface.

The silver camp of Ward had been flourishing about a half-dozen years when on May 16, 1880, its newspaper, *The Reflex*, issued the first provocative mention of the new mining district across Steptoe Valley to the east:

"Visions of untold wealth agitate the venturesome portion of this community. It is concentrated in Taylor District, and mum is the word for the present. The assays are stiff, and those

on the inside are communicative only to the favored few . . ."

Before year's end, almost everyone in Nevada knew about the Taylor district. The bonanza brought an influx of boomers, and the town of Taylor began to collect in the trough of the canyon below the main mines. Soon the population soared to 1500. Vacant houses in the declining town of Ward were moved to Taylor.

By June, 1883, a seven-foot ore body, assaying as high as \$4000 a ton, was being worked at the Monitor which now was paying more bullion tax than any other mine in the state. H. A. Cumins was importing windows, doors and finishing lumber from Cherry Creek, 60 miles to the north. Before the end of that summer, Taylor boasted three general stores, two butcher shops, seven saloons, four restaurants, three boarding houses, a drugstore, dentist and doctor. *The Reflex* noted that even a Chinese opium den was flourishing.

The summer of 1883 also witnessed the organization of Taylor's White Pine Brass Band, an event hailed as a great step forward since Taylor, like most country towns of that era, did not possess an abundance of ready-made entertainment. Second and third rate traveling show troupes occasionally drifted into town for one-night performances at the opera house, also

the scene of infrequent home-talent plays and black-face minstrel shows.

The town's merrymaking centered around its all-night dances, and every holiday and semi-important occasion was sufficient cause for a dance. Taylor's social affair of the year was the annual ball of the International Order of Odd Fellows. Women and girls—even if they could afford only one new gown a year—always arranged to wear it for the first time at the I.O.O.F. Ball. Couples attending from Ward or Argus Lake usually made up a party and chartered Jim Opie's butcher wagon to transport them to Taylor. Then the wagon was gaily decorated with crepe paper and bells. Other occasions found the same butcher cart draped in black and used as a hearse.

The country dance was a convenient means of raising funds for worthy causes. Proceeds of a St. Patrick's Day Ball financed construction of Taylor's first schoolhouse. The building, including blackboards and 10 desks, was erected at a cost of \$386; and when Miss Lizzie Edwards organized her classes that first morning, she found in attendance 20 prospective students.

Affairs of the town progressed for five good years. Taylor's mines were unfailingly productive and her people happy, prosperous and law-abiding. The town was exceptionally free of violence. After its second year, Taylor had three times as many registered voters as Ely; and by July, 1884, it was the largest town in White Pine County.

And then came the demonetization of silver. Price of that metal tumbled from \$1.25 to \$.62 an ounce. Taylor's great mines were closed, and shorn of her payrolls, the town died. By 1890 only two families remained.

From Ely I drove back to Taylor. As it leads out of Ely on its way over Connor's Pass and on to Lehman Caves and site of the projected Mount Wheeler National Park, paved U.S. 6 bisects the trough of sagegrown Steptoe Valley. Dry and flat, the six-mile wide valley lies at an elevation of over 6600 feet, with the 10,000-foot summits of the Egan and Schell Creek ranges bordering it on the west and east. On the higher levels of those mountains grow large pines, firs and quaking aspen, and crystal-clear snow-fed streams go bouncing down the canyons, watering high mountain meadows and making grand places to camp on warm summer days.

Six miles southeast of Ely, the highway crosses a small body of water where cattle drink and killdeers make their nests. At the south end of this reservoir—variously known as Cumins



Claude Gardner first came to Taylor in 1899. Today he is the mining camp's sole resident. Photo by the author.

Lake, Steptoe Lake and Argus Lake—once stood the large mill built by the Aultmans to crush the ore of their Argus Mine. Only a short distance away is the site of the Monitor mill, a little 10-stamp affair pieced together from odds and ends, and powered by the water of Steptoe Creek.

After driving up Steptoe Valley another half-dozen miles, I turned left on a graded road leading toward the foothills. At this junction is a hand-lettered sign pointing the way to Taylor Canyon. Climbing by slow degrees, the road crosses the wide fan sloping to the mouth of the canyon, and at 7500 feet enters a light forest of nut-pines and junipers. From this point it is a short distance to the first of Taylor's ruins—an old stone building originally used as a warehouse for feed and hay. Another 100 yards up the narrowing canyon trail which grows progressively steeper and rockier, I

sighted the old rock stone building in which Dave Felsenthal operated his general store, and where Claude Gardner now makes his home. Almost before my car wheels crunched to a stop in his yard, Taylor's lone occupant appeared in his doorway.

"Hi!" I called. "I came back for a post-graduate course!"

Claude grinned. "So I see! I'm glad you did. After you left it occurred to me that I should have taken you up to the old Monitor Mine. It's really quite a sight. Would you like to see it?"

Claude filled two carbide lamps and we climbed into his Jeep. As we followed the rutted trail toward the head of the canyon, he pointed out a concrete mill foundation on the hillside to our right.

"Behind those footings is the old Argus Mine—but that mill had nothing to do with the camp's boom years,"

he said. In the World War I days, Claude explained, a mining and milling company from Cody, Wyoming, acquired 16 claims here and erected a 100-ton cyanide plant. After a few runs the mill closed down and the company pulled stakes.

Halting the Jeep beside an unguarded open shaft on the crest of a low rise, Claude explained that this had been the original shaft of the Monitor. The great mine principally

had been worked as a "gophering operation." In the rocky sloping walls of a shallow ravine a few rods north of the shaft were several dark openings resembling the mouths of volcanic caves. It was from these excavations that the major portion of the Monitor's wealth was taken.

Claude lighted the carbide lamps and we crossed the threshold into one of the strangest mines I have ever visited. There was no semblance of conven-

tional tunneling, and very little timbering. Following the contours of the rich kidneys of ore, the miners had hollowed out huge chambers, some of them 40 feet in diameter and 15 feet high. Unmined pillars had been left scattered throughout the workings to help support the rock ceiling, and in some places there were massive stulls wedged into place—usually lengths of nut-pine or juniper trunks. Passageways the size of ordinary mine tunnels

High Desert Wildflowers Beckon May Visitors . . .

May is normally the month of most abundant wildflower bloom on the high desert, and this year's show promises to be even more spectacular because of the unusually heavy and well-distributed precipitation of past months.

In the areas where winter and spring rains have penetrated deepest, many of the annuals which came into flower earlier than usual still should be blooming in May, especially in the higher elevations such as Yucca Valley, along the Old Woman Springs Road, in Joshua Tree National Monument and in foothill areas of the Antelope Valley.

In addition, May will see many perennials in bloom, including apricot mallow, indigo bush, salazaria, cassia, cheese-bush, sandpaper-plant, Mojave aster and possibly cat's-claw, mesquite and chilopsis. The tiny yellow flowers of widespread blackbrush should be showing, as well as blossoms of deer-weed and pepper-grass.

Lucile Weight of Twentynine Palms predicts one of the best May flower areas will be along the Old Woman Springs Road which connects Yucca Valley with Lucerne Valley and Victorville. Here one can expect to see the blooms of desert mariposa, larkspur, desert rock-pea, white tidy-tips, phacelia, lupine, blazing star, viguiera, apricot mallow, Mojave aster, prickly poppy, and possibly earlier blooming chia, gilia, penstemon, lupine, verbena, malacothrix and pincushion. Cassia, pepper-grass and the elegant desert plume also should be in flower along this road.

Yucca Valley should be a very good May flower area, with nearly all the above mentioned species plus others showing, Mrs. Weight added.

Even in the remarkable flower years of 1938 and 1949, observers do not recall seeing the green of plants climbing to the very tops of high desert mountains as it has this year. By the first of April, blooming flowers had moved one-third of the way up the slopes of the Sheepholes, Cox-

combs, Pintos and Little San Bernardinos. During May there should be much bloom near the tops of these ranges.

Joshua Tree National Monument visitors can expect to find the following plant species in bloom during May and June: nolina, creosote, senna, blazing star, woolly marigold, lupine, sand verbena, large white desert primrose, forget-me-not, phacelia, gilia, mariposa, desert willow, tidy-tips, poppy and many others. Monument Superintendent Elmer N. Fladmark especially recommends the drive from Highway 60-70 through Pinto Basin in May, and visits to Lost Horse Valley and Salton View in June.

The Antelope Valley in the southwestern corner of the Mojave Desert should see a continuing of blooms into May of species that came into flower especially early this year. Mrs. Jane S. Pinheiro suggests a drive east along Highway 138 for mariposa, lupine and perhaps poppy. West on 138 from Lancaster to Gorman, there should be wonderful displays of mentzelia, mallow, gilia and cassia. Highway 6 from Mojave north to the Walker Pass also promises a good May flower show.

Naturalist Roland Wauer of Death Valley National Monument writes that there is a good chance wildflowers on the lower valley elevations will last to mid-May, and on the higher portions throughout the summer. In early April the high gullies and slopes were green with new plants, and cacti were just starting to bloom in the low warm valley areas.

Additional rainfall probably will prolong the Lake Mead National Recreation Area's outstanding wildflower season, according to Naturalist James W. Schaack. The desert is a mass of yellow, sprinkled with purples and white, and an occasional spot of orange and red. Joshua tree, yucca, sunray, creosote and barrel and hedgehog cacti blooms appeared in late March. Schaack recommends the back coun-

try drive to Pierce Ferry for rewarding views of the Joshua tree forest in bloom. Another May trip which should be excellent for both wildflowers and scenery is the Crystal to Valley of Fire State Park drive (see cover).

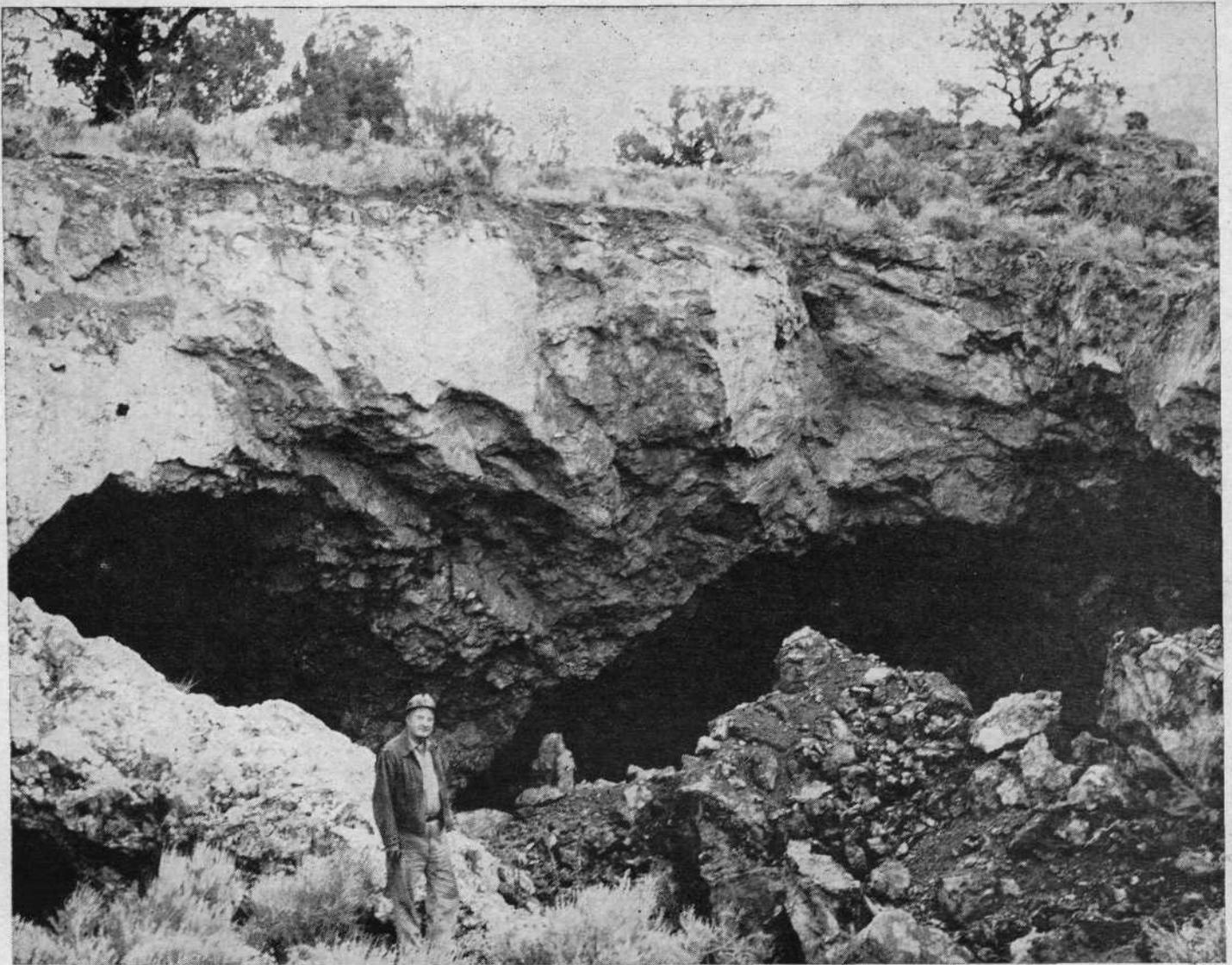
Abundant rainfall assures good May wildflower blossoms in the Globe, Arizona, area, reports Naturalist Earl Jackson of the Southwest Archeological Center. Among the species expected to be in flower are coveana, lupine, deer-weed, marigold, wallflower, globe mallow, mariposa, poppy and especially phacelia. Saguaro and other cacti species, owl clover and brittle-bush blooms also are anticipated.

These blossoms are forecast for the Casa Grande National Monument: lupine, desert marigold, ironwood, gold-fields, fiddleneck, crown-beard, brittle-bush, apricot mallow, palo verde, and prickly pear, saguaro, cholla and stag-horn cacti.

Saguaro cacti should be starting to flower in Saguaro National Monument near Tucson, writes Supervisory Park Ranger Robert J. Heying. In addition, over 50 wildflower species which came up in April are expected to be in blossom during May.

Organ Pipe Cactus National Monument in southern Arizona is covered with lush green vegetation, and Chief Ranger John T. Mullady predicts April blossoms will continue into May. Senita and organ pipe cacti blossoms are expected during the latter part of the month.

Clyde E. Strickler, supervisor of Anza-Borrego Desert State Park, looks for cacti to be blooming there during May. It is unlikely wildflowers will be found in the low desert areas of Coachella and Imperial valleys. However, the past winter and early spring weather has been very unusual, and the possibility exists that more April showers, the continuing absence of desiccating sandstorms, and warm May days may bring out a second wildflower blooming, especially of verbena, hairy-leaved sunflowers and primroses.



Gardner at the workings of the Monitor Mine. Photo by the author.

led from these huge rooms deeper into the mountain, there to rewidened into more rooms. Occasionally the walls of a chamber had been worked so thin they had broken through to the outdoors, and the entire canyon side was honeycombed like a Swiss cheese.

As we wandered through the chill corridors of this strange man-made grotto, shining the beams of our carbide lamps on streaks of rich ore still visible in the walls, I remembered snatches of stories from the old Taylor newspapers—a 30-pound specimen of Monitor ore worth \$2.50 a pound—specimens of horn silver and chloride worth \$5 a pound . . .

From the old Monitor we drove to North Taylor where a few nearly obliterated foundations and walls mark the sites of former homes.

"Most of the Monitor employees lived in North Taylor," said Claude. "Those who worked for the Argus lived in South Taylor, and the business

district—where I live now—was in the middle."

"Do you think the Monitor will ever re-open?" I asked as we drove back to the old rock store building.

"That's hard to say," Claude replied. "After Briggs, Lyon and McGill took out several million dollars worth of ore—probably a million dollars net—they sold to an English company in 1888 for \$185,000. Soon after, the high grade ore pinched out and before there was time to do any more development or exploration work, the bottom fell out of the silver market.

"There's still plenty of ore in the Monitor—you saw that for yourself this morning. But, in view of today's high operating and milling costs, and the relatively low price of silver, it seems doubtful whether anyone could mine it at a profit . . ."

In the last issue of the *White Pine News* published at Taylor on September 8, 1888, the editor wrote:

"Taylor, though now under a cloud through no fault of its mines or its people, but through a chain of causes familiar to all and not necessary to repeat, is not a dead mining camp. It is only resting awhile until the cloud that hangs over it like a nightmare rolls away. The mines are here and they look better than they did three years ago, and it will be strange if a property so valuable as the Argus will be permitted to remain idle long."

The frontier editor was a better writer than he was prophet; and although nearly 70 years have passed since those hopeful words were published, the nightmare cloud has not rolled away.

The great Argus and the Monitor, the June, the Hixon—all the rich mines that nurtured Taylor three-quarters of a century ago, still are standing idle; and the little mining town in the canyon—the place that once had three times as many registered voters as Ely—today is the home of only one man.



Photograph by Beth Swanson

HOMESTEADER'S FAMILY PLOT

By PAUL WILHELM
Thousand Palms, California

These men lived lives so still
To you, unknowing, die;
At rest beneath this hill
My sands to dignify.

These men met death sublime;
Now let their quiet sing.
In this, their silent time,
Cool winds are murmuring.

From strong lives lived unsaid,
These desolations die;
There lifts a green homestead,
Silence must signify.

For you, the golden day
Since they the terrors faced;
They broke the old trail way,
The endless desert waste.

CLARET-CUP CACTUS

By JEAN HOGAN DUDLEY
Inglewood, California

Now I have learned to look beyond the
name
Or the appearances of any man,
Since I have learned a thorny cactus can
Become a claret-cup of petalled flame.

Tuzigoot Pueblo Ruins

By JEANETTE SWANSON
Phoenix, Arizona

On a silent brooding hillside
In the honeycomb of room on room,
The Old Ones lived, well fortified
From enemies who sought their doom.
And in the valley stretched below,
Where the Verde River carves its way,
They dug canals for water flow,
Much like our own this modern day.
They grew small crops and stored them well,
Refrained from war and crippling strife;
This hillside was their citadel,
This valley source of strength and life.
The Old Ones, gone from this gaunt hill,
Pervade it with their presence still.

Within

By TANYA SOUTH

All that is needed to advance
Lies deeply in your source,
And every height of eminence
From deep within must course.
Thus are you master of your fate,
Whatever be your worldly state.

DESERT BREED

By MABEL COOPER
Citrus Heights, California

I'm desert bred but I'm city bound,
Tied hand and foot, as it were.
And mem'ry must serve as eyes for the soul
Though it sees but a distant blur.

A love and a duty holds me here
In the heart of Gotham's might.
But the city lights are a far, far cry
From the desert stars at night.

I'm city bound by a trust that's old,
As old as the desert sands,
And it ties me here by a bond too strong
To be broken by human hands.

THE DESERT'S SECRET

By AMY VIAU
Santa Ana, California

To the bruised old cactus, I paused to say
"Did you happen to notice one long past
day,
Great covered wagons that came this way?"

And I knelt close by the cactus-base
While I searched the sands from place to
place,
But could find no wagon wheel print nor
trace.
And yet, I knew that none would be there
For deserts seldom their secrets share.

Apache Tears in the Chuckawallas . . .

This month's field trip is to the famous Wiley's Well collecting area in southeastern California—not for the agate family of minerals for which this region is noted—but for black obsidian — Apache Tears — volcanic glass. First discovered by Loran Perry in the 1930s, this field on the southwestern flank of the Little Chuckawalla Mountains apparently has been overlooked by the rockhound fraternity.

By EUGENE L. CONROTTO
Map by Norton Allen

IT WAS EASY to understand Loran Perry's pride. After 25 years of exploring the desert and collecting minerals, the discovery and even the re-discovery of a new gem field can provide quite a thrill.

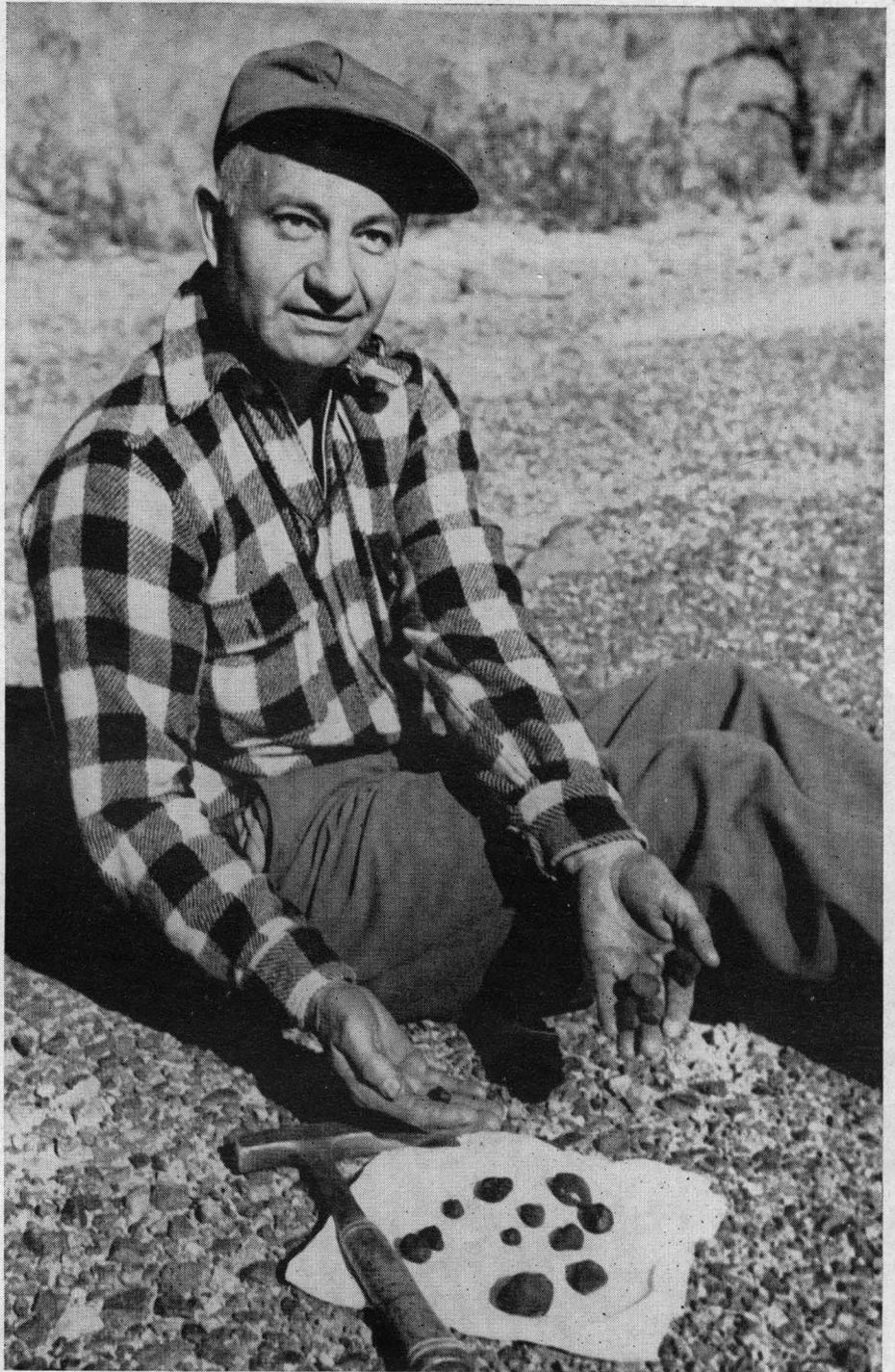
"Meet me at Wiley's Well on January 11," he wrote, "and we'll scout an Apache Tear field I first found in the '30s—a field that apparently has been overlooked by the rockhound fraternity."

His letter sent me to the reference library where I found not one mention of Apache Tears in the Wiley's Well area—one of California's most famous collecting grounds located near the eastern end of the Imperial-Riverside county line in a sand-filled desert plain boxed in by the Little Chuckawalla, Mule and Palo Verde mountains and the Black Hills.

Most of the fire agate ground for which Wiley's Well is most noted currently is held under active mining claims, but even today, after years of popular use, the region is generous with geodes, chalcedony, pastelite (opaque chalcedony of pastel shades), sard (clear translucent yellow-brown agate) and carnelian (clear translucent reddish agate). And now, thanks to Loran Perry, I can add Apache Tears to this list.

My traveling companion was John Bainbridge, *Desert Magazine* compositor and proficient amateur artist. When we arrived at Wiley's Well an hour after dawn on that bright sun-filled day, Loran, his wife Rose, and their guests, Lou and Louise DeWolfe of West Covina, were breaking camp and stowing their bedrolls and breakfast gear into their Jeeps.

Before we started, Lou and Loran scattered two kegs of rocks on the ground. It was very excellent agate



Loran Perry places Apache Tears on a white cloth. These gem stones are found on the surface of varnished desert pavement. Photo by Lou DeWolfe.

cutting material which they had gathered on previous field trips.

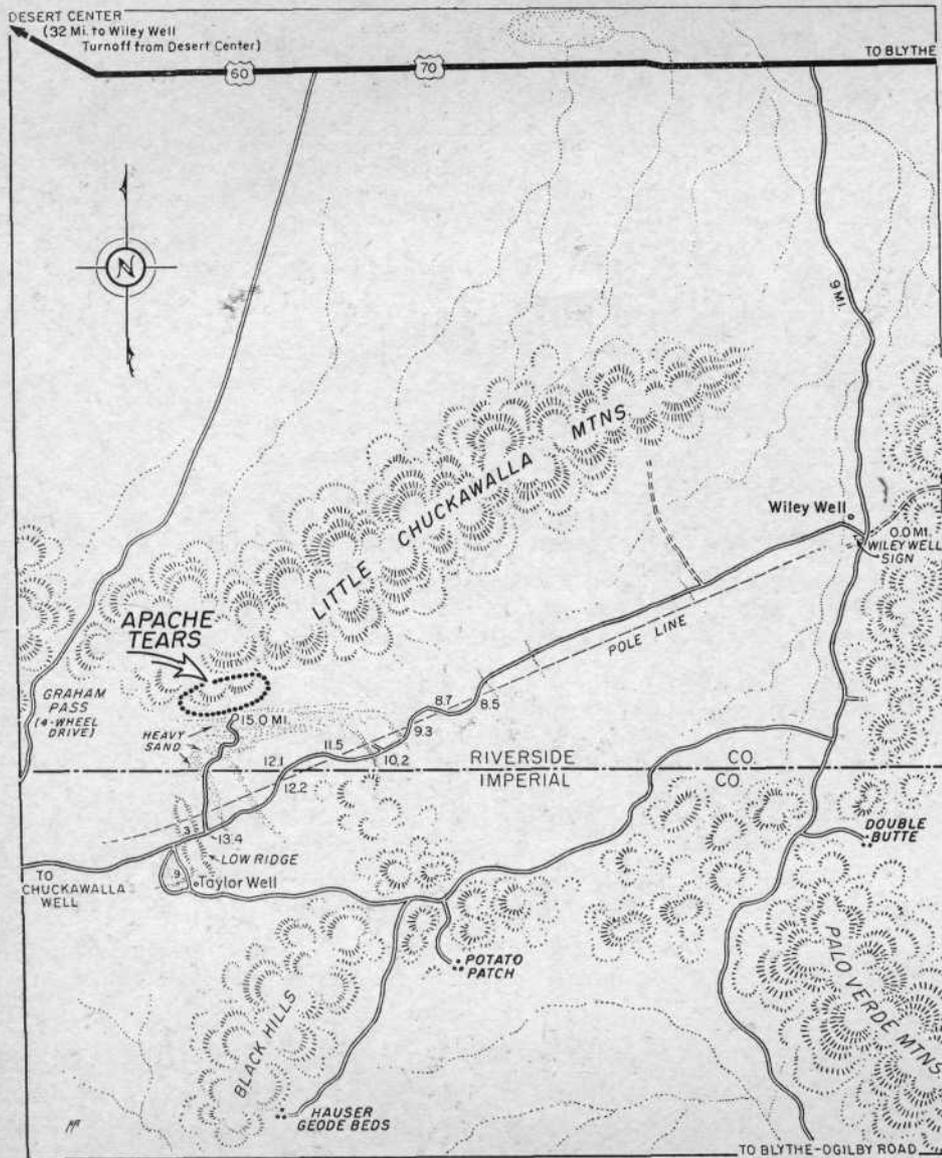
"We can't see these rocks ending up in the city dump or a rock wall, so now we haul back a little every time we come out to the desert," Loran explained.

Some of the stones had been sawed

in half to reveal their colorful interiors. One beautiful yellow and black slab caught my eye and I examined it closely.

"This is a better rock than I've found on my last three field trips," I told Loran.

"Take it home," he said, "that's



Apache Tears, on cloth, are difficult to distinguish from the dark malpai stones they are found on. Photo by Loran Perry.

what it's for." And I did. Today it rests on my bookcase to commemorate the praiseworthy event I witnessed that morning.

We made a fast 13-mile trip over the bladed and nearly straight dirt road which parallels the pole line along the southern flank of the Little Chuckawallas. From a creosote and ironwood flatland in the Wiley's Well area it carried us westward across one wash after another to a region dominated by the green-boughed palo verde.

The Apache Tear area lies along the malpai flanks of the Little Chuckawallas about a mile and a half north and slightly east of the bladed road. The turnoff is on the near side of a long reddish malpai-covered ridge dotted with a few whip-armed ocotillos. An experienced desert driver should have no difficulty bringing a standard car to this junction from Highway 60-70 via Wiley's Well. The numerous washes which the road crosses are sandy and could present some difficulty if a driver allows his vehicle to lose momentum while crossing them.

From the pole line we made our own trail to the collecting field—in four-wheel drive all the way—over a trackless wash area in which the palo verde jungle often hid the landmarks we were steering toward. For this reason it is best to take your bearings at the pole line road. The collecting field is on the malpai flanks that rise out of the wash and climb to the dark eroded range beyond. These background hills lie between two prominent points in the horizon—the Big Chuckawallas on the west and the Little Chuckawallas on the east—towering like two giant bookends above the center hills.

Once beyond the wash, Loran recognized the malpai slopes that contained the Tears from the several shattered white plasterboard artillery targets on the higher ground that were used in wartime maneuvers.

Hunting for Tears was fun because they were sparse enough to afford a thrill every time I found one, and as my eyes became accustomed to spotting the dark obsidian nodules lying on the surface of the equally dark malpai, I became more expert at the game. While the somber rocks which make up the desert pavement here are highly varnished and in the right light glisten like polished shoe leather, the Apache Tears are dull black in color. Thus, the traditional prospecting procedure is reversed—instead of looking for a bright object on a somber background, you look for a subdued object on a shiny background.

The Tear collecting area extends over a mile along the rolling malpai



Jeep leaves the main bladed road (foreground) and heads toward Apache Tear area at base of Little Chuckawallas (arrow). Nearly entire mile-and-a-half distance from this junction to the collecting field is through sand-filled arroyo.

hillocks. How far back into the mountains it went, we were not equipped to determine. The possibility exists, however, that more and bigger obsidian nodules lie on the higher ground.

We had more luck finding the Tears on the flats, especially where the desert pavement stones tended to be small, than on the slope sides. Although by no means plentiful, we also found bits of chalcedony and jasper in this region.

Beneath the Apache Tear's dull weathered surface are solid interiors of glossy black volcanic glass. The vitreous luster of cut and polished or tumbled obsidian jewelry is very attractive.

The smaller specimens were somewhat oblong, measuring from a half-inch in width to an inch in length. The larger Tears were more rounded and up to two inches in diameter.

All obsidian fractures in a conchoidal (curved) pattern, and therefore the nodule surfaces have a gouged or scooped-out appearance. The stones have no crystalline structure, for the magma from which they were formed was cooled so quickly—supercooled, the scientists call it—that the molten silicates had no chance to group themselves into crystal form. Instead, the magma was frozen into small razor sharp masses, and after having brushed the pieces of a shattered Apache Tear into my hand only to have the tiny glass fragments draw blood in a dozen different places, I can vouch for the material's razor-sharpness.

It was this quality, of course, which made the stone so useful to the Indian. From it he fashioned spear and arrow points, and knives — and un-

doubtedly a bright piece was used now and again to adorn his body.

The obsidian we collected that day was uniformly jet black and almost opaque—only the very edges of tiny chips being translucent.

Obsidian is not a plentiful gem stone. The most famous Tear collect-

ing fields in the Southwest are in east-central California in the Mono Crater region (*Desert*, Dec. '41) where steel blue, black and banded specimens are found; the deposits near Superior, Arizona (*Desert*, Aug. '39) at last report closed to collectors by the mining companies which hold the land; the ancient

When Lou DeWolfe found he had more cutting material than he could use, he started hauling it back to the desert and dumping it.





Louise DeWolfe, right, holds Apache Tear nodules. With her in the collecting field is Rose Perry. Photo by Lou DeWolfe.

Indian quarry 50 miles south of Delta, Utah, where mottled obsidian is found; and the several Nevada fields near Beatty (*Desert*, June '42), Fish Lake Valley near Coaldale (*Desert*, Sept. '50), and in the Monte Cristos northeast of Coaldale (*Desert*, May '51). There also is a Tear area on the Mojave Desert about five miles north of Bagdad in the shadow of the Amboy Crater (*Desert*, Nov. '49).

When everyone in the party had a half dozen or so Tears—"enough for a necklace," as Rose Perry put it—we circled back to the parked Jeeps through a portion of the wash. Here the palo verdes were dense and the song of quail came to us from every

direction. In the clean sands were numerous tracks of small animals, and the larger prints of deer and possibly burros.

We spread a potluck lunch on the hood of a Jeep, and while we ate in the warm sunshine, I had an opportunity to become better acquainted with the DeWolfes.

Lou, an aircraft engineer by trade, and Louise, an organist and music teacher, explore the desert in what is now their fourth Jeep. He is one of several men I have met in recent years who has switched from hunting and fishing to gem stone collecting as an outdoor sport. In fact Lou had a hunting and fishing program on a local

Salt Lake City television station a few years ago.

"Hunting for rocks is more fun than hunting deer," he explained. "You meet more interesting and sociable people—and it's a sport you can share with your wife."

The temptation to "bang around with rocks" apparently outweighs any desire on the part of Mrs. DeWolfe to protect her hands, unlike so many other talented people who play a musical instrument.

"When I come out here," she told me, "I divorce myself from the life I lead in the city. The desert gives me an opportunity to critically examine myself."

After lunch we drove back to the bladed road, crossed it, and made our way to Taylor Well, a dangerous gaping four-foot wide and 40-foot deep dry hole on the opposite bank of a sand-filled wash. The rotting palo verde supports appeared ready to give way with the slightest pressure. By crawling as close to the edge of the hole as I dared, I caught a glimpse of a short crudely-fashioned ladder on the bottom of the pit.

This is one of many now abandoned and forgotten wells along the old Bradshaw Road which the main bladed road in this area closely follows. The Bradshaw Road was built in 1862 as a direct overland route from San Bernardino to the La Paz, Arizona, placer gold fields. It entered the Colorado Desert through San Gorgonio Pass, skirted Mt. San Jacinto, followed the flank of the Santa Rosas to the Indian villages of Toros and Martinez below present-day Indio, and then headed almost due east across the northern end of the Salton Sink to a line of precious wells—Dos Palmas, Canyon Spring, Tabaseca Tank, Chuckawalla Well, Mule Spring, Willow Spring—and finally northward to the Colorado, Bradshaw's Ferry and La Paz.

The Bradshaw Road heyday lasted only two years, for the La Paz was followed close on the heels of the boom. In 1877 the Southern Pacific railroad completed its San Bernardino to Yuma line, and the Bradshaw Road was relegated to only occasional use. Wiley's Well was dug in 1908, many years after the Bradshaw Road's period of prominence.

From Taylor Well the jeep trail continues south and east past the Black Hills and their famed Hauser and Potato Patch geode beds (*Desert*, May '47), to the Ogilby road at a point four miles south of Wiley's Well. Near this juncture is the Double Butte agate area (*Desert*, Nov. '50), and the fire agate fields of Coon Hollow.

We Would Protect Desert Plant Life

Down through the centuries the flowers and shrubs and trees which grow on the desert have developed their own special devices for survival. Some have thorns, others bitter juices, a few unpleasant odors, and all of them have adapted to meager and erratic rainfall. But in modern times a new enemy has appeared against whom they have no defense—and that is the hand and tool of thoughtless or unscrupulous human beings. And so, since plant life is essential to the welfare of mankind, it has been necessary to pass laws for the protection of the native shrubs of the desert. Here is a brief summary of those laws.

By HARRY C. JAMES
Executive Director, Desert Protective Council

"MADAM, I WONDER if you know it is against the law to pick those flowers!"

The well-dressed woman straightened up and glared at the old-timer whose desert-scarred jalopy had pulled up behind her big shiny automobile, parked along the roadside.

"And what law am I violating, may I ask?" she retorted in a haughty tone of voice.

The old-timer scratched his head.

"Darned if I know, lady," he said. "All I know is it's against the law."

Unabashed the woman went on picking wildflowers. The old-timer shrugged his shoulders and drove off.

Many of us desert lovers have doubtless often been in the same predicament as the old-timer! We wanted to protect the wildflowers, but we lacked the authority to do it.

Recently a group of Sierra Club members were hiking up a rather isolated arroyo in Anza-Borrego State Park. Close to a trickle of water they came upon a party of boys.

"We're on a primitive desert camping trip," their leader explained.

"Primitive" indeed! Here in a State Park the boys had a good-sized barrel cactus slowly broiling over a bed of coals. They had stripped innumerable small palm trees and were using the fronds to line a channel to bring the trickle of water closer to camp. They were using more green fronds to make beds.

One time as I was skirting a low desert hill near Mono Lake I saw a large stake-bodied truck pull out of a short dirt road. It was filled to capacity with a species of some small squat twisted desert shrub. From the driver

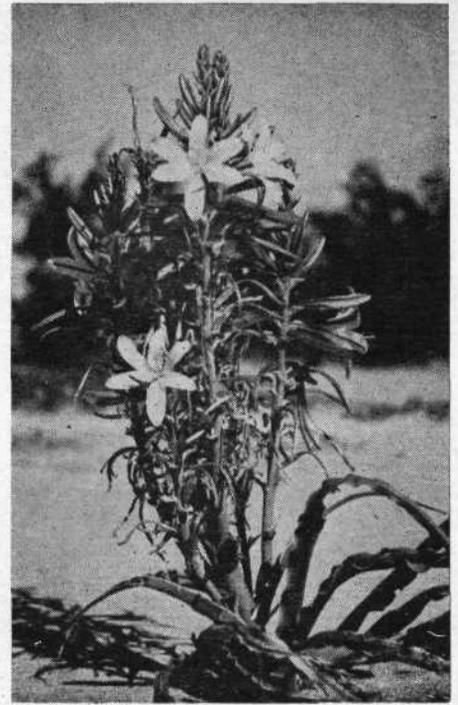
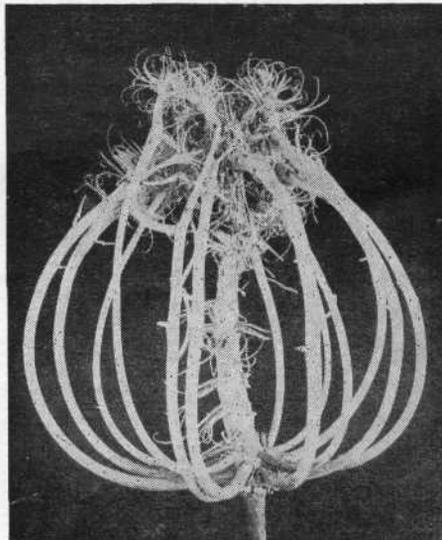
I learned that he was taking the plants to a Los Angeles company that sold them as "Ming trees."

Later I described the species to a Yosemite ranger-naturalist who said that it was a rare one and that the commercial outfit in question had just about obliterated it in that area. The desert region being so despoiled was outside the boundaries of Yosemite National Park, so I wondered — was this within the law?

What is the law with regard to the taking of desert plants? Is the desert flora protected by state or county laws—or by both? Here is what I found out.

With the exception of Utah all the states of the Southwest have laws protecting native plants. With regard to

Evening Primrose is more decorative after it is dead than when alive — and lasts many times longer.



Desert lily is fighting a losing battle against thoughtless persons — who find that it wilts soon after it is plucked—and the seed that might have been broadcasted by the wind for future flowering is lost forever.

Utah, Dr. Walter P. Cottam, Professor of Botany at the University of Utah, has this to say:

"Utah appears to have no laws on its statutes protecting certain species of flowering plants or preventing their removal. A year ago a group of us met and considered these matters, but nothing yet has specifically been formulated to present to our legislature. Seventy-two percent of our area belongs to Uncle Sam and as you know, removal or picking flowers is prohibited by the Forest Service. Our mountain areas not regulated by the Forest Service are privately owned and it seemed to us that any laws framed to cover these matters would be ineffective and would certainly be vigorously opposed . . . We do have a serious problem along Highway 91 near the corners of Utah, Arizona, and Nevada, where there has been reported serious removal of our warm desert cactus flora. Your laws in California seem to direct some of your people there for cactus garden specimens . . . Overgrazing constitutes such a serious problem in this state that to worry the public with laws prohibiting the picking or removal of flowers would be like attacking fleas rather than elephants. Maybe I am wrong."

Following is a summary of the state laws designed to protect the floral landscape in Arizona, California, Nev-

ada and New Mexico, and of county ordinances in Southern California:

ARIZONA

State laws in Arizona prohibit the destruction or removal from public lands of any plants growing within 200 yards of any highway, and beyond that zone the following are protected:

All species of the following families — Fern, lily, iris, amaryllis, orchid, orpine, saxifrage and cactus.

All species of the following genera — Columbine, lobelia, shooting star, primrose, ocotillo and native palm.

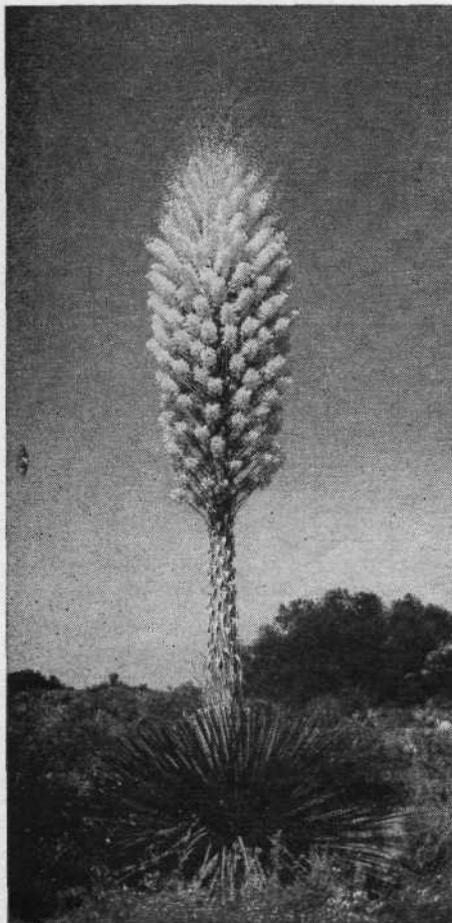
All the following species — Scarlet gilia, desert holly, western red bud, smoke tree, crucifixion thorn and flannel bush.

The above species may be removed from private lands only on written permission from the owner.

The Arizona Commission of Agriculture and Horticulture may issue permits for a specific number of plants in the protected group for scientific or educational purposes. No permit, however, may be issued for more than one shipment of plants, nor for more than 30 days.

The Commission may issue a permit for the removal of Yucca leaves

Yucca Whipplei — one of Southern California's most decorative shrubs. It is protected by law.



for processing to obtain fiber, provided the processing plant is within the state.

No person or common carrier within the state may receive plants in the protected group or transport unless the person offering them exhibits a written permit showing legal right for the removal of the plants.

Violation of the law is a misdemeanor punishable by a fine of not more than \$300 for each separate offense.

CALIFORNIA

The California penal code provides that every person who willfully or negligently cuts, destroys, mutilates or removes any native tree or shrub, or fern or herb or bulb or cactus or flower growing on public land, or on private land without a written permit from the owner or his authorized agent, or who offers or exhibits for sale any native tree or shrub, fern, herb, bulb, cactus or flower taken from public lands or from private lands without the written consent of the owner, shall be guilty of a misdemeanor and upon conviction shall be punishable by a fine of not more than \$200 or imprisonment in the county jail for not more than six months, or by both such fine and imprisonment.

The California law, however, shall not apply to any native tree, shrub or plant which has been declared by law to be a public nuisance.

Any peace officer and any fire warden in California is authorized to enforce the law, which also applies to the removal of leaf mold.

NEVADA

State law in Nevada provides that it shall be unlawful for any person or company to cut, pick, mutilate, destroy or remove any tree, Christmas tree, shrub, plant, fern, wildflower, cacti, desert flora, or any seeds, roots, bulbs from any land owned by or under the control of the State of Nevada, or without written permission from the owner or occupant of any private land.

Violation of the Nevada law is a misdemeanor punishable by a fine of not less than \$10 nor more than \$200, or by imprisonment in the county jail for not less than five days or more than three months for each violation.

In Nevada, however, the provisions of the act do not apply to persons picking cacti or desert flora for the use and adornment of homes and gardens within the State of Nevada, nor is the law intended to restrict the research activities of institutions of learning.

NEW MEXICO

New Mexico state law provides protection for the following plant families: Fern, lily, iris, amaryllis, crow-foot, lobelia, primrose, heath, gentian, violet, purslane, apple, phlox, orchid,

orpine, saxifrage, evening primrose, dogwood, ivy, butterfly weed, figwort and cactus.

It is unlawful to destroy, mutilate or remove these or any other native plant, except noxious weeds, growing within 400 yards of any public highway on public land, or on private land without the written consent of the owner.

Penalty for violation of the New Mexico law is a fine of not less than \$50 and not more than \$300 for each offense.

County Ordinances Protecting Plants

Nearly all the counties of Southern California have regulations pertaining to the protection of native plants. Some of these county laws are simple and direct and would seem to give very adequate legal protection to the desert flora within their boundaries. Other county laws seem decidedly inadequate in the plants they list for protection.

So far as I have been able to determine, the counties of Inyo and Mono have no laws for plant protection. Riverside County has only an ordinance, passed in 1940, which establishes two Wild Flower Reserves in the desert section of the county where grazing is prohibited from March 1 to May 13. The ordinance of Kern County has one interesting section which makes it unlawful "for any person, firm, or corporation to destroy wantonly the wildflowers of Kern County, by using said wildflowers in the decoration of automobiles, except in the case of public displays, under a permit to do so . . ."

The lack of uniformity in county regulations is confusing, but fortunately the state laws of California which of course apply in all counties, are so broad as to provide adequate protection and the problem is largely one of enforcement.

Following is a summary of the various county ordinances in Southern California designed for the protection of plant life:

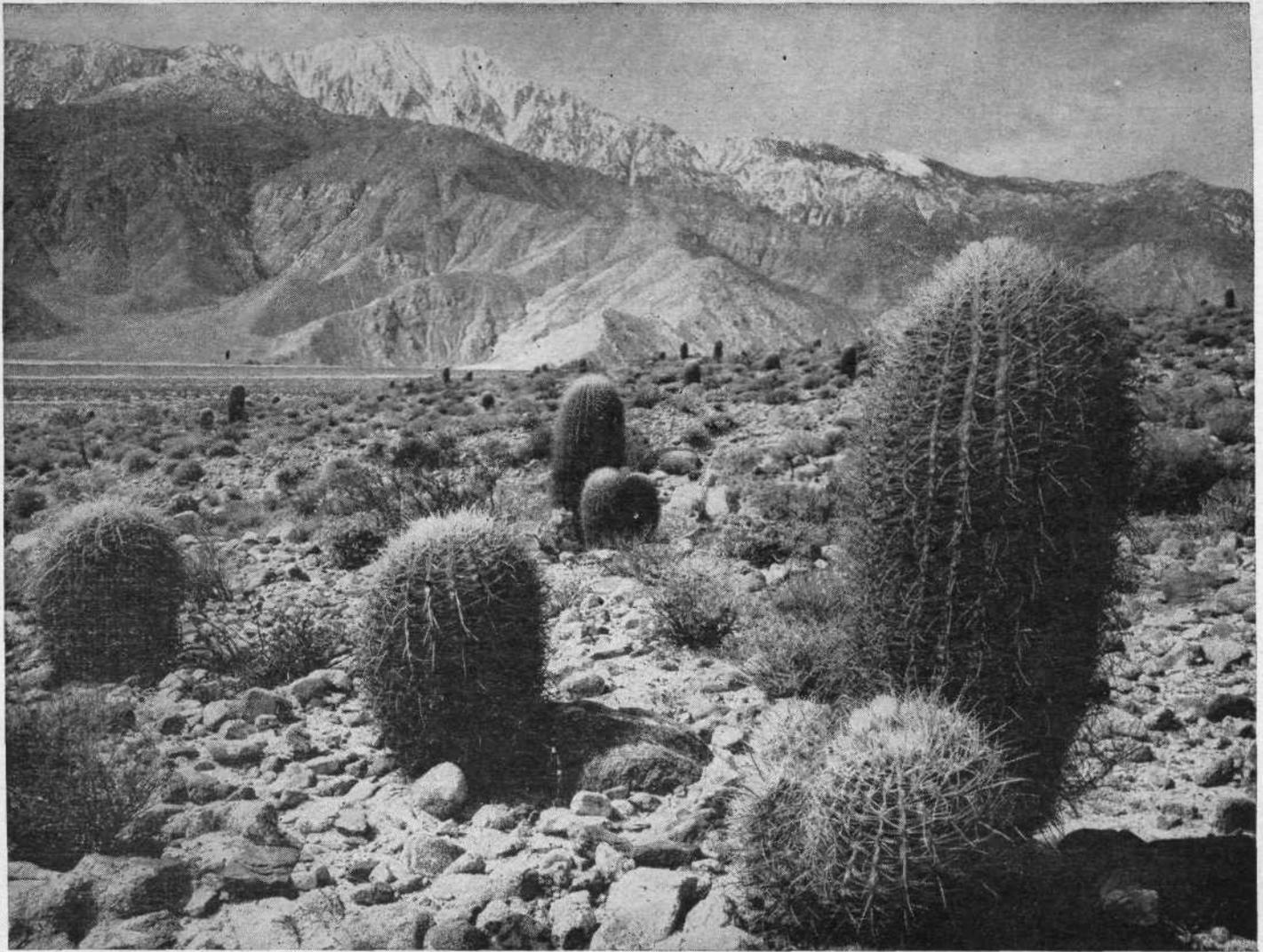
Imperial County

It is unlawful for any person, firm or corporation to dig up, remove, mutilate or destroy any of the following shrubs or blossoms growing upon public or private land without a permit issued by the Board of Supervisors, except by the owner or with the written consent of the owners:

Yuccas, fan palm, desert holly, desert verbena, smoke tree, lupine, ocotillo, scarlet bugler, indigo bush, agaves or cacti, of which 11 species known to be growing in this county are specifically named.

Kern County

Kern County regards it as a misdemeanor, punishable by a fine of not exceeding \$50.00, or six months' im-



Devil's Garden in Coachella Valley, California—as it was before plant robbers denuded the area of its Barrell Cactus. San Jacinto peak in the background. Photo by Fred Ragsdale.

prisonment, or both, to mutilate, destroy, collect or remove desert holly, cacti, Joshua trees, Spanish bayonet, all species and varieties of Mariposa lilies, fremontia, wild quince, leatherwood, etc.

Permits for educational or scientific collecting may be issued by the County Agricultural Commissioner.

Los Angeles County

Los Angeles County has an ordinance which makes it unlawful to "pick, mutilate, cut, dig, destroy, or remove . . . any native wild plant, fern, vine, shrub, or tree, or any bloom or flower thereof growing upon the land in the unincorporated territory of the County of Los Angeles."

Furthermore, it is unlawful "for any person to knowingly sell, offer or expose for sale any native wild plant," etc., removed from any public land.

Any violation of the Los Angeles County ordinance is considered a misdemeanor punishable by a fine of not

more than \$500.00, or by imprisonment for not longer than six months, or both.

Riverside County

Riverside County has no ordinance granting general protection to desert plants, but it does have Ordinance Number 258. This ordinance established two Wild Flower Reserves in the county where grazing is prohibited from March 1 to May 13.

Ordinance Number 258 was passed by the Board of Supervisors in 1940 as a result of public protests over the desecration by grazing of hundreds of acres of wildflowers in Coachella Valley in a year of an especially fine display.

San Bernardino County

In San Bernardino County Sections 4 and 5 of Ordinance No. 310 define as unlawful the digging up, removal, mutilation, or destruction of Joshua trees, Spanish dagger, Spanish bayonet, the desert lily, smoke trees,

desert holly, and indigo bush, as well as a great variety of cacti.

Any one who violates this ordinance is guilty of a misdemeanor.

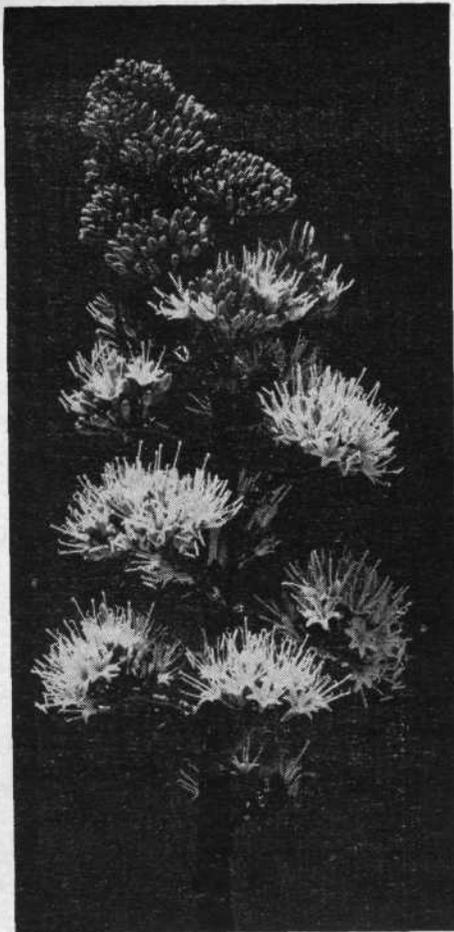
San Diego County

A San Diego County ordinance, Number 341, declares it unlawful to "cut, pick, dig, collect, remove, mutilate or destroy the whole or any part of any species of yucca, cactus, or agave, or any native tree, flowering shrub, ornamental plant, berry-bearing plant, vine, fern, or wildflower." To knowingly sell any of these is also unlawful.

In this ordinance it is expressly provided that its provisions shall not apply to any native plant which is declared by state law to be a public nuisance.

National and State Park Regulations

The general public, I am sure, is thoroughly aware that there are very strict regulations which give almost complete protection — so far as any



Agave or wild century plant, just coming into blossom. This plant furnished both food and fiber for desert Indians. Today it is taken from the desert only for ornamental purposes.

law can give complete protection — to all plants growing in National Parks and Monuments and in various State Parks. In National Parks and Monuments even dead plants are protected! Lest this seem slightly absurd the reader is reminded that such dead flora renews the necessary ground covering of duff, affords protection to small wildlife, and helps to preserve the natural scene as is.

Educational and scientific collecting is possible even in these highly restricted reservations, but permits must be secured from the proper authorities.

All the foregoing would seem to indicate at least two definite steps that must be taken to secure adequate protection for our desert flora. Certainly grazing should be restricted during the wildflower season in those areas of our deserts where, thanks to favorable winter and spring rains, choice displays of annual wildflowers occur. The Riverside County ordinance is just a first step in this direction. And there must be developed some more effective means than we now have for curbing

the ruthless taking of desert plants by commercial dealers. The growing number of complaints that come in to *Desert Magazine* and to the Desert Protective Council indicate this need.

Many landscape gardeners and nurserymen are just as interested as we are in protecting plant life in the desert. Thanks to Theodore Payne, for example, many rare and choice California wildflowers have been saved from extinction, so excellent has been his work in the commercial cultivation of many species. Unhappily there are too many of the other kind of dealers in plants — men who, eager for the quick dollar, encourage the merciless harvesting of desert shrubs and cactus, which bring big money these days to landscape men not harassed by any ethical qualms of conscience.

One very effective curb could be applied by the Plant Quarantine stations operated at state borders by the State of California's Department of Agriculture. Every load of desert plants entering California should be required not only to pass inspection but also to be accompanied by proper permits indicating ownership and quantity—such as are required by Arizona law, for example.

Another method of curtailing this unfortunate traffic in desert flora would be to require both the state and the county highway patrol officers of the southwestern states to make frequent checks of trucks loaded with desert plants. Such roadside checks should demand proper inspection slips if the load is from out-of-state, and ownership certificates if the load originates within the boundaries of the state.

Inspection officers at weighing stations also should be alerted to require proof of ownership, point of origin, etc., when loads of desert plants are weighed.

While there is need for protective laws in Utah, and in some of California's counties not now covered by ordinances, the imperative need, if the floral landscape of the Southwest is to be fully protected, is in the field of law enforcement — and more and more education, in the homes, the schools, and civic organizations.

It is imperative that youth groups of all kinds, even so-called conservation classes, be made aware of the need for protecting certain species, of the laws that try to afford such protection. The amount of damage that a large group of youthful collectors can do to a desert landscape is truly astonishing. I have seen such groups almost put John Muir's "hoofed locusts" to shame! Even the young fry can, and must be taught that it is against the law to rob the landscape of its decorative and protective cover.

Hard Rock Shorty



of Death Valley

Hard Rock Shorty had been missing for several days from his usual place on the porch of the Inferno store, and so when he returned he was the target for a lot of questions from his fellow sitters and whittlers.

"Doin' a little assessment work over on Eight Ball crick," he yawned.

"Yeah, the place is improvin' right along," he answered one of the old-timers. "One o' Pisgah Bill's ol' hens hatched a batch o' chickens last week.

"No, Pisgah ain't so well. He's ailin' in his neck an' is only eatin' soup—strained soup. Bill's troubles started the day somebody brought a new mail order catalog into camp.

"Bill set right down to look at the pitchers in that catalog, an' that give him the spring house-fixin' fever. He decided the shack autta be papered, and the purtiest paper in the book is what he got, rolls 'n rolls of it. Bill sure worked hard stickin' all that paper onto the shack walls an' ceilin' inside, an' what wuz left he put in the outhouse.

"He sed he never knew what a big house he had 'til he got to gluin' all that paper down. An' when he got through his neck wuz cricked at a right angle an' his tongue wuz swollen tight to his false teeth, an' his mouth wuz stuck shut, all but a little slit which he drinks his soup through.

"What dunnit? Waal, yu see this here wallpaper Pisgah ordered was that new fangled stuff with the glue on the back of it like stamps, an' Bill got all crippled up lickin' it to make it stick to the wall."

Desert Living in the City

Unless we have a rich uranium mine, most of us who dwell in the Southwest must make our homes in or close by the cities which provide our livelihoods. But this is no reason to miss out on the joys of desert living—including privacy, fresh air, sunshine, a naturalness in our surroundings, and even wildlife. Weldon and Phyllis Heald, who moved from a vast cattle ranch to the heart of Tucson—population center for over 200,000 people—write of the discoveries they made on city living—and why they prefer it to living in the wide open spaces.

By WELDON and PHYLLIS HEALD

MANY PEOPLE who love the desert and want to live close to it are under the impression that the only place to build a home is far off in the great open spaces away from the beaten track. Unless they are completely isolated or near a small town or resort area, they feel that they are missing the delights of desert living.

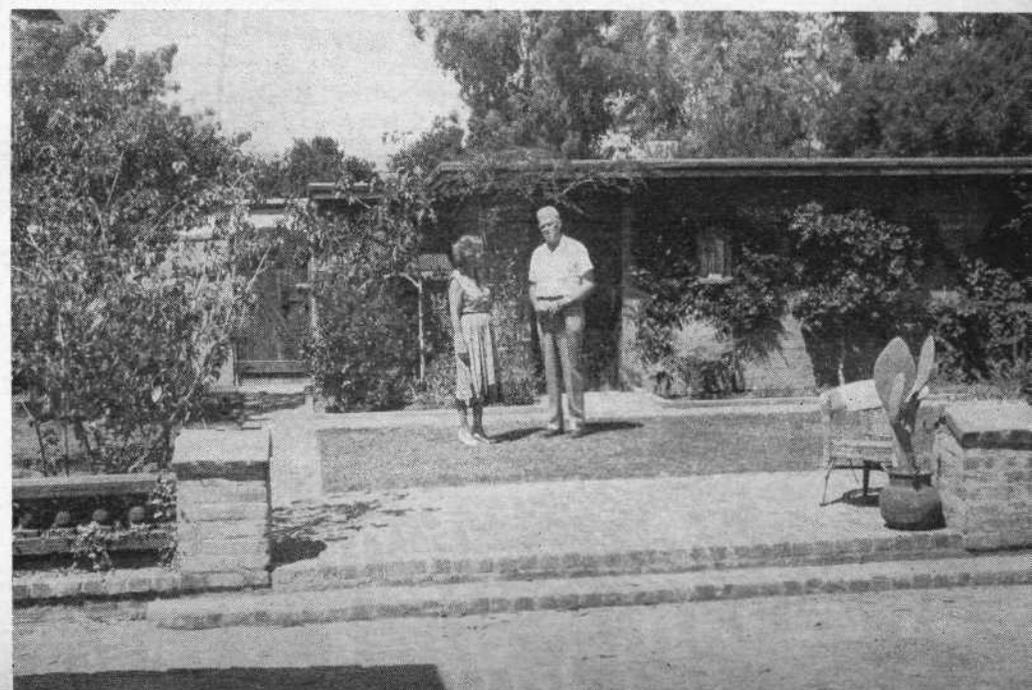
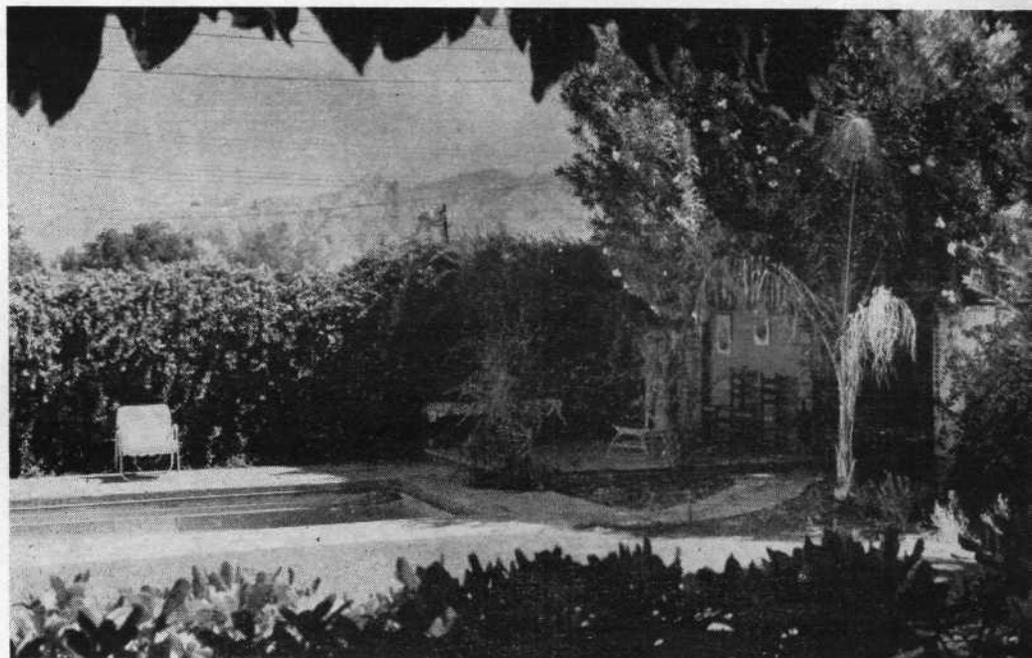
From personal experience we know this is not true. There are many cities in the Southwest—big and little—where over a million people enjoy benefits of the desert as much as do the detached far-removed hermits.

Tucson is such a Southwestern city. Three years ago we sold our 8000-acre cattle ranch in southwestern Arizona and moved there. We didn't even compromise by building in one of the brand new subdivisions on the edge of town, but bought a 14-year-

TOP—Front entrance to the Healds' charming brick and adobe home. Photo by M. V. Murphy.

CENTER—View of the enclosed patio from the glassed-in porch. In background are the Santa Catalina Mountains. Photo by M. V. Murphy.

BOTTOM—The Healds enjoy outdoor living in the privacy of their neat and attractive yard.



old house in a long-settled neighborhood near the heart of the Old Pueblo. This was rank heresy, we knew, and our friends gave us a year to come to our senses. A former neighbor even offered to take care of our collie, Beautiful, for she was convinced city existence would kill a dog that had spent her life in the open chasing cows and rabbits. Not quite so much sympathy was shown our two cats, Barney and Whitey, although they were raised on warm milk served directly from its source to their saucers.

But strange as it may seem to the uninitiated, the five of us have discovered desert city living to be the most pleasant we have ever experienced. In fact, we thrive on it. Here, on our 65-foot lot, we have more peace, quiet, comfort and convenience than we ever had on the ranch, plus all the desert birds, plants and vistas that any five desert lovers could ask for. In our secluded walled patio—a green oasis in a world of gold—the sunshine is as brilliant, the stars as bright, and the moonlight as enchanting as in the remotest places. The small blue swimming pool supplies cool pleasure, not only to us but to our night-flying visitors, the bats, who swoop down and

skim its surface. Each morning and evening we greet other acquaintances—wild doves that come in pairs or small groups to sit on the flagstones along the water's edge and drink deeply. That Barney and Whitey might be out sunning themselves bothers no one. Even we have ceased to worry, for we find that by keeping the cats well-fed we have cut their interest in birds to a minimum.

In the patio grow tall oleanders, forming a charming frame for the Santa Catalina Mountains which stand high on the northern horizon. Two families of cardinals nest among the thick foliage and white blossoms of these trees. They are loud-spoken and dictatorial in their manner, telling the cats off in no uncertain terms, and refusing to permit other birds to stake out homesites. But they allow the doves, robins, orioles and sparrows to enjoy the fruit of our nectarine tree, and to sway on the fronds of the Cocos plumosa and date palm.

Our front yard is planted as a desert garden and proudly possesses two palo verde trees, 25 to 30 feet high. Ocotillos, barrel cactus, young saguaros, prickly pears and other native plants are scattered about with natural-

looking casualness. Along the driveway is a colorful Texas Ranger hedge. In spring, when our miniature desert is in bloom, we look from the sandy ground to the lavender, cream and brilliant red of the various flowers, through the lacy yellow blossoms of the palo verdes to a clear blue sky, and find it mighty satisfying. The cactus wren, Arizona's state bird, finds it so too, as does the verdin, for both build nests in our front yard and live with urban unconcern within a few feet of the paved street. Even a citified roadrunner stayed with us last winter and appreciated the water we put out for it.

Our house, like most in the Old Pueblo, is not flamboyant. It wouldn't be given a second look in Palm Springs or Apple Valley for it lacks both dash and color and misses the modern touch by having windows instead of glass walls. But Tucsonians have learned through the wisdom of years of desert living that the beauty of a Southwestern city is subdued like the land from which it rose. So, our home is one-story brick and adobe, with walls nine inches thick. It is trimmed in white and yellow and follows the Spanish-Mexican style by having a simple ex-

LETTERS

Artifacts on Forest Lands . . .

Editor's Note—The statement "Individuals may collect Indian artifacts found on the surface of the ground on National Forest lands without a permit," made by O. V. Deming in his November '57 Desert Magazine article, "The Antiquities Laws and You," recently was challenged by a reader. The following is a letter received by Mr. Deming from the U. S. Department of Agriculture's General Counsel Office which supports the information given in his article.

Washington, D.C.

O. V. Deming:

You cited the following provision of the Antiquities Act (16 U.S.C. 431-433) and asked whether it applies to a person collecting arrowheads and "similar Indian artifacts" found on the surface of lands of the United States.

"Any person who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Gov. of the United

States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall, upon conviction, be fined . . ."

There appears to be no formal decision with respect to such activity on lands administered by any agency of this Department. However, the Forest Service knowingly allows private individuals to collect stone arrowheads, spearheads and mortars which are found on the surface of National Forest lands. The Service has adhered to this policy for many years, thereby indicating that small stone objects of that character, lying on the ground, are considered to be outside the purview of the Antiquities Act, as applied to National Forests. This office agrees with that view of the matter.

HERMAN D. PLAVNICK

Acting Assistant General Counsel.

• • •

Bulldozers for Assessment Work . . .

Randsburg, California

Desert:

I go along with you 100 percent on the anti-litterbug campaign, but how about a word regarding miners who haphazardly rut beautiful mountain and canyon landscapes? There should be a law against using a bulldozer for

assessment work, unless all the work is done in one place on the claim.

MIKE E. LEE

• • •

Perlite Is "Rock," Not "Ore" . . .

Fullerton, California

Desert:

In your March Mines and Mining section an item datelined Taos, New Mexico, tells of the discovery of "an 'almost inexhaustible' supply of perlite ore."

Perlite is a form of obsidian—volcanic glass—and ores are rocks from which metals can be recovered by proper processes, or from which sulfur, arsenic, phosphorus, etc., can be recovered. I do not think that any metal or other mineral can possibly be obtained from any of the many varieties of obsidian, so they would be classified as "rocks."

CHARLES S. KNOWLTON

Dear Charles: According to Webster, you are correct — but we've got a partial leg to stand on. "Ore" is "any material containing metallic constituents for the sake of which it is mined," but the dictionary definition goes on to say "although not strictly correct, ore, for want of a more appropriate term, is often applied to nonmetalliferous material . . ."—R.H.

terior. The pulse and heart of the house is centered in its patio, well-hidden from the public eye.

Inside we have striven for restful coolness. The desert glare is kept outdoors where it belongs. The living room, which divides the house in half, goes through to a glassed porch and looks out onto the patio. Its walls are a neutral yellow-green and the open-beamed ceiling is silver-gray with a driftwood finish. Hardwrought iron is used for all fixtures. Dining area, kitchen, Weldon's study and library, bedroom and bath are in the west wing, while Phyllis' study, bedroom and bath are on the east. Weldon, because his New England blood flows better in a cool summer climate, has his section refrigerated. With her north-country Scots ancestry, Beautiful also prefers it. But Barney, Whitey and Phyllis like the more realistic temperatures of evaporative cooling. They feel the out-and-in contrast is not too terrific. The pros and cons of the two types of air-conditioning make for fascinating family discussions.

The animals cannot change their wardrobe for summer living in Tucson, but the two-legged mammals of the household enjoy wearing bathing suits or shorts during the day. Then when they dress for an evening affair, a smart pearl-buttoned Western shirt, topped off with a bolo tie, is as formal as Weldon need get. The squaw dress, sleeveless and full, permits Phyllis to attend any kind of party.

A corner of the glassed-in porch the Healds use for breakfast and summer dining. Photo by M. V. Murphy.



Weldon and Phyllis Heald.

Entertaining is casual and pleasant. Swimming parties and barbecues in the patio are always informal and keep social life easy and unharassed. Our barbecue, which is built into a corner of the patio wall, stands close to the ramada where we have hot and cold running water, electric hot plates and

a refrigerator, eliminating the need to dash back and forth to the kitchen. There is plenty of room and the number of guests is no problem.

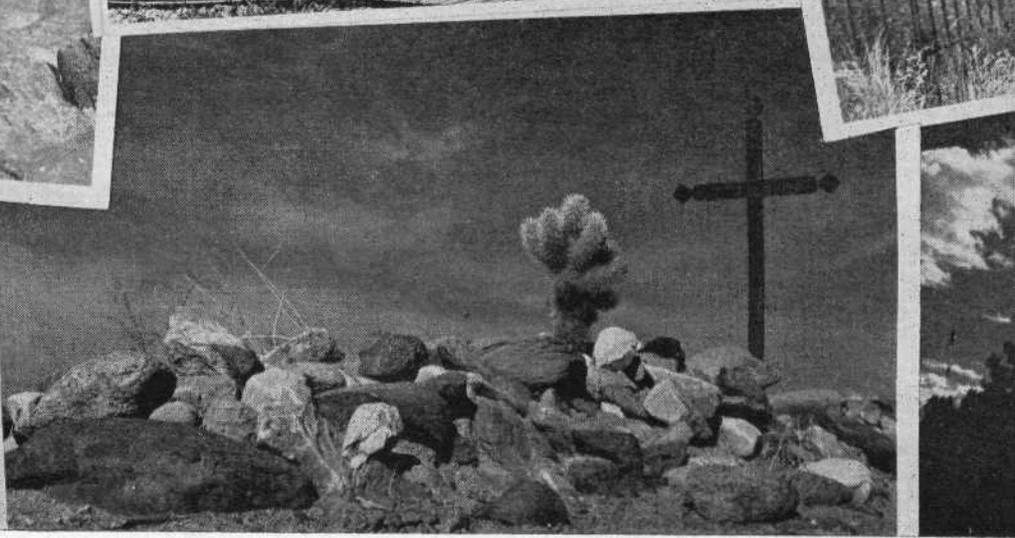
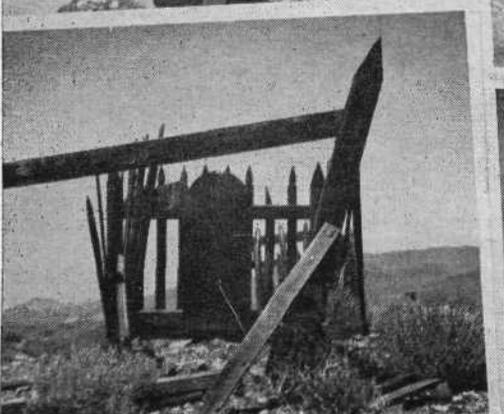
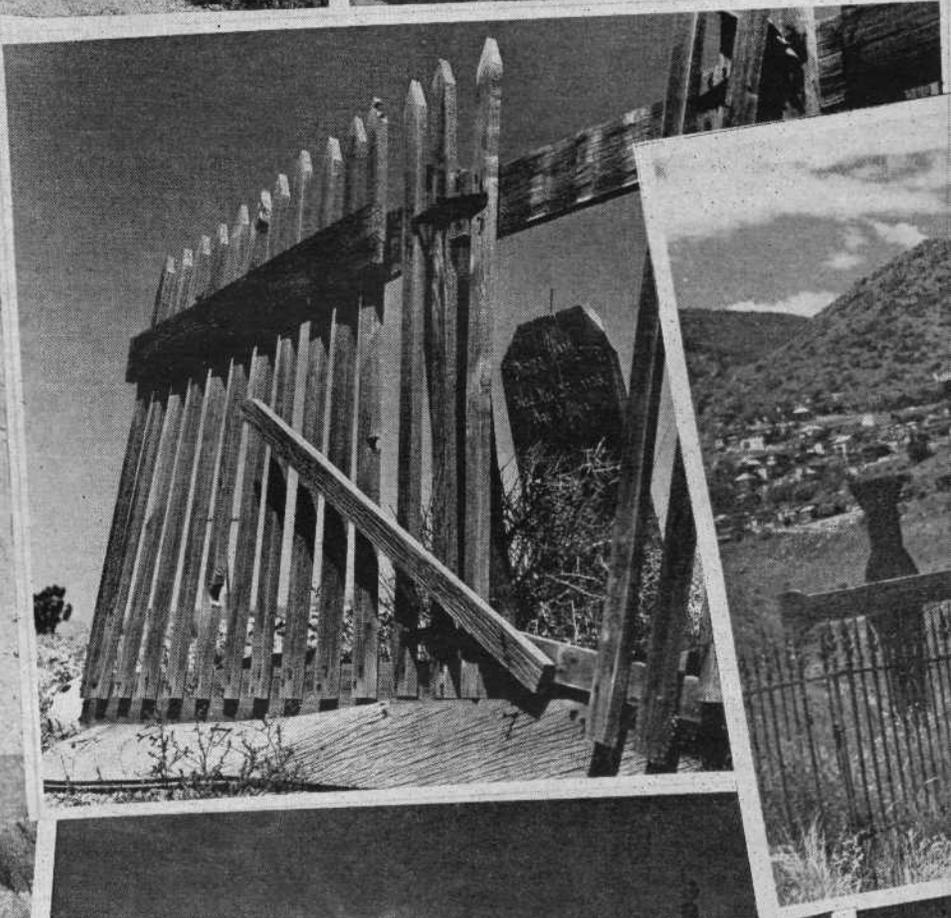
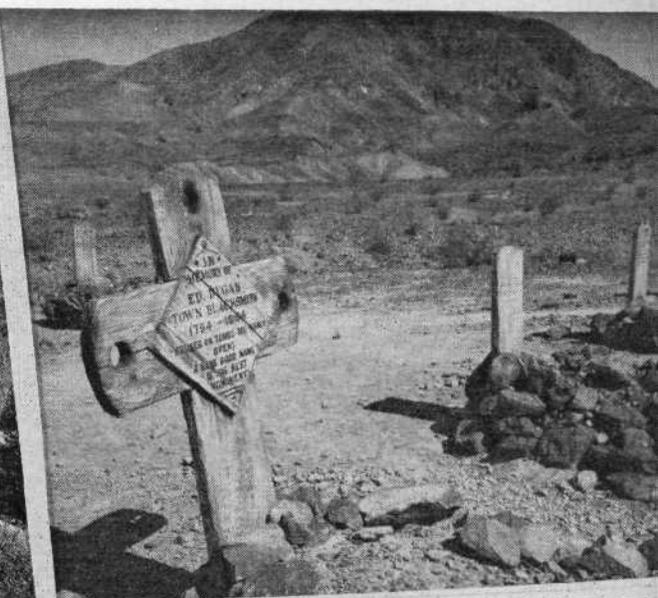
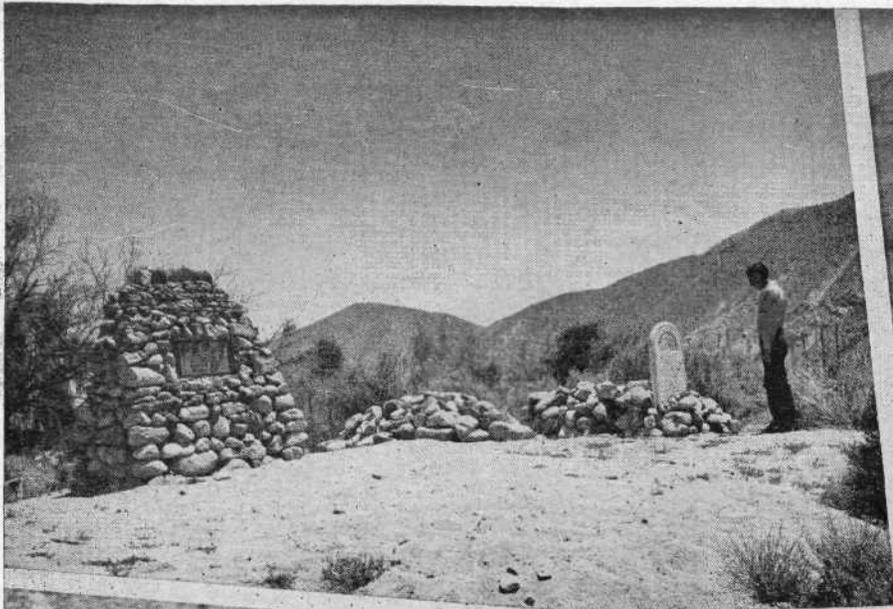
Churches, markets, shops, the University with its library within a few blocks, three little theaters and the many other cultural advantages of a modern urban area all add pleasure to our desert city living. Even Beautiful has found it more exciting to chase cars, from the safe runway of the sidewalk, of course, than to sit around the ranch house waiting for a stray cow to wander by.

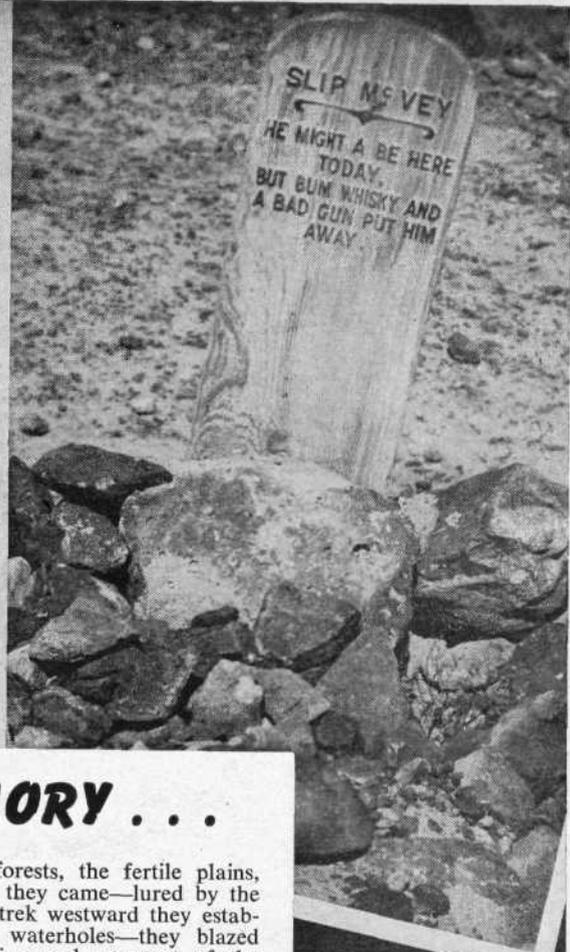
"But, don't you miss the quiet, solitude and naturalness after living for 10 years on a remote ranch?" our friends of the open spaces ask.

"What do you mean?" we ask in return.

In a 15 minute drive we can be out on the desert, and in an hour among mountain pine forests. In fact we now have much more opportunity to go wherever we wish, for one of the greatest benefits of city living is that we have far less responsibility and are less tied down than when we lived in the country. We keenly appreciate this freedom. It's like having our cake and eating it too.

So for those who work for a living—we are still hard at it—and cannot move into the desert hinterland, don't be downhearted. Discover as we have the delights of living in a desert city. In it you will find the pulse and heart of the great Southwest you love beating clear and strong.





IN MEMORY . . .

From the northland forests, the fertile plains, and the cities of the East they came—lured by the siren, gold. And in their trek westward they established trails and charted waterholes—they blazed the way for the exploration and conquest of the great virgin West.

Some of them gained wealth; many of them never reached the rainbow of their dreams. But rich or poor, they had courage and the hardihood to accept in good faith the hardship and sacrifice that are always the price of pioneering.

Today they lie in almost forgotten graves, their final resting places marked only by weathered headstones and crumbling fences.

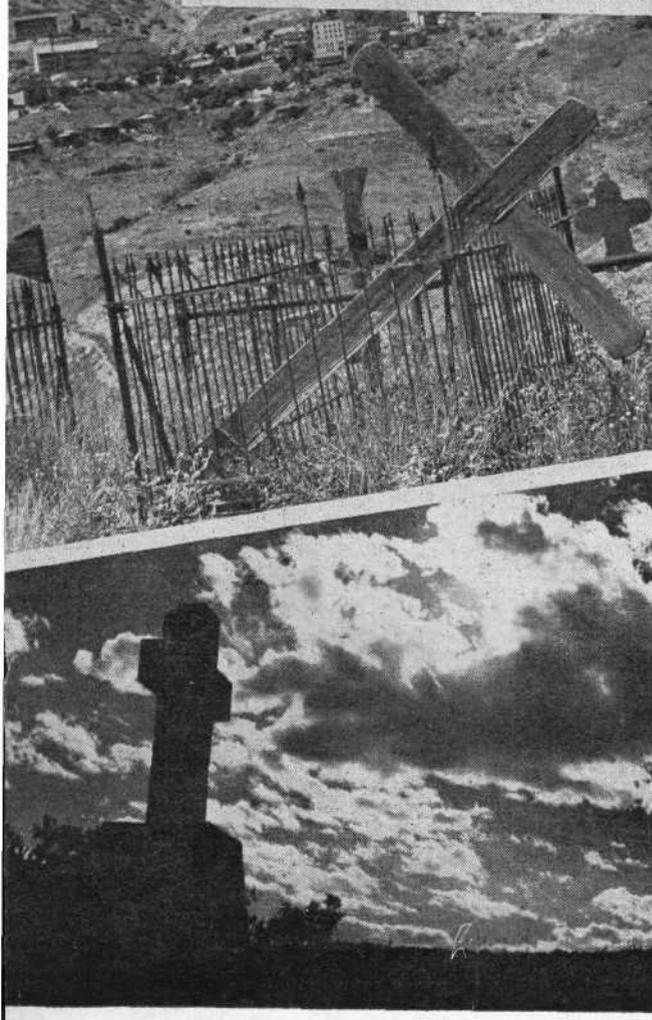
Their greatest contribution to mankind was not the gold and silver they mined from the earth but rather the tradition of daring to blaze new trails into an unknown land—the faith and courage to leave behind them comfort and security and venture forth into a new world where the way would be hard and the returns often disappointing.

To the memory of these men and women we pay a grateful tribute.

Photographs: Top row, from left—Vallecito cemetery along old Butterfield Stage Route in Southern California, Photo by M. Carothers; Boot Hill at Calico, California, by Carlos H. Elmer; Church on road to Chimayo, New Mexico, by Fred H. Ragsdale; "Slip" McVey's last resting place at Calico, by Carlos H. Elmer.

Middle row, from left — A remembrance of Nora Young at Calico, by Carlos H. Elmer; Goldfield, Nevada, cemetery scene, by John Meyerpeter; Graveyard at Jerome, Arizona, by L. D. Schooler.

Bottom row, from left—Grave at Columbus, Nevada; Ehrenberg, Arizona, grave marker, by L. D. Schooler; Cross of the Martyrs, Santa Fe, by George W. Thompson; Fray Garces Monument near Yuma, Arizona, by M. Carothers.



ON DESERT TRAILS WITH A NATURALIST -- XLIX

Night Life on the Desert . . .

Wildlife activity observed on the desert during daylight hours is only a fraction of that which occurs at night. Most wildlings seek concealment from their enemies as well as protection from the dehydrating effects of the sun, by hiding out during the day. Important lessons in the ways of these creatures can only be learned by watching them perform in the environment their species has adapted to.

By EDMUND C. JAEGER, D.Sc.
Curator of Plants
Riverside Municipal Museum

ONE NOVEMBER many years ago I camped in the haunts of the Pacific Horned Owl with Dr. Loye Holmes Miller, a very adept imitator of the call notes of owls.

As darkness came on, he sounded

the note of the female bird several times. Almost immediately the far-off deep stirring measured vigorous "whoo-hu-hoo-whoo-whoo" of a male was heard, quickly followed by equally distant and similar responses from several other interested males of whose presence we had not had the slightest awareness.

Again Dr. Miller gave the female

call note, and again came the forceful answers of the inquisitive males. We could tell by the increasing loudness of their calls that they were coming in closer and closer. In a matter of minutes at least four of the big birds were calling to their ladylove from trees and cliffs in our camp area.

In the light of the rising moon we saw them delineated against the night sky. After giving several decidedly vigorous "whoo-whoos" and waiting a long while for an approving answer from the prospective mate, the males, seemingly befuddled by the strange situation, flew away.

A few moments later Dr. Miller repeated the quavering feminine call note. The response was almost immediate, and big lusty male voices resounded through the still air. Soon the male birds were back with us, doing their best to discover the unaccountable female which could be heard but not seen.

However, even feathered suitors have limits to their curiosity and patience, and after a third attempt to find the source of the fascinating notes, they left for good.

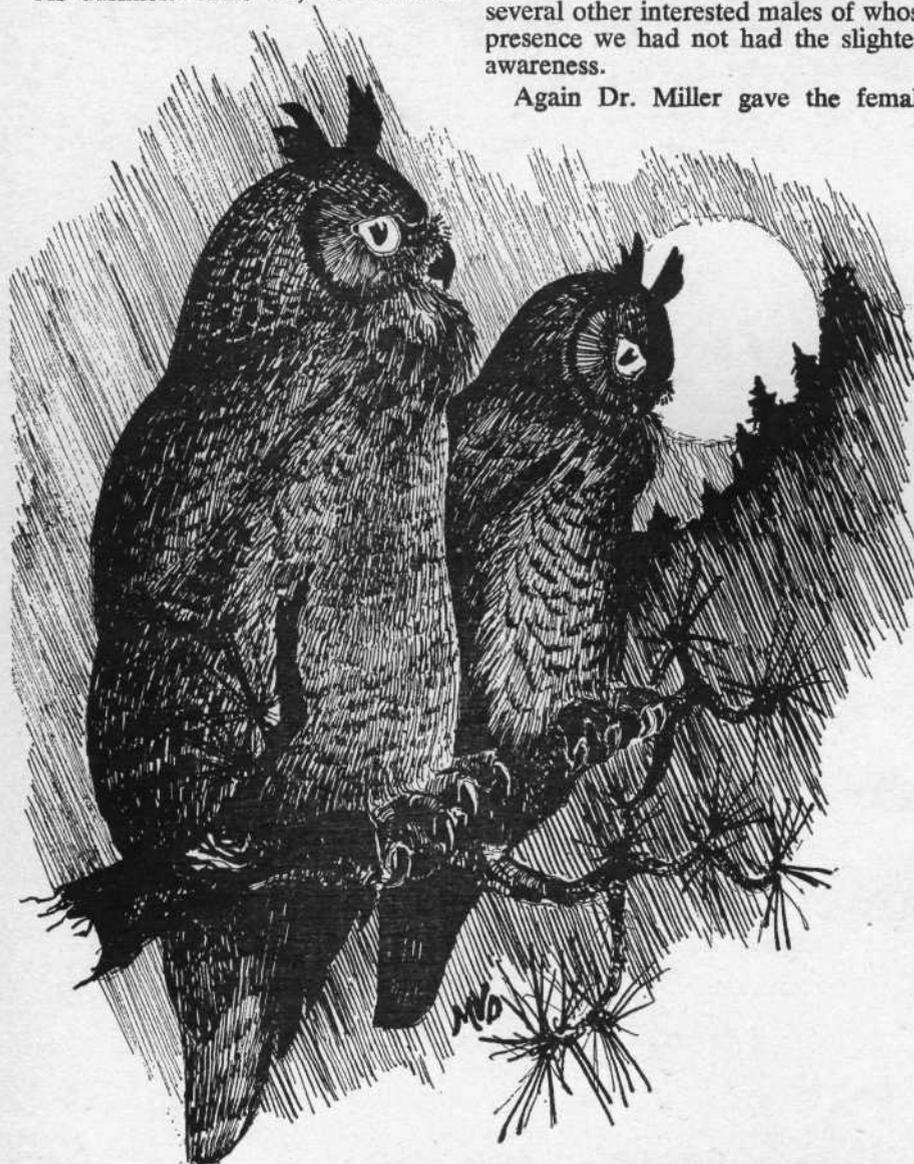
"A kind of mean trick to play on innocent owls," observed Dr. Miller. I agreed, but with reservation, for the incident had its humorous side, and too, we learned something of the owl's ways that night.

On a cool autumn night a year later, I was fortunate enough to witness some other curious antics of horned owls. I had just slipped into my sleeping bag when I heard strange chipping and wheezing noises. Looking up I saw outlined against the moonlit sky a large and a slightly smaller horned owl perched two feet apart on a cottonwood limb.

Presently they began addressing each other in peculiar hoots and shrieks, some of it sounding very much like bits of demoniacal laughter. Immediately following each period of noise-making came a short silence during which the birds, moving sideways along the limb, drew closer to one another.

Then, face to face, puffed up their feathers, thus greatly exaggerating their size, and began ludicrously moving their heads up and down in unison—this followed by a bringing together of beaks.

After repeating this "owl kissing"



Horned owls. Their courtship procedure is interesting—and noisy. Drawing by Morris VanDame.

several times, the birds suddenly snapped back three feet apart on the limb, and again engaged in the eerie nightmarish hooting. I soon concluded that horned owl courtship was not only a very interesting procedure to watch, it was also an extremely noisy one. This whole series of outlandish performances was repeated again and again for a half hour, and then they flew off.

These experiences convinced me of the importance of studying wildlife at night. There are hosts of animals which are active only after dark. To judge them mostly by what can be seen by merest chance in the daytime gives only a partial and often erroneous picture of their life histories.

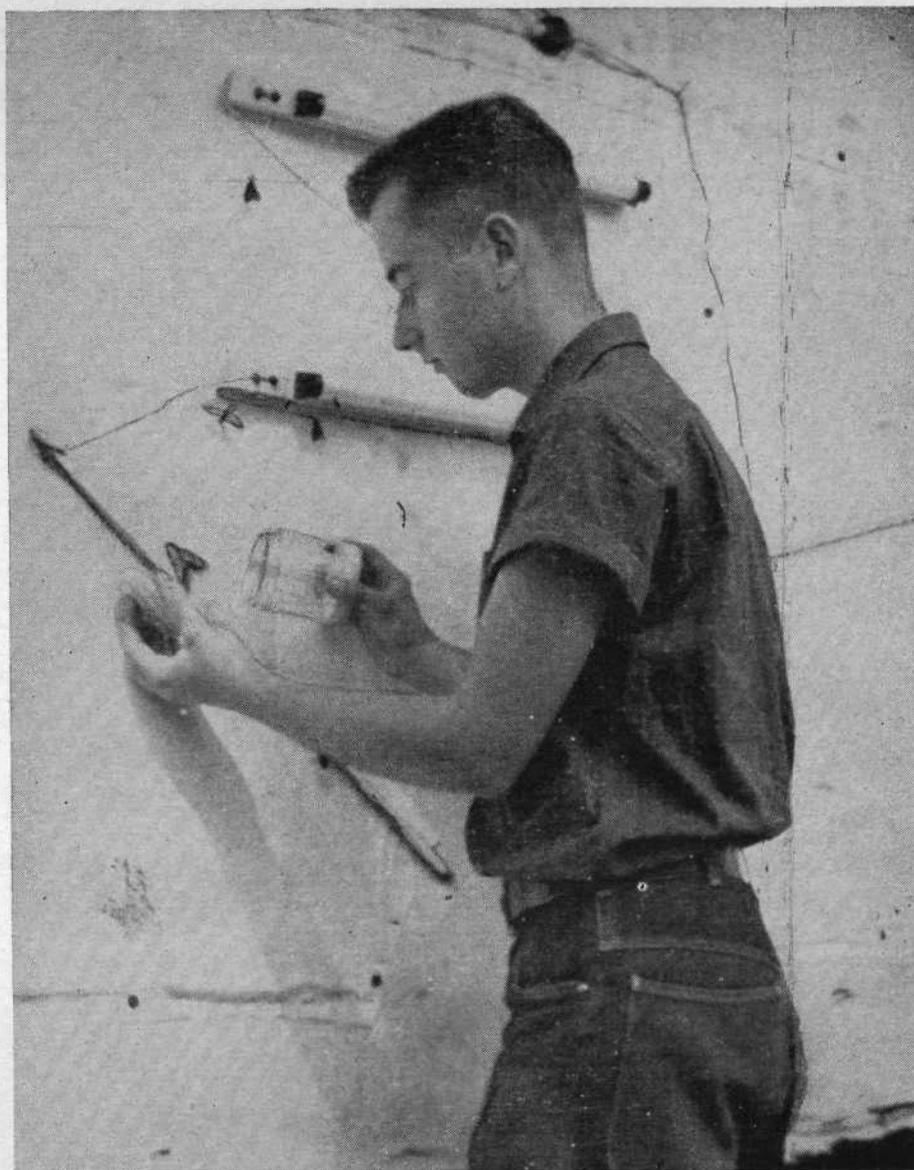
A more adequate estimation of the predominance of nocturnal animal activity to that which takes place during the day is realized from an observation made by Scripps Institution of Oceanography's Dr. Carl C. Hubbs. One early summer morning along a six-mile stretch of freshly oiled road in a rather barren desert area in southeastern San Bernardino County, Dr. Hubbs collected 104 snakes and lizards which had become hopelessly ensnared in the viscous substance, mostly during the hours just before daylight. Rodents, scorpions, beetles, walking sticks, dragonflies, crickets and sun spiders also were present in greater or lesser numbers.

"Numerous small patches of fur gave mute evidence," said Dr. Hubbs, "that much larger numbers [of rodents] had pulled themselves out of the tar or had been eaten by predators grading in size from innumerable ants to coyotes."

And all this on an ordinary stretch of creosote desert road where traveling by day one would have been lucky to see a dozen animals large and small.

For my after-dark observations I sometimes use a flashlight or kerosene lantern, occasionally a Coleman lantern. I often examine flowers, especially the larger ones, to see what insects may be sleeping or hiding in them. Many of the small flower-haunting bees hide among the petals and pollen-laden anthers; others lie in slumber or are entrapped in flowers with deep throated tubes which close at sundown. The bees do not choose flowers at random on which to pass their sleeping hours, but show partiality for particular kinds.

Some of the most unforgettable and rewarding of my night walks were those taken on warm summer nights when I had only a bright moon to help me see where I was going. Once a long-eared owl swooped down right



Noel McFarland collecting moths.

in front of me to pick up a pocket mouse, and twice I witnessed sidewinders swallowing kangaroo rats. On another occasion I watched a coyote rout out a jack rabbit from his hiding place in the brush.

Soon after dusk, especially in spring and early summer, I often hear the soft notes of Nuttall's Poorwill. When the birds are quite near I often hear, along with the more forceful two notes, a third quickly-given note with rising inflection. If there is a dusty road near I will walk along it and then am almost certain to see one of the Poorwills flying up before me as I approach; perhaps even see it hawking a moth, then settle down in the dust again with face circumspectively turned toward me. As I walk on, it allows me to get quite near before again flying a short distance ahead. It appears to be a game the bird is playing with me. If I turn on my flashlight I

may see a bright red metallic glow coming from its two large eyes.

One evening just after dark, Thomas Danielsen and I took a long walk along a stony road that cut across the steep and rocky eastern barancas of Panamint Valley. It led past the numerous mesquite thickets which edge the dry lake on the valley floor. As we sauntered past a seep of water, the rising moon revealed great swarms of small bats feeding upon the numerous moths which had flocked in to feed upon the nectar of the millions of small mesquite flowers which everywhere gave fragrance to the balmy April air. We could hear their high pitched notes which, coming from so many throats, made a combined sound of no mean intensity — thousands of little squeaks each vying for recognition.

An hour earlier, when it was still somewhat light, we had seen the soft-

winged creatures issue like miniature clouds from a slot-like canyon in which they hung up in caves or crevices during the day.

One of my very interesting and capable correspondents is Noel McFarland, a student at the University of

New Mexico studying to become a field naturalist. Recently I enjoyed his company on a camping trip to wild areas of Baja California, and I marveled at his knowledge of insects and spiders.

Moths make up a huge percentage

of the creatures out at night, Noel explained one evening as we sat around a glowing ironwood campfire. Because of their nocturnal habit, few people are aware of the great many different kinds of moths to be found in almost any locality where the native vegetation is undisturbed. At last count there were 692 known species of butterflies and 9184 of moths in the United States and Canada—a ratio of 13 moth species to one butterfly. This surprising proportion probably holds true even on our deserts, Noel believes.

The great variety of form and color displayed by desert moths, and their unique habits, make them most fascinating creatures to study. According to Noel, the best time to do this is on a night when there is no wind, no moon and the temperature is not too low. If there is considerable moisture in the air, it is even better.

The most common method employed by scientists to collect moths is by using lights. The best ordinary light bulb is a 100 or 150 watt clear blue daylight bulb, but far more effective is the 15 watt black light (ultra violet), G.E. F15T 8/BL. In a good locality and on ideal nights, 3000 or more moths, along with hundreds of other night-flying insects—beetles, ant lions, wasps, true bugs and flies, may be attracted by a single black light. Noel hangs his light on a white wall or to a surface on which a sheet is tacked. These white areas reflect the light outward.

"On an ideal night when moths and beetles come flocking to the light, the sound they make as they hit the wall and surrounding objects resembles that of a steady light rainfall. One never knows what beautiful creature is going to fly in out of the darkness and alight on the wall," Noel said.

Moths fly from dusk to dawn. Most species will be found during the first three or four hours of darkness, and many fly only during certain hours of the night. A beautiful species of tiger moth found in certain parts of Southern California only flies between 2 and 4:30 a.m., and then only during about two weeks in late April! One would never know this beautiful moth existed unless he happened to have his lights on at that particular time, Noel said.

In other species, the male may fly early in the night, and the female much later, or vice versa. In some species, the male flies during the day and never comes to the light at all. And then, there are others in which both sexes fly only during the day, like butterflies. By far the largest number of species fly at night.

Desert Quiz

The desert is not all sand and sagebrush. It has delightfully varied geography, interesting history, much wildlife, gems and minerals galore, colorful personalities, and is rich in tradition and good literature. This monthly Quiz will reveal the wide range of subjects of interest to those who read and travel. Twelve to 14 is a fair score, 15 to 17 is good, 18 or better is excellent. The answers are on page 41.

- 1—Stove Pipe Wells is a famous hostelry in: Southern Nevada.....
Death Valley..... The Painted Desert..... Escalante Desert.....
- 2—Correct spelling of the largest city in New Mexico is: Albuquerque.....
Albuquerque..... Albuquerque..... Albquerqua.....
- 3—The color of the Evening Primrose blossom so common on dune and mesa this year is: White..... Indigo..... Pink..... Blue.....
- 4—Kolb Brothers gained fame for their: Discovery of Rainbow Natural Bridge.....
First photographic expedition through the Grand Canyon of the Colorado.....
Exploration of Death Valley..... Discovery of Carlsbad Cavern.....
- 5—Jerky, an important food item for the desert pioneer, is made by drying brine-soaked meat: Over an open fire..... In the sun.....
In an oven..... In a smoke-house.....
- 6—The main business of the Phelps Dodge company is: Stock raising.....
Lumbering..... Mining..... Transportation.....
- 7—To see the annual dance of the "Smoki" Indians you would go to: Gallup, New Mexico.....
Prescott, Arizona..... The Hopi mesas..... Havasupai Canyon.....
- 8—The major farm crop raised by prehistoric Indians in the Southwest was: Corn.....
Cotton..... Tobacco..... Beans.....
- 9—Among the Navajo a *Chinde* is a: Medicine Man..... A tool for making sand paintings.....
A weapon for hunting..... A devil or evil spirit.....
- 10—The predominating minerals in granite are: Calcite and lepidolite.....
Manganese and apatite..... Malachite and azurite..... Quartz and feldspar.....
- 11—San Xavier del Bac mission is located near: Phoenix..... Santa Fe.....
Tucson..... El Paso.....
- 12—The U.S. Army officer in charge of the first camel caravan across western United States was: Lieut. Beale..... Lieut. Emory.....
Capt. Cooke..... Lieut. Ives.....
- 13—To reach Roosevelt Dam you would take: Coronado Trail highway.....
Sunkist Trail..... Apache Trail..... Highway 80.....
- 14—Frijoles Canyon cliff dwellings are located in: Bandelier National Monument.....
White Sands National Monument..... Mesa Verde National Park.....
Navajo National Monument.....
- 15—The Epitaph is the name of a newspaper published at: Rhyolite.....
Tombstone..... Goldfield..... Searchlight.....
- 16—A former governor of New Mexico was author of the book: Ben Hur.....
Quo Vadis..... Last Days of Pompeii..... Looking Backward.....
- 17—The historic Piper Opera House was located at: Tombstone.....
Virginia City..... Calico..... Santa Fe.....
- 18—Weaver's Needle is a well known landmark associated with: Pegleg Smith's lost gold.....
Lost Arch mine..... Lost Dutchman's gold..... Breyfogle's lost ledge.....
- 19—The Salt River Valley in Arizona is watered from the reservoir behind: Coolidge dam.....
Roosevelt dam..... Hoover dam..... Parker dam.....
- 20—The river flowing through Marble Canyon in Arizona is: The Gila.....
The Colorado..... The Verde..... The Bill Williams.....

LIFE ON THE DESERT

Night in Gateway Canyon...

The little-used canyon road had been damaged in several places by heavy rains, but the Hammens pushed on until they were too exhausted and unsure of the road ahead to continue. And then a flash flood came roaring down Gateway Canyon . . .

By BARBARA HAMMEN

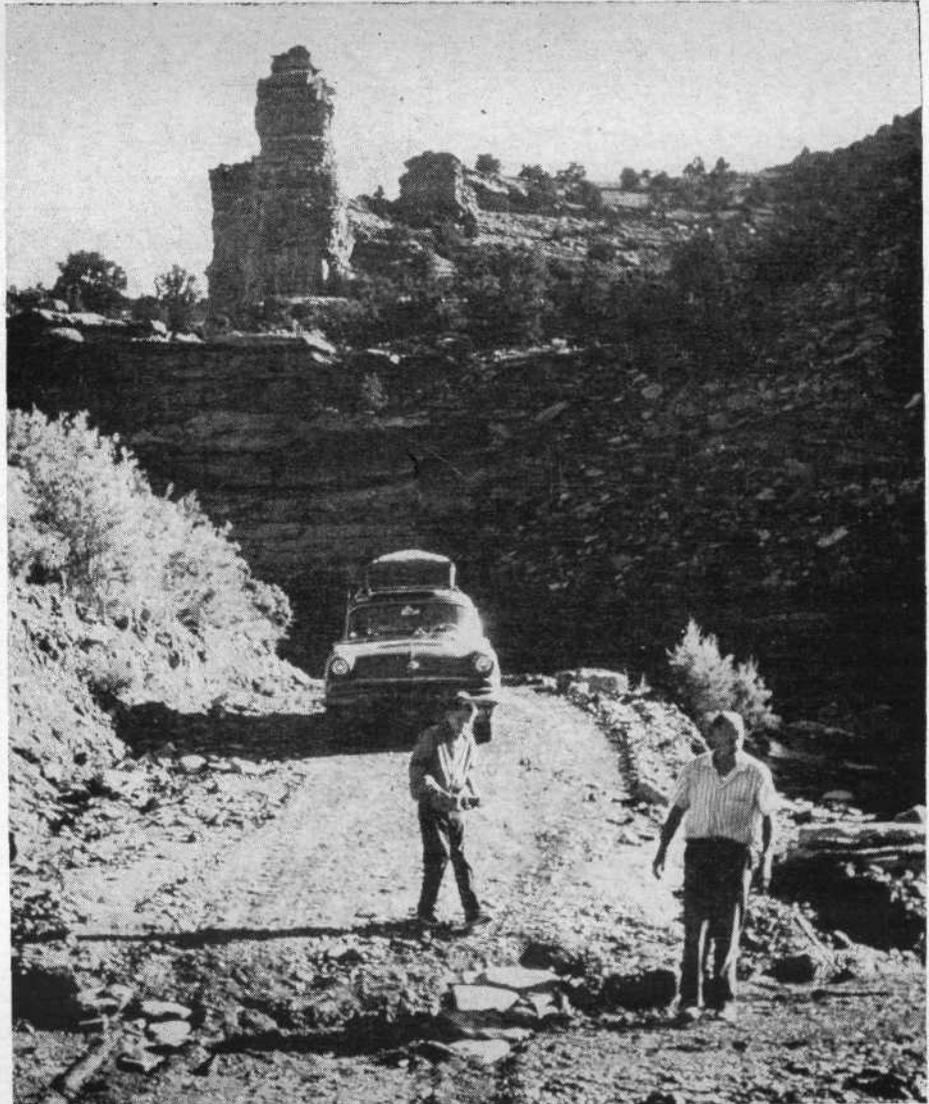
EACH SUMMER we travel along the backbone of the Rockies, from the lush forests and alpine peaks of western Montana to the brilliant desert and mighty plateaus of southeastern Utah. Camping with children provides a variety of experiences, but none has ever equaled the night in Gateway Canyon when the disaster which might have been, became the adventure we shall never forget.

We were warned in Vernal, Utah, that this 72-mile short cut from Myton on U.S. 40 to Wellington on U.S. 50 was a seldom-traveled dirt road. Furthermore, we knew the possible meaning of the ominous black clouds which lay over the rough desert ahead of us. But ignoring all warnings, we turned south on State Route 53.

For 20 miles we drove through open range scantily covered with low sage, without seeing even a jackrabbit, but congratulating ourselves on the fact that the road was no worse than many we had traveled over.

Descending into a broad canyon it became evident that a heavy rain had just preceded us, but again we complimented ourselves on choosing a road that was shale-covered and hence not slippery. Continuing down the gorge our optimism received a jolt when we came to a ditch washed across the road—too deep for our station wagon to cross. But we were prepared—we had a shovel and a folding spade.

While my husband and 13-year-old son Richard repaired the road, I walked ahead with John, our 10-year-old. What we found was not reassur-



A washout on the Gateway Canyon road is filled-in with stones.

ing. A flash flood had recently passed and a large section of the road bank had broken off into the normally-dry stream bed below, in which some water still flowed. At a glance it seemed impossible to squeeze our car between the rocky cliff face and the gaping washout. We should have left it as an impossibility and turned back. But we didn't. Instead, my husband carefully measured the width of the car base and the remaining roadway. There were inches to spare!

We inched forward, but next to the cliff was a muddy spot we neglected to test, and in steering a course as close to this wall as possible, the car became mired in silt up to the hub caps.

It was five o'clock. The sky had a deceptive brightness even though the sun was low. We had not passed a single ranch and we did not know if there were any ahead. We were in

no personal danger, but I dreaded to think what would happen to our new station wagon if another flood came.

For the next three hours we worked feverishly, shoveling heavy back-breaking mud, carrying rocks and gathering huge quantities of rabbit brush to pack into the mud. Time and again Oscar jacked up the car, each time moving it slightly until the jack broke. Fortunately, by then the rear wheels were sufficiently clear and he drove the car out of the mire and safely past the narrow ledge. Our troubles seemed over.

We were exhausted, but despite the fact we had not eaten since our light roadside snack at noon, Oscar and I were too tense to feel hunger, and the boys were uncomplaining. We wanted to get out of the awful canyon as soon as possible.

The sun had disappeared over the broken canyon wall long before, and

the unknown lay beyond in the deep dusk. For several miles we drove slowly downward, cautiously stopping to examine each puddle in the road before proceeding. After rounding a curve we reached a high wide place in the road, and my husband stopped the car.

Aided by our kerosene and electric lanterns, we investigated the surroundings as best we could in the thick darkness that comes between late dusk and a night yet unlighted by moon and stars. We seemed to be above the junction of a side canyon dimly outlined on our left. Beyond our parking place the road sloped sharply downward and disappeared around a curve, presumably into the main canyon.

"Let's eat," suggested my husband.

"And let's spend the night here," I added, opening the end-gate and setting up the Coleman stove.

The boys, who had been dozing, sprang into helpful action and within minutes a pot of coffee was cheerily perking and the frozen cube steaks I had purchased in Vernal were sizzling in the frying pan, while the cot was set up and sleeping bags unrolled.

We were enjoying the first mouthfuls of steak sandwiches when John called our attention to a peculiar rumbling noise from upcanyon. This soon became an increasing roar. There was no doubt as to its meaning! The air became heavy with the odor of fluid earth. A flash flood, laden with silt, was coursing down the murky side canyon to the main gorge below. Momentarily, the pungent scent sickened me and my coffee cup fell from my hand.

Had we followed our first resolve to get out of that canyon as quickly as possible, we might have been caught in that suffocating water downcanyon!

To underscore what might have been, we learned next morning at the Nutter Ranch that indeed such had been the fate of a man and his daughter some 15 years earlier in that very canyon. The father was buried in the mud, but the girl crawled out of the tumultuous stream. She was found the next morning, half-crazed, walking along the upper wall of the canyon.

But we were safe at our roadside campsite, and I gradually relaxed while the leaden water roared on and my nostrils became accustomed to the

smell of "wet dust," as John called it. Overhead the stars took their places in the heaven, each at its appointed time.

After 20 minutes, all was quiet. And we were silent also, each with his own thoughts.

The remainder of the night was like any other desert evening—crisply cool and with an eerie beauty and silence which forces wakefulness from sheer wonder. In any event, none of us slept well that night.

Countless meteorites streaked across the sky lighted by myriads of stars seen only when the moon is a crescent. How small and alone and insignificant we seemed! Yet we were a part of the pattern of the Universe, and an Unseen Hand, which guides it all, had led us to safety.

Then came what is to me the most magnificent time of all, when the stars, one by one, mysteriously disappear into the gray dawn—the birth of a new day.

Quietly I gathered dead pinyon branches, built a warming fire and prepared a hearty breakfast. While we ate, a family of Indians in a Dodge truck drove up the canyon. We waved to them to warn them of the washout above, but they did not stop. We knew no major washouts were ahead of us, since the truck had come up the canyon.

We were on our way long before the sun appeared over the canyon rim. Its cheering warmth made us light-hearted — even gay — as we wielded shovels and laid rocks in dozens of places on the road so our car could proceed.

In three hours we covered the five miles to the Nutter Ranch at the mouth of Gateway Canyon which meets Nine Mile Canyon at a right angle. After a very pleasant chat with Mr. Price and his wife, the former Virginia Nutter, we drove on into Nine Mile Canyon.

The walls of this gorge contain thousands of petroglyphs. We were excitedly photographing some of them when Richard said calmly, "There's a rattler." The snake design is common among petroglyphs, and Oscar and I kept on with our picture-taking. But when we glanced up, we saw Richard staring at the ground. Three feet from him was a live rattler, the first we had ever seen.

"I didn't notice him until I heard his rattle. He warned me," said Richard. My husband took several pictures of the little diamondback before it slithered away into the rocks.

He had not harmed us. He, too, belonged in the pattern we knew.

Cash for Desert Photos . . .

We need desert photos—unusual pictures of wildlife, revealing scenes of men, women and children working or playing in the outdoors, landscapes, botany, natural phenomena, ghost towns, etc. Each month the photographs received are carefully judged, the best two are reproduced in the magazine (see Pictures of the Month), the winning photographers receive cash prizes, and those pictures not selected are returned (if return postage is included). Why not make Desert's contest a part of your photography hobby? Mail us your entries today!

Entries for the May contest must be sent to the Desert Magazine office, Palm Desert, California, and postmarked not later than May 18. Winning prints will appear in the July 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

Additional Rains Improve Water Outlook For Most Desert Areas

February precipitation over Southwest watersheds varied considerably, but in general the desert water outlook was improved. This rainfall resulted in the following runoff forecasts by the U.S. Weather Bureau for the current water-year which ends in September.

GREAT BASIN

February was unusually warm and wet in the Great Salt Lake Basin—the second warmest and second wettest February in the past 30 years. The favorable precipitation resulted in an upward revision of about 10 percent in the streamflow forecasts for the basin's major streams. River runoff forecasts: Bear, 95 percent of the 1938-52 average; Logan and Ogden, 110; Upper Weber, 115; Six Creeks, 105; Provo, 115; American Fork, 110; Spanish Fork, near average.

Over 200 percent of normal precipitation occurred during February over the central valley areas of the Sevier Basin. The Beaver Basin also received monthly amounts well above normal.

River runoff forecasts: Sevier above Kingston, Utah, 125 percent of the 15-year average; East Fork Sevier, 135; Sevier below Kingston at Piute Dam, 138, near Gunnison, Utah, 126; Beaver, 140.

Heavy rainfall also was recorded over these basins, and their runoff forecast percentages are: Carson, 80; Inflow to Lake Tahoe, 101; Walker and Owens, 80 to 90; Mojave, 85.

COLORADO BASIN

February rainfall averaged below normal over the headwater areas of the Colorado River, but was more favorable over the Gunnison and Dolores basins. River runoff forecasts: Colorado and tributaries near Granby, Colorado, 85 to 90 percent of the 1938-52 average; Taylor and Dolores, 110; Uncompahgre, 130; Colorado near Cisco, Utah, 100.

Precipitation was above normal over the Yampa and White river drainages in Colorado, but, in general, was below normal over the Wyoming water-

shed of the Green River. The San Juan Basin's February precipitation was above normal. River runoff forecasts: Green in Wyoming, near or less than the 1938-52 average; Yampa, 107 to 116 percent; White, 120; Duchesne, 110; Price, 90; Green at Green River, Utah, 91; Upper San Juan tributaries, slightly more than average; San Juan main stream, slightly less than average.

February rainfall over the Lower Colorado Basin generally was much above normal. River runoff forecasts: Little Colorado at Woodruff, Arizona, 50 percent of the 15-year average; Chevelon Fork and Clear Creek, 70 to 90; Upper Gila, 75; Gila near Solomon, Arizona, 54; Salt River, 41; Verde, 105.

RIO GRANDE BASIN

Precipitation during February varied considerably over the Rio Grande Basin, ranging from about 50 percent of normal at a few locations to over 200 percent. In general, amounts were below normal except over the upper watersheds of the Rio Chama Basin. River runoff forecasts: Eastern tributaries of the Rio Grande, 110 percent of the 1938-52 average; Main stem of the Rio Grande, near average; Inflow to El Vado Reservoir, 85; Rio Grande at Otowi Bridge, New Mexico, 88; Pecos, 100.



"Night in Gateway Canyon" is one of several stories Barbara Hammen has written of her family's summer travel experiences over the objections of her 10-year-old son, John, who fears that "too many people will go to the places" she writes about.

The Hammens are residents of Missoula, Montana, where her husband, Oscar, is chairman of Montana State University's Department of History. "Luckily, my husband's profession permits my winter camping and travel dreams to materialize during long summer vacations," she stated.

* * *

William Caruthers, a frequent contributor to *Desert Magazine* in the 1940s, passed away March 6 after an illness of more than a year. His home was at Ontario, California.

A life-long newspaperman, Caruthers spent much time in Death Valley during the days when Shorty Harris

and Dad Fairbanks were prospecting in that area. Eight years ago Caruthers published the story of his Death Valley experiences in *Loafing Along Death Valley Trails*, and several editions of the book have been printed.

Through the interest of Senator Charles Brown of Shoshone, friend of Caruthers for many years, the California Senate passed a resolution "in tribute to the memory of Bill Caruthers and extends its sympathy to his widow in her bereavement."

WITMER PROMOTED TO SMALL TRACTS POSITION

Paul B. Witmer, manager of the Bureau of Land Management's Los Angeles office since 1934, has been promoted to a position as Lands Staff Assistant at the Bureau's Washington, D.C., headquarters.

In his new capacity, Witmer will give his full time to the small tract program under which the Bureau leases or sells small parcels of public lands for recreation, home and business sites.

Replacing Witmer as head of the Los Angeles office was Nolan F. Keil, former manager of the Idaho Land Office at Boise. He has been with the Bureau since 1946.

ANTI LAND GRAB BILL SIGNED INTO LAW

A bill providing that public land withdrawals for military purposes of over 5000 acres must first be approved by Congress, has been signed into law by the President. The measure was introduced by Congressman Clair Engle, and is the culmination of a long series of hearings involving military land grabs held by his committee on Interior and Insular Affairs.

Testimony before the committee indicated approximately 30,000,000 acres are under control of the military services, with additional applications pending on 2,000,000 acres in California alone.

"There is no intention to curtail legitimate military activities where land is involved, but on the other hand there is no excuse for the military to grab onto land that cannot and is not being presently utilized. We have found many such instances," Engle said.

"Under the terms of the new act, the military services will have to justify any application over 5000 acres that might be made. It returns to Congress jurisdiction over the public lands that it should have," Engle added.—*Inyo Register*

Here and There on the Desert . . .

ARIZONA

Funds for Indian Roads . . .

PHOENIX — Nearly \$1,000,000 has been released by the U.S. Bureau of the Budget for work on Indian reservation roads in Arizona. The money is expected to permit complete paving of roads from Fort Apache to U.S. 60, from Ganado to Chinle, and from Kayenta to Monument Valley on the Arizona-Utah border. Also included is an allotment of \$250,000 for a bridge at Laguna Creek north of Kayenta.—*Yuma Sun*

Tombstone Restoration Planned . . .

TOMBSTONE — The Schieffelin Hall opera house, largest standing adobe structure on the continent, will be restored to its original appearance and construction, the structure's new owners, Mike Narlian and Mr. and Mrs. Pete Pistonetti announced. They hope to make it available to theater groups, and also operate it as a theatrical museum. The newly completed building at the O.K. Corral may be used as the local chamber of commerce office.—*Tombstone Epitaph*

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THE *Desert* MAGAZINE
PALM DESERT, CALIFORNIA

Observatory Site Chosen . . .

TUCSON — After three years of searching for a suitable site, the National Science Foundation announced that its proposed \$3,100,000 optical astronomical observatory will be located on Kitt Peak in the Papago Indian Reservation 40 miles southwest of Tucson. Already in the process of construction is a 36-inch telescope for the observatory and future plans call for the placing here of the largest telescope in the world—possibly twice as large as the 200-inch mirror at Mount Palomar in California. Elevation of the peak is 6875 feet.—*Phoenix Gazette*

Prison May Become Monument . . .

YUMA—The old Territorial Prison at Yuma tentatively has been accepted by the Arizona Parks Board as the state's second historical monument. The old prison will be the gift of the City of Yuma, and will become state property as soon as the Parks Board has assurance of a clear title and other requested provisions. The Prison has been maintained for years as a museum and has attracted hundreds of thousands of visitors.—*Arizona News*

New Law Seeks Bear Protection . . .

PHOENIX — State legislators are proposing new game codes which would give greater protection to bears. Widespread belief was noted among sportsmen that many bears are being falsely accused of killing stock, just so a rancher can give the word which will permit a hunter—often an out-of-state client of a professional guide — to go after a bruin. Aside from shortening the time a rancher is allowed to report killing a bear he claims is a stock killer, the new code is the same as the old. A legitimate livestock operator will have to file a report within 10 days—instead of 30—after the animal is slain.—Dick Lee in the *Phoenix Gazette*

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Law Stops Gem Rock Shipment . . .

QUARTZSITE—The Yuma County Sheriff reported that a California company had accumulated a huge pile of petrified wood near Quartzsite and was ready to truck it across the border when he stepped in and halted the operation. Arizona law requires a permit before rock or other building materials can be removed from the state, and the exporter must pay a percentage of the value of the material as a fee. The Californians had not yet satisfied these requirements. The sheriff is attempting to fix a value on the material.—*Yuma Sun*

Glen Canyon Dam Progress . . .

PAGE—More than a million cubic yards of rock and earth have been excavated at Glen Canyon dam, with four million cubic yards still to be dug before the project is completed. The prime contractor passed the million mark as it moved keyway foundations which will anchor the dam to the rock canyon wall, and spillways. According to schedule, the Colorado River will be diverted through two massive tunnels next January, and excavation will then start on the river bed. First concrete should be poured by November, 1959.—*Southern Utah News*

CALIFORNIA

Huge Development Announced . . .

BORON—Land developer M. Penn Phillips (Hesperia, Salton City) has purchased 110 square miles of Mojave Desert land for a \$150,000,000 planned community to be known as Boron Valley. The tract lies in the center of the triangle formed by the communities of Mojave, Boron and Randsburg. Phillips said his new city will serve Edwards Air Force Base, the Naval Ordinance Test Station at Inyokern and greatly expanding desert industry of east Kern County.—*Boron Enterprise*

Sea's Popularity Increasing . . .

SALTON SEA — Attendance of 136,774 at Salton Sea State Park last year was announced by the Division of Beaches and Parks. This is an increase of 45,299 over 1956. The park, which was opened August, 1954, had an attendance of 3053 that year, 75,136 in 1955 and 91,475 in 1956. Meanwhile, the Imperial Irrigation District reported that the sea's surface elevation rose .3 of a foot in February to a level of 234 feet below sea level.

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Evan T. Hewes Memorial . . .

IMPERIAL — A bronze-coated fresno scraper, the horse-drawn implement so extensively used for land leveling and ditch making in the early days of Imperial Valley, will serve as a memorial to Evan T. Hewes, president of the board of directors and executive superintendent of the Imperial Irrigation District for almost 25 years before his death last year. The memorial will be erected at the Imperial Valley Pioneers Society's new headquarters in Imperial. — *Imperial Valley Weekly*

State Park Information Sought . . .

LONE PINE — Directors of the Southern Inyo Planning Association are seeking clarification of the proposed Alabama Hills State Park situation, and also what the state intends to do with the property if and when it is acquired. Because of protests by several local residents, the project was placed in the inactive file last year. Officials say it is now apparent that the majority of Lone Pine residents want the park, and therefore it will be placed on the current acquisition file and pushed to completion as soon as possible. A chief concern of local townspeople is whether movie companies will be allowed to continue making movies at Alabama Hills after the state takes over. — *Inyo Independent*

8012 Use Whitney Trail . . .

MOUNT WHITNEY—Forest Service reported that 8012 persons registered to use the Mount Whitney trail last year, and 4164 of this number reached the top. The six campgrounds in the Whitney area saw 68,964 man-days of use during 1957. — *Inyo Independent*

NEVADA

Navy May Give Up Land . . .

HAWTHORNE—The Navy reportedly is considering returning to the public domain about 60 square miles of land withdrawn in Mineral County for use of the huge Hawthorne ammunition depot. A large part of the land lies west and north of Mt. Grant in the Wassuk Range, and a smaller portion is located south of Nevada Peak. — *Humboldt Star*

Prize Fight Monument Erected . . .

GOLDFIELD—A stone monument in Goldfield commemorates the Joe Gans-Battling Nelson boxing match held here on September 3, 1906. Promoted by Tex Rickard, the "fight to a finish" was won by Gans in the 42nd round on a foul.

Predator Control Report In . . .

CARSON CITY — Thirty-three government hunters and trappers destroyed 2559 coyotes, 1828 bobcats and 93 mountain lions in Nevada during the last half of 1957. These figures represent results registered by actual trapping and hunting, and do not show how many predators were removed by poison bait. Fish and Wildlife Service officials estimate that 1080 and other lethal materials were responsible for several times the accredited catch, especially in the case of coyotes. — *Humboldt Star*

Underground A-Tests Seen . . .

LAS VEGAS — Atomic Energy Commission Scientists estimate that half of this nation's future atomic tests will be underground detonations with no fallout problem. The prediction is based on results of the underground blast set off at the Nevada Proving Grounds last year. Scheduled to start this year in Nevada are tests for de-

velopment of a nuclear-powered rocket with an almost inexhaustible fuel supply, the AEC reported. — *Nevada State Journal*

Seek Ghost Town Purchase . . .

BELMONT — A New York client has made an offer through his Reno agent to purchase the ghost town of Belmont from Nye County which owns most of the townsite as well as the historic court house. The prospective purchaser, apparently envisioning the creation of another Virginia City tourist town, volunteered to restore the buildings along Main St. to good condition, and also to rehabilitate the court house which has been deteriorating at a rapid rate. — *Tonopah Times-Bonanza*

NEW MEXICO

Reservation Hunting Curbs Sought

SANTA FE—Department of Interior is seeking legislation that would make it a Federal criminal offense to trespass for hunting, fishing or trap-



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MAPS

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ping purposes on Indian reservations and other Indian lands held in trust by the United States. While there is authority in an 1834 statute which provides some measure of protection against such trespass, the Interior Department feels this authority is limited in scope and not adequate for meeting present-day needs.

Highway Access Fight Looms . . .

ALBUQUERQUE—Attorney Irwin S. Moise told the 55th annual convention of New Mexico sheep growers to "be prepared to defend yourself in court" as the state acquires access rights for the new superhighways being planned. Moise said State Highway Department officials have "no appreciation of the value of access." Construction of a limited-access superhighway through or alongside a ranch can decrease its value, and the ranch owner should receive payment in the amount of this decrease, Moise added. The sheepmen have set up a committee to study the highway problem.—*New Mexican*

Indian Center Nears Completion . . .

LAGUNA — Laguna Pueblo's new \$142,000 community center was scheduled for completion in April. The 12,600-square-foot hall contains recreation facilities, space for holding meetings, offices for the tribal governor and other officials, a council chamber and kitchen. Funds for the building mainly came from royalties from the Jackpile Uranium Mine operated by the Anaconda Company. — *Grants Beacon*

Crop Conditions Good . . .

SANTA FE—Subsoil moisture supplies are adequate over the entire state with the exception of the southwest quarter, and surface moisture is also "generally adequate," the Department of Agriculture reported. Cattle are beginning to move off wheat pasture to market, and livestock continue in good condition.—*New Mexican*

UTAH

Inter-State Highway Approved . . .

COVE FORT—Formal approval of plans for an inter-state highway be-

tween Denver, Colorado, and Cove Fort on U.S. 91 in south-central Utah, has been given by the Department of Commerce. Three control areas — Denver, the state line west of Grand Junction, and Cove Fort—were established for the highway. The states of Utah and Colorado may now prepare detailed engineering studies as soon as possible to select the specific routes to join these control areas.

Natural Bridges Improvements . . .

NATURAL BRIDGES NATIONAL MONUMENT — The National Park Service released details of a long-range program designed to improve facilities at Natural Bridges National Monument, and to make the area more accessible to the public. An all-weather road system is planned for the Monument, with an entrance road to headquarters and spurs from there to each of the natural bridges. Trails will run to the bridges from each of the terminal parking areas. Visitor center and a picnic area also are planned.—*San Juan Record*

Early Start on Dam Project . . .

VERNAL—The nation's economic problems may cause the early start—possibly before July 1—of construction of Flaming Gorge Dam and the Vernal storage unit. Both projects, earlier victims of the government's stepped-up missile program, now are likely to be on the receiving end of Federal funds as the U.S. attempts to stem the rising tide of unemployment by creating public works jobs. Meanwhile, the Bureau of Reclamation received bids on constructing access and service roads to Flaming Gorge dam-site, and surfacing roads already built.—*Vernal Express*

Help for Crippled Indians . . .

SALT LAKE CITY—Members of a Utah medical team flew to Arizona recently to conduct diagnostic clinics for crippled Indian children of the Pima, Papago, Apache and Hopi tribes. This was the fourth flying medical mission conducted by the team since the U.S. Public Health Service entered an agreement a year ago with the Utah Crippled Children's Service to provide aid for children suffering from various deformities and crippling diseases. Children found to have remedial conditions will be flown for treatment to the Primary Children's Hospital in Salt Lake City.—*Salt Lake Tribune*



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MINES and MINING

Colorado Springs, Colorado . . .

Governors of the Far Western states have reasserted their request to the Federal government for policies and programs designed to aid the domestic mining industry. Their action, which came at a recent Governors' Conference, requests that a broad National Minerals Policy be adopted by the U.S. "without delay." Specific action was suggested to aid lead, zinc, tungsten, mercury, copper and other sagging mining industries. — *Nevada State Journal*



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Window Rock, Arizona . . .

The Navajo Tribal Council rejected bids by oil companies seeking rights to drill on six tracts of valuable tribal ground between Aneth Pool and Rath-erford Field in San Juan County, Utah. Reason for the action was that the bids were not as high as others received on adjacent tracts.—*Salt Lake Tribune*

• • •

Lovelock, Nevada . . .

Construction has started on a diatomaceous earth plant for the Eagle-Picher Company at Lovelock. When completed, the plant will be valued at over \$2,000,000, officials estimate. At capacity, the plant is expected to produce 36,000 tons of natural and calcined filter aids annually. — *Nevada State Journal*

Las Vegas, Nevada . . .

The Atomic Energy Commission advanced the possibility that atomic bombs may find future value in mining and oil recovery. An A-bomb explosion, the AEC suggested, could be used to break up ore bodies for removal or leaching; and in oil strata to free crude oil trapped in relatively non-porous rock formations. It also is considered possible that heat resulting from an underground detonation in oil strata might increase the production of oil in certain situations by making it flow more freely through the rock formation. The AEC suggestions were based on studies of last year's underground blast in Southern Nevada. — *Grants Beacon*

• • •

Washington, D. C. . . .

Senators Alan Bible of Nevada, James Murray of Montana and Frank Church of Idaho, are seeking legislation which would suspend for one year the requirement that owners of mining claims must annually perform \$100 worth of labor on their properties. The law change is designed to help the "already tottering" mining industry, and assist prospectors and other small mining operators in protecting their investments, the senators said.—*Eu-reka Sentinel*

• • •

Tonopah, Nevada . . .

Union Carbide Corporation has taken a lease with option to buy on 22 claims, and located an adjoining block of 64 claims that cover a vast vanadium field reportedly uncovered by the concern. The 86 claims are 120 miles north of Tonopah, and there is no organized mining district in this vicinity.—*Tonopah Times-Bonanza*

• • •

Beatty, Nevada . . .

Wah Chang Mining Corporation is conducting an examination of fluorspar deposits near Beatty, and if findings are favorable, the mining concern may move its big milling plant at Tempiute, used until recently for treating tungsten, to the Beatty area.—*Tonopah Times-Bonanza*

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Santa Fe . . .

U. S. uranium ore reserves have risen to 78,000,000 tons, and of that amount 53,300,000 tons or slightly less than two-thirds are in New Mexico, the Atomic Energy Commission reported. Percentage of the U308 in the New Mexico ore was estimated at .26. Virtually all the state's uranium is located in the Grants vicinity. The AEC said Utah had an ore reserve of 5,700,000 tons, and Arizona 1,400,000 tons.—*Grants Beacon*

Tonopah, Nevada . . .

All cyaniding equipment, tanks and buildings of the Nevada State Mining Co., originally the Seven Troughs Co., have been sold. Plans are to dismantle and ship the equipment to the old Candelaria Mine near Tonopah, according to Southwest Machinery and Equipment Co. of Sunnyslope, Arizona, purchaser of the cyaniding plant. When constructed in the late 1920s, the mill was considered the finest plant of its type in the nation. — *Lovelock Review-Miner*

Clarkdale, Arizona . . .

Construction has started on a 1,500,000-barrel-per-year capacity cement plant at Clarkdale. American Cement Corporation said it expects its plant to be in operation before the close of 1959 with a work-force of 200 men. Riverside-Arizona Cement Company, a newly formed division of American Cement, will build and operate the facility.—*Verde Independent*

Carlsbad, New Mexico . . .

G. F. Coope, president of the Potash Company of America, warned that increasing Canadian potash imports into this country may curtail New Mexico production. The Saskatchewan deposit is of better quality than known remaining deposits at Carlsbad, Coope said. Several major New Mexico producers have reduced the number of days-per-week worked by their employees because of excessive stocks on hand.—*New Mexican*

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Mojave, California . . .

Kern County Land Co. has located "substantial amounts" of colemanite, a boron mineral, on the Mojave Desert. The deposits, according to a company spokesman, could prove of considerable value in the future as raw material in connection with the high-energy fuel program.—*Mining Record*

Fontana, California . . .

Kaiser's giant steel plant at Fontana, operating at only 78 percent of capacity, laid off 1500 production workers in the early part of this year. The lay-off dropped Kaiser mill employment to 6250. Reduction in the steel making operations also necessitated curtailment at the company's iron ore mine at Eagle Mountain, and its coal mines at Sunnyside, Utah. — *Pioche Record*

San Juan County, Utah . . .

Phillips Petroleum Co. and Aztec Oil and Gas Co. have completed a 1620-barrel-a-day oil wildcat—Navajo A2—between Ratherford Field on the west and White Mesa Field on the east in San Juan County.

Lucerne Valley, California . . .

Permanente Cement Co. has been awarded the contract to provide 133,000 barrels of cement for lining the

2700-foot diversion tunnel at Glen Canyon Dam in Arizona. Mountain States Construction Co. of Utah is drilling the tunnel. — *Lucerne Valley Leader*



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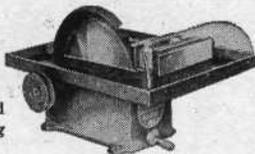
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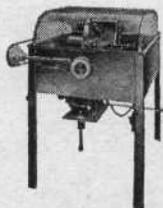
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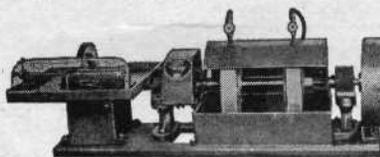
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AMATEUR GEM CUTTER

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

Mineral collecting is said to be the oldest hobby known to man, the same can be applied to the working of the semi-precious gem minerals. For thousands of years before the dawn of civilization, primitive man became skilled through necessity in fashioning hard minerals into tools and weapons. Obsidian, agate, opal, jasper, quartz, and other similar materials found as artifacts, carry the story of the struggle for existence waged by Paleolithic Man and others of the dim past.

While this background of skill passed through many generations, it is only natural that in a moment of relaxation from the struggle with tooth and claw, early man turned to the fashioning of an ornament from an attractive specimen of a gem mineral. When this first took place is not recorded in history. Remains found in the caves of France give proof that quartz crystal was worked at least 12,000 years ago; later the tombs of Egypt indicate that turquoise was utilized as an ornament at least 6000 years ago. But in all likelihood the art of gem stone cutting goes back even earlier.

For centuries crude equipment was used in the art, with the technique and secrets of the craft handed down from father to son through the generations. The works of the medieval and other early workers of gem cutting are remarkable for their skill of execution, considering the lack of modern abrasives and machinery.

The introduction of modern abrasives and grinding wheels, some 40 years ago, marked the beginning of the modernization of the lapidary industry. The modern grinding wheel, the product of the electric furnace, together with modern machinery, probably has done more to render gem stone cutting more simple than any other factor. Picture the medieval artisan laboriously reducing a hard sapphire, holding the gem in the left hand, turning a crank with the right hand to operate a lead lap wheel charged with emery.

Simplified technique available to all, modern abrasives, and machinery have aided in inducing thousands of individuals to adopt gem stone cutting as a pleasant, fascinating and valuable hobby. The intriguing mysteries, romance, and fascination of gem stones seem to lure even the most casual observer. Can it be possible the urge to fashion and work a rough fragment of a gem mineral into a thing of beauty and utility has been passed on to civilized man as a heritage from his ancestors?

For many centuries amber has been gathered on the southern Baltic Sea coast. In the early 17th century, the local king leased out the collecting rights to certain groups of persons. The leased rights came very high, but at that time amber brought a fabulous price in China where much of it was carried by overland trading caravans.

Chief use the Chinese appear to have made of amber was to burn it in a sort of perfume pot at great feasts and celebrations. The more and larger pieces the host cast into the burning pot, the greater was the indication of his magnificence. In short, if it was a "number one" feast celebration, the host would go the limit on costly amber.

The odor of the burning amber was very pleasing to the Chinese. For a long time the Hollanders had a monopoly on this trade in amber, to the exclusion of all others. At that time it was not known that

amber was a simple fossil resin, derived from conifer trees. It was thought to be manufactured in the ocean in some manner or another, from foam on the water. In this manner they also accounted for the insects often noted in fossil amber.

Some amateur lapidaries appear to have difficulty in polishing the gem mineral calcifornite, especially on the large flat surface. There are several methods by which a good polish can be given this attractive material.

All deep scratches should first be carefully removed with a fine grit or well worn sanding cloth. A rock hard felt buff is better than the soft felt wheels for polishing.

The Norton Alumina polishing powders are excellent for use on calcifornite. Apply the polishing agent, mixed with water, in the usual manner. Toward the final completion of the high polish permit the felt buff to run nearly dry. This will give a high glossy finish; a burnishing effect is accomplished by the dry buff. This same method of "burnishing" often is effective on other materials otherwise difficult to polish on a wet felt.

The rough gems mined in the noted gem districts of Ceylon generally are disposed of by auction. This has been the established custom for many years. Depending upon the production of the mines, auctions are held irregularly at the pit heads of the mines. Usually the buyers are present in person to examine the various lots offered and place their bids.

Professional buyers may represent customers who are not present in person, the buyers working on a fee or commission basis. This is the manner in which the gems find their way into the hands of the cutters and retail dealers. Details of buying may be obtained from the General Products Branch, Office of International Trade, U. S. Department of Commerce, Washington 25, D. C.

What appears to be the world's largest circular diamond saw is used in the granite cutting industry in Scotland. The familiar red granite of Scotland is seen all over the world.

This huge saw is 11½ feet in diameter, and almost one inch thick. The diamond charge costs several thousand dollars. These stones are set by hand work into rectangular shaped sockets on the periphery.

There are about 300 of these sockets, and into most of these are set diamonds averaging about one carat in weight. Some of the stones are set to project outward from the edge so the blade may cut its own clearance, the same technique that is used in setting diamonds into a diamond core drill.

Some of the rectangles are filled with clusters of stones weighing less than a fourth carat each. The steel saw is slightly dished and operated at an average peripheral speed of 10,000 feet per minute. Any diamonds lost from their settings are readily recovered.

This is the most economical method of sawing out huge block of granite, and similar hard ornamental stones. Moreover, the diamond saw leaves a much smoother surface than the older wire-rope and abrasive method. As in all lapidary work, the smoother surface left by the diamond saw means less labor cost in lapping prior to the polishing operations.

GEMS AND MINERALS

Make Quality--Not Quantity-- Goal of Collecting Trip...

If you do your own cutting and polishing, it is more profitable to select one piece of good material on a field trip than to fill a pack sack with rock that looks pretty on slight inspection. This is best done with a good magnifying glass, and the specimen should be studied under the glass when it is dry. Look for soft spots and small pores which will cause undercutting; and the extent of fractures and minute crystals which will interfere with polishing.

Of course, color also is important. By

NEW OFFICERS TO SERVE GEM CLUBS

The Rocky Mountain Federation of Mineralogical Societies named the following new officers: Domer L. Howard, Oklahoma Gem and Mineral Society, president; Ruth Broderson, Wichita Gem and Mineral Society, vice president; Norman E. Flaigg, Oklahoma Gem and Mineral Society, treasurer; and Ronald Barnes, South Dakota; James F. Hurlburt, Denver; and Katie Trapnell, Phoenix, executive committee. Next federation convention was scheduled for Wichita, Kansas.

J. H. Barnes of Sunland, California, recently was elected president of the Verdugo Hills Gem and Mineral Society. Also named to office were: Gene Judson, vice president; Marjorie Poppleton, secretary; Brown Garrett, treasurer; Barry Livingston, Irving Rice, Ray Mandeville, George Heald, Lena Hittson, William Bennett, Walter Biggs, Don Eliot and Will Wright, trustees; Daroll Albright, federation director; and Marie Garrett, bulletin editor.

The following new officers were elected by the Dona Ana County, New Mexico, Rockhound Club: Elton Love, president; Wilma Bason, vice president; Joe Nolles, treasurer; Vivian Wakefield, recording secretary; Bea Letcher, corresponding secretary; and Ruth Randell, editor.

New officers of the Canyon City Lapidary Society of Azusa, California, are: Angie Gyllenskog, president; Edward Marikle, vice president; Jeanette Gibson, recording secretary; Mildred Bennet, corresponding secretary; Fred Mansky, treasurer; and Paul Gardner, federation director.

New officers of the N.O.T.S. Rockhounds of China Lake, California, are: Al Cles, president; Dr. Ron Henry, vice president; Alice Busskohl, secretary; Ken Shumway, treasurer; and Dr. Wm. Norris and B. W. Furstenberg, directors.—NOTS Rockhounds News

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wetting the stone the colors approximating those of the polished stone will appear. In general, dark colors, except brilliant black, do not have the eye appeal of the lighter and brighter hues.

But, whether you look first for color or quality, you will want both in the material you will spend time and effort polishing.

The same care should be exercised in selecting mineral specimens. Although no two people have the same idea as to what constitutes beauty and desirability in a specimen, some rather standard requirements exist. The specimen must be free of broken or marred crystals. There should be a minimum of matrix or gangue material. In general, it is more desirable to have a specimen with one mineral predominating, such as quartz, calcite, sphalerite, galena or fluorite, but if there are small amounts of other minerals that do not detract from the main minerals, the specimen's quality is not lessened.—Harold C. Mahoney in the East Bay Mineral Society's *The East Bay Nodule*

Sterling silver is an alloy of 92.5 percent silver and 7.5 percent other metal or metals, usually copper for hardening and stiffening purposes. This proportion is a legal requirement. The word is derived from Easterling, the name of a 12th century group of German traders who paid for merchandise with silver coins, the contents of which they ethically and rigidly controlled at a time when debasement of coins was common.—*East Bay Nodule*

July 26-27 dates were announced for the third annual Nevada Gem and Mineral Show at Fallon. Show sponsor is the Lahontan Gem and Mineral Club. Camping facilities and field trips for visitors are being planned by the show hosts.

SCIENTISTS FIND DIAMONDS IN MEXICAN METEORITE

The large half-ton metallic meteorite, Carbo, which landed in Mexico in 1923, recently was cut open by scientists of the Harvard College Observatory and the Smithsonian Astrophysical Observatory. Some diamonds were found in the stone.

An attempt is being made in these studies to solve some of the mysteries of high speed missile and satellite flights. The scientists hope to learn more about the cosmic rays which Carbo must have absorbed during its 1,500,000 years of existence.

The meteorite originally was about a foot thick and three feet long. The slice taken from its interior contains 400 square inches—largest ever cut from a meteorite.—*Nuts and Nodules*

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BOLA TIPS—Nickel Plate		12 for 75c
LEATHERETTE CORDS—Brown, black, tan, gray, dark blue	6 for \$1.20	12 for \$2.00
RAYON CORDS—Black, tan, brown/gold combination		12 for 75c
KEY RINGS—gold or rhodium plate. 1" chain	6 for \$1.50	12 for \$2.65
CUFF LINKS—15 mm. disc for cementing. Rhodium plate	3 pr. for 85c	6 pr. for \$1.50
TIE BARS—New 1 5/8" bar alligator grip. Nickel plate	6 for 70c	12 for \$1.20

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"FIESTA" GEM SHOW**

The Orange Belt Mineralogical Society of San Bernardino, California, will be host to the 19th annual convention and show of the California Federation of Mineralogical Societies on June 20-22. "Gem and Mineral Fiesta" is theme of the show scheduled for the Orange Show Grounds. George Nash, Rt. 1, Box 310, Redlands, is general chairman of the event.

Among the feature exhibits planned are: Charles Reynolds, Escondido, largest kunzite crystal in the world, and faceted kunzite; A. W. Porter, Pepperwood, "eye" agates; Keith L. Shivers, Alhambra, "scenic pictures" in rocks; H. O. Toenjes, fire opal; Hubert A. Dafoe, Oakland, agatized fossil coral geodes; and Walter B. Lauterbach, Barstow, moss agate, petrified wood, etc., cabochons.

Field trips are being arranged, including

one to the Crestmore Quarry near Riverside.

These gem and mineral shows also are scheduled for May-June:

May 1-4—Dallas, Texas. American Federation of Mineralogical Societies and Texas Federation of Mineral Societies joint convention and show at Women's Building, State Fairgrounds. Host society is Dallas Gem and Mineral.

May 3-4—Colton, California. Slover Gem and Mineral Society's first annual show at the Boy Scout Cabin in Colton Park. May 3: 10 a.m. to 9 p.m.; May 4: 10 a.m. to 6 p.m.

May 3-4—Stockton, California. Sixth annual San Joaquin Valley Gem and Mineral show at the Agricultural Building, County Fairgrounds. Show, "Picture and Scenes in Rocks," is sponsored by the Stockton Lapidary and Mineral Club and the Mother Lode Mineral Society of Modesto.

May 3-4—San Mateo, California. Gem and Mineral Society of San Mateo County's annual show at Fairgrounds, 25th Ave. and Pacific Blvd.

May 5-6—Great Falls, Montana. Arrowhead Mineral Club's annual Mineral and Artifact show, DeMolay Memorial Building, 801 Second Ave. North. Annual banquet on 6th.

May 10-11—Benicia, California. Rock and Gem Club's annual show at Veterans Memorial Hall. Admission free.

May 17-18—Oakland, California. East Bay Mineral Society's 20th annual Gem and Mineral Festival at Scottish Rite Temple, 1545 Oak St.

May 17-18—Glendale, California. Lapidary and Gem Society's 11th annual show at Civic Auditorium, 1401 Verdugo Road.

May 17-18—Everett, Washington. Rock and Gem Club's show.

May 18-24—Portland, Oregon. Oregon Agate and Mineral Society's annual show at the Oregonian Hostess House, 1320 S.W. Broadway.

May 22-25—Chico, California. "Chest-O-Jewels" show at the Silver Dollar Fair, presented by Golden Empire Mineral Society, Paradise Gem and Mineral Club, Feather River Gem and Mineral Society, Yuba-Sutter Mineral Society and Shasta Gem and Mineral Society.

May 24-25—Whittier, California. Gem and Mineral Society's ninth annual show at Palm Park Community Center, 727 So. Palm Ave.

May 31-June 1—Price, Utah. Castle Valley

Gem Society's show. For display, commercial space information, write to Bill Branson, Box 162, Helper, Utah.

June 19-20—Paradise, California. Gem and Mineral Club's show at Memorial Hall.

June 19-22—Downers Grove, Illinois. Midwest Federation convention-show. Write Esconi, 4729 Prince St., for further information.

**CHECK LIST FOR
TESTING METEORITES**

Nodules of iron compounds, especially hematite, a heavy dark red iron oxide, are frequently mistaken for meteorites. One of these earthy nodules, when ground, will not show free metal, and although the ground surface will have a metallic luster, it will not be silvery, and generally will not be magnetic.

Artificial slag (cinder) sometimes contains free iron, but it comes in round pellets or drops, while iron does not take this form in meteorites. Slags or cinders generally will be very porous or spongy—meteorites never are. Also mistaken for meteorites are pieces of rusted iron tools. Rocks showing conspicuous or well-shaped crystals are not likely to be meteorites.

If the object you find has all six of the following characteristics, it almost certainly is a meteorite: solid and not porous; irregular shaped; heavy for its size; black or brown on the outside; metallic iron shows on ground surface; and different from country rocks. Even if the object does not meet all of these requirements, it still may be a meteorite.—*Texas Observers*

"QUOTES"

FROM THE GEM AND MINERAL WORLD

"Good judgment in gathering rocks comes from experience; and experience—well, that comes from poor judgment." — *Desert Hobbyist*

* * *

"No man knows his true character until he has run out of gas, purchased something on the installment plan, and raised an adolescent."—San Gabriel, California, Valley Lapidary Society's *Stone Tablet*

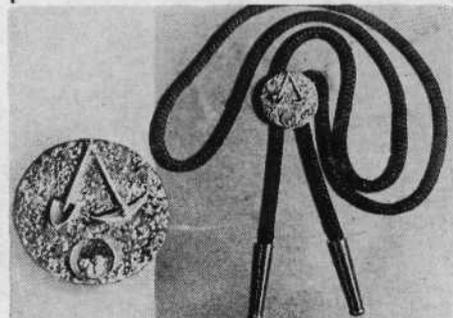
* * *

"It takes as much energy to wish as it does to plan."—Glen Gipson in the *Arrow Points*

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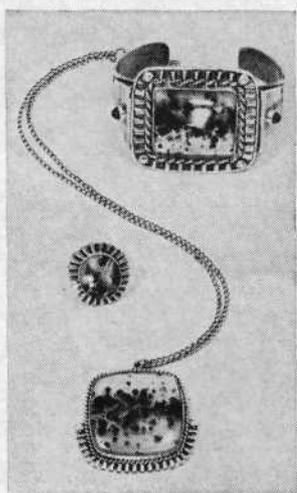
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Origin of Gem, Mineral Names

Here is a list of mineral and gem stone names, and their origins:

AGATE—from the river Achates in Sicily, where agate has been known since the time of Theophrastus.

AMETHYST—Greek "not drunken." Old superstition existed that amethyst would cure intemperance.

APATITE—Greek "to deceive." Apatite was frequently mistaken for beryl.

ARAGONITE—from Aragon in Spain.

BARITE—Greek "heavy."

BASALT—Ethiopian "black stone."

BIOTITE—after the French physicist, J. B. Biot.

CARNELIAN—Latin "flesh." In reference to color sometimes exhibited by carnelian.

CHALCEDONY—from Chalkedon in Asia Minor.

DOLOMITE—after Deodat de Dolomieu who first described dolomite's characteristics.

FLUORITE—Latin "flow." In reference to fluorite's use as a flux.

FRANKLINITE—from Franklin, New Jersey, only place in the world where franklinite is found.

GALENA—Latin term applied both to the lead ore and slag from refining.

GARNET—Latin "grain."

GYPSUM—Greek "to cook." In reference to the burnt or calcined mineral.

HALITE—from the halogen group of elements.

JADE—Spanish "piedra di hijada"—kidney stone, because it was thought jade was beneficial to kidneys.

MALACHITE—Greek "mallow"—green.

MARCASITE—of Arabic origin and formerly applied to common pyrite.

MICA—Latin "micare"—to shine.

PEGMATITE—Greek "joined together."

PLATINUM—Spanish "platina"—small silver.

PYRITE—Greek "fire." In reference to sparks emitted when pyrite is struck with steel.

RHODOCHROSITE—Greek "rose" and "color."

RHODONITE—Greek "rose."

SPHALERITE—meaning blind or deceiving, in reference to sphalerite's often being mistaken for lead ore.

STIBNITE—Latin "stibium"—antimony.

TOPAZ—Greek "to seek." In reference to an island in the Red Sea that was difficult to find, from which a yellow stone, now believed to be a yellowish olivine, was obtained.

TURQUOISE—French "turque"—after Turkey from which this stone first mined in Persia, reached Europe.

VESUVIANITE—from Mt. Vesuvius.

WAVELLITE—after its discoverer, Dr. Wavel.

WILLEMITE—after King William I of Netherlands.

WULFENITE—after Austrian mineralogist F. X. Wulfen.

ZIRCON—Arabic "zarqun"—vermillion; or from Persian "zargun"—golden colored.

—Eleanor Blackburn in the San Diego, California, Lapidary Society's *Shop Notes and News*

FLASH FLOOD REVEALS BIRTH OF CONCRETIONS

Most rockhounds enjoy observing interesting geological formations which are millions of years old, seldom stopping to consider that on almost every day in the outdoors they can see the start of formations which may appear millions of years hence.

Harry Zollars of the El Paso, Texas, Mineral and Gem Society had the thrill of closely observing such an event at Elephant Butte Lake near Truth or Consequences, New Mexico.

The deep canyons on the southeastern shoreline of the lake drain an immense expanse of land, mostly of rough volcanic origin. A flash flood came roaring down the largest of these gorges, Ash Canyon, and the following afternoon the channel again was dry enough to explore.

The flood created hundreds of clay balls, from marble to basketball-size, which Zollars found on the canyon floor. Still soft and easily broken, every ball he examined had in its center a piece of twig, small pebble or a tiny mass of plant fiber. Mingled with the clay was a considerable portion of grains of coarse sand and particles of rotting lava. Zollars was viewing the formation of thousands of concretions which, once covered by sediments carried by future floods, would harden, be compressed and never again revealed until some far future age.—*The Voice*

The Santa Clara Valley Gem and Mineral Society of San Jose, California, has scheduled its Fourth Annual Exhibition for September 20-21. The show again will be held at the I.E.S. Hall on East Santa Clara Street, and show hours are 10 a.m. to 10 p.m.

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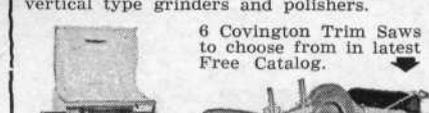
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THE BOOK of Mineral Photographs, 118 pages, octavo, over one hundred pages of excellent illustrations of fine minerals and rocks with descriptions. Indexed. \$1.68 postpaid. B. M. Shaub, 159 Elm Street, Northampton, Massachusetts.

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BLUE ARIZONA vein agate. 100 pounds \$25. Also colorful assortment tumbled stones to 1-inch size from Nevada's El Dorado Mountains. \$2 pound, 5 pound minimum order. Postpaid. Napier, 20-472 Harvard Ave., Hayward, California.

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WE ARE MINING every day. Mojave Desert agate, jasper and palm wood, shipped mixed 100 pounds \$10.50 F.O.B. Barstow. Morton Minerals & Mining, 21423 Highway 66, R.F.D. 1, Barstow, California.

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OPALS AND SAPPHIRES direct from Australia. Special — this month's best buy: rough Australian gem stones—6 assorted opals, 3 black star sapphires, 3 blue sapphires, 3 zircons, 3 garnets—18 gem stones airmailed for \$18. Send personal check, international money order, bank draft. Free 16 page list of all Australian Gemstones. Australian Gem Trading Co., 49 Elizabeth Street, Melbourne, Australia.

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ULTRA VIOLET lamps for spectacular mineral fluorescence from \$14.50. Free brochure. Radiant Ultra Violet Products, manufacturer, DM, Cambria Heights 11, New York.

ALL FOR \$2.95: Twelve Rayon bola tie cords (no seconds) six colors two of each, 12 tie slides and 24 tips, gold or silver finish. Another special: All for \$4.35: twelve leatherette bola tie cords, six colors two of each, same number of tips and slides as above. Look at this: Sweater Guard has 1/2" pads for cementing stones to, medium size chain, gold finish. 3 for \$1.10. And this: 7" Bracelet medium weight, gold finish 3 for 65c. Satisfaction guaranteed or your money refunded. California residents add 4% for state and county tax. All items postpaid to you. The Tuckers, Dept. D, 3242 New Jersey Ave., Lemon Grove, California.

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12 POUNDS OF beautiful Colorado mineral specimens, \$8.00 prepaid. Ask for list of others. Jack the Rockhound, P. O. Box 245, Carbondale, Colorado.

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GEMMY FLUORITE octahedrons. 3 pairs \$1. Each pair a different color. Gene Curtiss, 911 Pine St., Benton, Kentucky.

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GREEN GARNETS from Mexico. While they last, a full pound of green garnet crystal specimens from Mexico for \$3 pp. R. Berry, 5040 Corby St., Omaha 4, Nebraska.

TRADE OR SALE by private party, smoky quartz crystals, singles, clusters, double terminated, phantoms and other inclusions. Box 796, Bigpine, California.

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EASY STEPS TO ENAMELING PRE-FORMED COPPER

Copper enameling is a fairly simple procedure, requiring the following materials: copper sheeting of fair thickness, mineral oil or one of the prepared bases, and powdered enamel.

Cut the copper sheeting to desired shape and size, and clean with a commercial cleanser. Then cover the copper piece with a thin coat of mineral oil or prepared base and uniformly spread the powdered enamel over the entire copper surface.

Next step is to place the copper piece on a metal screen stand and place in a kiln fired at 1800 to 2200 degrees Fahrenheit until the enamel melts and flows together.

Remove the copper piece and allow to cool. Then clean the back, and finish the enameled surface. Brackets, clips, etc., can be soldered to the back of the piece for mountings.

For an unusual surface effect, try putting on several layers of different colored enamels.—Max Cox in the Searles Lake, California, Gem and Mineral Society's *Mineral News*

MOST MINERALS CAN BE CLEANED WITH DETERGENTS

Mary P. Allen, whose experience in cleaning, preserving, labeling and cataloging minerals includes work on the 11,000 specimens at the Colorado State Museum, reports that 90 percent of the specimens in the collection were cleaned with plain soap and water.

Detergents were found to work best for they made the minerals brighter. In preparing the soap solution, the powder should always be put in a small amount of cold water (this separates each particle), and then run in hot water with a swirling motion to thoroughly dissolve the soap. This is important for the soap jelly formed by dissolving soap in hot water will stick to the specimen and be very difficult to remove from the rough surfaces.

Only one specimen should be washed at a time, and then immediately rinsed and dried thoroughly so that it is wet a mini-

mum amount of time. It is important to use lukewarm water—just warm enough to dissolve the accumulation of soot and grease, but not hot enough to cause a quick expansion of the specimen which may cause it to crack. This is especially true of large specimens where the heat doesn't have a chance to penetrate evenly through the entire specimen.

It is apparent from their appearance which specimens should not be cleaned in water—very fine fibrous materials, hairy specimens, etc. Water packs the fibers and even after drying, they no longer have their furry appearance. These specimens often can be cleaned in alcohol, ether or dry-cleaning compounds.

Those specimens which should not be washed because of their chemical composition—clays, salts, crumbly-type material, etc. can be brushed with a soft or stiff brush, depending on the texture.

Detergents are especially good to use on the silica specimens, any of the quartz family, clear calcite, topaz, selenite and nearly all glassy specimens. Do not allow your soap solution to become grimy, but change to a clean solution often. Running water is the best rinse, for it carries off any scum which might stick to the specimen.—Colorado Mineral Society's *Mineral Minutes*

METHOD FOR GROWING CRYSTALS AT HOME

Growing crystals is an interesting pastime. The amateur should select chemicals which have a considerable difference in solubility when hot and cold. The exact amount of material which must be added to a volume of water varies with each temperature and condition, and trial and error will not result in too much wastage.

Start with about three-quarters cup of water, warm gently and add the chemicals—about a half pound or more to each cup—stirring all the while, until there is some solid left over. Then heat a little longer, or add a small amount of water until the solution is clear. Cool slowly and crystals will

form on any object placed in the glass that will serve as a starting point—string, wire, seed crystals, etc. Cool slowly, insulating the vessel if possible. And give it time, at least overnight and in some cases several days. If too large a mass of crystals form, add more water and reheat in a pan of hot water. If too few crystals form, add more solids and reheat.

These easily obtained solids will form crystals: alum, Epsom salts, Rochelle salts, tartaric acid, copper sulfate, ammonium sulfate and ammonium nitrate. Use only pyrex vessels for metal compounds and wash up carefully after each experiment—treat all chemicals as you would poisons.

Crystals for display must be stable. Many will disintegrate when exposed to room temperature. Others will absorb water from the air and become soupy.—Don Ross in the Tacoma, Washington, Agate Club's *The Puget Sounder*

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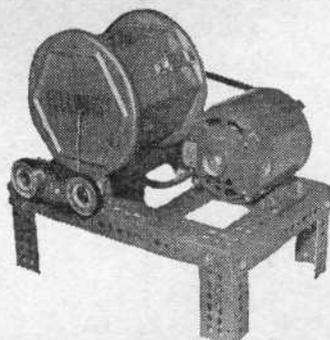
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ANSWERS TO DESERT QUIZ

Questions are on page 26

- 1—Death Valley.
- 2—Albuquerque.
- 3—White.
- 4—First photographic expedition through the Grand Canyon of the Colorado.
- 5—In the sun.
- 6—Mining.
- 7—Prescott, Arizona.
- 8—Corn.
- 9—A devil or evil spirit.
- 10—Quartz and feldspar.
- 11—Tucson.
- 12—Lieut. Beale.
- 13—Apache Trail.
- 14—Bandelier National Monument.
- 15—Tombstone.
- 16—Lew Wallace, author of Ben Hur.
- 17—Virginia City.
- 18—Lost Dutchman's gold.
- 19—Roosevelt dam.
- 20—The Colorado.



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Just Between You and Me

By RANDALL HENDERSON

THIS IS BEING written early in April after the rainiest March weather I have ever seen on the desert. As a result, the entire desert landscape is clothed in a new coat of green, and wildflowers are blooming everywhere.

The scientists tell us that every one of these little plants is a miniature factory absorbing radiant energy from the sun and by a process known as photosynthesis converting it to sugar and other elements useful to the animal world. One of the by-products of the process is the oxygen we breath.

Thus, while the plant world is in constant operation purifying the air, human beings continue at an accelerated rate to foul up the atmosphere with the poisons from smoke stacks and automobile exhausts. I am hoping for the day when the auto makers, instead of producing gaudy 4-wheeled monsters designed mainly to feed human vanity, will turn their energies to the perfection of combustion mechanisms engineered to protect human lungs against the poisonous carbon monoxide which now pours out of every automobile exhaust.

I haven't much sympathy for the car manufacturers in their present low-sales dilemma. For too long they have been rating big profits as more important than public health and safety.

* * *

As far as desert folks are concerned, one of the best news items from Washington recently was the announcement that President Eisenhower had signed Congressman Clair Engle's bill limiting the Pentagon's seizure of public lands for target and bombing purposes. Under the new law the armed forces cannot acquire additional tracts of more than 5000 acres without approval of congress. It is to be hoped that a further unification of the three branches of service will in the future make possible the restoration to the public domain of at least part of the 30 million acres already posted against civilian trespass.

* * *

Residents of the Barstow-Hinkley area on the Mojave desert are up in arms against a scourge that threatens to denude the landscape of one of the most beautiful wildflower displays in many years.

The sheep men have moved in with their herds, and when sheep are turned loose on the tender shoots of young annuals they mow the herbage down to the roots, and worse than that, they rob the land of its potential seed supply and thus contribute to its aridity for years in the future. Robbed of its cover growth and the soil

pulverized, the land is exposed to wind and water erosion that bring a multitude of evils ranging from sandblasted windshields to complete loss of fertility.

The sheep men, and especially their herders, seem to have a ruthless disregard for privately owned lands. Owners of the herds generally are hard to locate, and the herders too often "no speaka da English." Consequently the flocks brought to the desert in trucks are turned loose on the open range leaving a wide swath of destruction without regard for private holdings which may lie in their pathway. I have the word of one of these owners that it is a frustrating experience trying to protect his private holdings.

In Riverside County, California, an ordinance has been passed which prohibits the grazing of sheep on certain lands during the period of wildflower growth. Civic organizations in the Mojave area are proposing a remedy which will be more far-reaching in its effect. They are asking that the Taylor Grazing Act be amended to prohibit the grazing of sheep in areas where the average annual rainfall is less than seven inches. Such an enactment would protect practically all of the low desert areas against the invasion of sheep. And I am sure that a vast majority of Americans would approve such a law.

* * *

I have just been reading the proofs for Nell Murbarger's new book, *Sovereigns of the Sage*, which will come off our *Desert Magazine* presses about the middle of May. In the introduction to the book is a bit of autobiography which reveals a way of life almost unknown today. Nell wrote:

"I was born in a one-room tarpapered shack on a dry-land homestead. We melted snow for water in winter, and in summer hauled it in wooden barrels set on a home-made plank sled drawn by horses. We had little fuel other than cow-chips, and to insulate our cabin against winter's terrific cold, Dad banked it with straw and earth bound into place with wire chicken-netting, and over the bare pine-board walls of the interior Mom pasted pages from *The Denver Post* and *The Youth's Companion*. Some winters Mom and I didn't see another woman for weeks at a time; yet I don't recall that we ever felt lonely or underprivileged. Even though our shanty was small and inelegant, it was large enough to contain food and warmth and games and books and love. We needed nothing more to assure our happiness."

And so Nell has written a charming book about the remote ranchers and miners and homesteaders of the Nevada and Utah desert country, folks whom she is well qualified to write about because "they are my people."

BOOKS of the SOUTHWEST

BIOGRAPHY REVEALS TRAGIC CAREER OF WESTERN GUNMAN

Doc Holliday of Tombstone days, thanks to time, motion pictures and television, has become a western hero of the frontier days. He has been portrayed as a shrewd professional gambler, which he was, and by reason of his close association with and intense loyalty to that deserving frontiersman, Wyatt Earp, Holliday has been given a halo of virtue which, according to Pat Jahns, author of *The Frontier World of Doc Holliday*, is not always an accurate reflection of the man's character.

Holliday's career was tragic. Dying of tuberculosis, he gave up his dental practice, his home, family and sweetheart to come West in the hope of recovery. He died in 1887 when he was 35. An alcoholic, and never an expert marksman with a six-shooter, Holliday nevertheless aligned himself with the law enforcement element in Tombstone and by his fierce sense of loyalty gained a reputation which may be attributed in part to a sense of "what-do-I-have-to-lose."

Despite the cloud which author Jahns casts on Holliday's career as a gun-fighter, this biography makes interesting reading, for in the West of 1870 and 1880 the human qualities of both courage and cowardice were starkly revealed. Doc's alliance with Earp during Tombstone's heyday adds to this interest—indeed, it is safe to say that were it not for this relationship, Holliday today might well be an all but forgotten man.

Published by Hastings House, New York City; bibliography and index; 305 pages; \$5.00.

MURBARGER'S NEW BOOK TO BE PUBLISHED IN MAY

Nell Murbarger, "roving reporter of the West" has completed her latest book, *Sovereigns of the Sage*, and the manuscript is now in process of print-

ing at the Desert Magazine Press in Palm Desert. The 50 chapters in this book are devoted to a vivid portrayal of living pioneers who have found a hard but very satisfying way of life on the ranches and in the mines in the Southwest. It is a book filled with human interest — about the lives of people who are doing the things most city dwellers dream they would like to do.

The popularity of Miss Murbarger's previous book, *Ghosts of the Glory Trail*, continues high, and a third edition of the volume is to be published later this year. This book is devoted to the ghost mining camps of Nevada and Utah, their history and present status.

Desert Magazine Press also plans to publish a second edition of John D. Mitchell's *Lost Gold and Buried Treasures Along the Old Frontier*, in June, as the first edition is practically exhausted.

IRVING STONE'S HISTORY OF THE WEST'S CONQUEST

The opening of the Far West was accomplished in six short decades—a man's lifespan.

It began in 1840 with the unmasking of the incurably weak Spanish-Mexican government through its inability to meet the challenge of the increasing influx of Americans to the Pacific Slope. It was completed in 1900 when the dynamic American culture had spilled over into all corners of the new land. By 1900 the Mormon experiment in Utah was no longer viewed with alarm; Nevada had tasted mining boom and bust and boom again; Arizona's outlaw days were over; and the great Southern California land rush had wiped out the last traces of Spanish-Mexican pastoral economy. Now the young American nation could face the 20th Century with the adventure, wealth and promise of the West fully assimilated into its blood stream.

Irving Stone describes these 60 years as "one of the most colorful, dramatic, tumultuous and heroic sagas of man's movement across the face of the earth," in his work, *Men to Match My Mountains*, a best seller of a few seasons back.

Stone's book is a highly readable and very entertaining volume. He relates the 1840-1900 history of the West through the men of action who made that history — Sutter, Fremont, Brigham Young, Bancroft, Crocker, Stanford, Sharon, Sutro; and the explosive events which gave that history

its epic character—the Donner tragedy, Gold Rush, Comstock Bonanza, building of the railroads, Southern California real estate boom.

Published by Doubleday & Company, Inc., Garden City, New York; 459 pages; Index, bibliography, and source notes. \$5.95.

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*Based on March sales by Desert Magazine Bookshop

If you enjoyed Nell Murbarger's
GHOSTS OF THE GLORY TRAIL

you will be doubly delighted with this great new book
by the same author—

SOVEREIGNS OF THE SAGE

—a Treasury of True Stories about Unusual
People and Places in the vast Sagebrush
Kingdom of the Western United States.

Widely known as The Roving Reporter of the Desert, Nell Murbarger, in the past dozen years, has traveled nearly 150,000 miles by automobile, horseback and afoot, much of that distance on remote back trails of the Great Basin area—the Intermountain West—where towns are often as much as 100 miles apart, and a man may live 25 miles from his nearest neighbor.

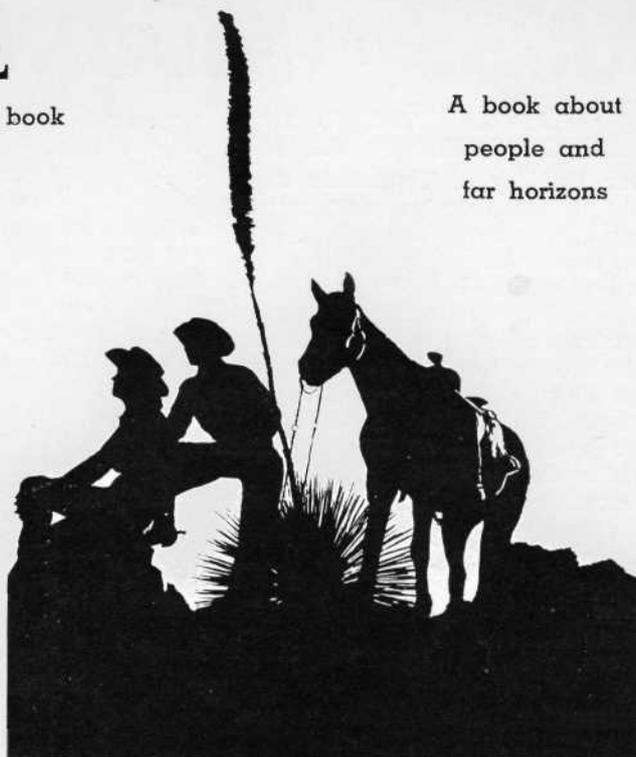
Miners • Ranchers • Hermits • Philosophers

The result of this extended rambling has been a prodigious outpouring of magazine and newspaper articles laid in nearly every county between the Rocky Mountains and the Pacific Coast—this writer's working assignments having embraced such diverse topics as dozens of mining operations—marble quarries to turquoise and gold mines; scores of abandoned ghost towns, isolated cattle and sheep ranches of baronial extent, Indian pueblos, archeological ruins, mighty reclamation projects, wildlife refuges, historic manhunts, and scores of other topics pertinent to the West. In addition, this Roving Reporter has written stories about hundreds of desert characters ranging from sheepherders to senators, and hermits to philosophical storekeepers, and has devoted countless hours to researching yellowed newspaper files and pioneer records.



NELL MURBARGER
Roving Reporter of the Desert

A book about
people and
far horizons



50 Delightful Chapters of Human Interest

Out of the vast storehouse of material thus accumulated has been selected only the cream for inclusion in **SOVEREIGNS OF THE SAGE**. Written with meticulous regard for detail and accuracy, each of the book's 50 chapters is a complete story in itself; each story sparkles with warm human interest and humor, and the entire collection reflects a keen understanding of the Sagebrush country and its remarkable sons and daughters.

As a delightful garnish for the main subject matter of the book, the author—who travels alone over the back country and camps at night by the wayside—reveals scores of amusing incidents and "stories behind the stories" that have marked her unique career as America's best-known and longest-established freelance Roving Reporter of the Desert.

A Western book of totally different character, **SOVEREIGNS OF THE SAGE** is as delightfully spontaneous and refreshing as a summer shower over the wide Sagebrush Kingdom that forms its locale. Printed on excellent-quality book paper, with substantial cloth binding and attractive dust jacket, "**SOVEREIGNS**" is a large volume, six-by-nine-inches in size, comprising 380 pages of text and pictures, 70 superb halftone photographs, eight pages of maps, and complete cross index.

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