

THE

Desert

M A G A Z I N E



MAY, 1939

25 CENTS

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DESERT Calendar

- APRIL 19-MAY 14 — Art League of New Mexico to exhibit in fine arts building at state university.
- APRIL 26-29—Navajo Service conference at Flagstaff, Arizona.
- APRIL 27-28—Annual convention New Mexico club women at Ruidoso.
- APRIL 28-29—Arizona Road and Street conference sponsored by university and American Society of Civil Engineers at Tucson.
- APRIL 29-30—14th annual flower show at Julian, California, to be continued each weekend during May. Mrs. Blanc and Mrs. Botts in charge.
- APRIL 29-30 — Annual Pioneer Day celebration at Twentynine Palms, California, with rodeo, archery and dancing. Barbecue at Hidden Valley in Joshua Tree national monument on the 30th, sponsored by San Bernardino county chamber of commerce.
- APRIL 30—Seventh annual wildflower festival at Hi-Vista in Antelope valley, California.
- APRIL 30-MAY 14—"It's Apple Blossom Time" in San Juan county, New Mexico. Apple Blossom dance and other festivities at Farmington.
- MAY 1—State convention of Odd Fellows at Flagstaff, Arizona.
- MAY 1—Annual fiesta at San Felipe pueblo in New Mexico.
- MAY 1 — Special exhibit of Indian ceremonial masks to open at Southwest Museum, Los Angeles.
- MAY 3—"Under the Stars with the Desert Rats." Campfire stories by Arizona pioneers, under auspices All States club at Tucson, Arizona.
- MAY 4-6—Arizona encampment Spanish-American war veterans at Douglas.
- MAY 5—Cinco de Mayo fiestas at all Mexican border towns.
- MAY 6-7 — Final dates of Ramona Pageant at Hemet, California.
- MAY 7—Annual Horse Show at high school athletic field, Yuma, Arizona.
- MAY 11-13—"Boomtown Spree" celebration at Miami, Arizona.
- MAY 11-13—Lions' District convention at Holbrook, Arizona.
- MAY 11-14 — Helldorado celebration and rodeo at Las Vegas, Nevada.
- MAY 12 — Duchesne county musical festival at Duchesne, Utah.
- MAY 12-14—First annual rodeo and fiesta at Douglas, Arizona.
- MAY 12-14—Calico Days celebration at Barstow, California.
- MAY 20-21—State Knights of Columbus convention at Douglas, Arizona.
- MAY 20-23—Fiftieth Jubilee celebration at State College, New Mexico. Commencement on 23rd.
- MAY 21—Second annual Nevada small bore rifle shoot at Winnemucca, auspices Nevada Rifle club.
- MAY 27-28—Utah State Press association meets at Moab with Moab Lions club as host.



Volume 2

MAY, 1939

Number 7

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Palm Canyon

By CALVIN W. CLARK

429 N. Marengo St.
Alhambra, California

First prize winning picture in the March contest of the Desert Magazine. This photograph was taken with an Eastman Bantam special at noon. Stop f16, 1/100 second, Eastman Plus X film.

Special Merit

In addition to the prize winning pictures, the following entrants submitted photographs of more than ordinary quality:

"Defeat with Honor," by Phil Remington, El Centro, California.

"Desert Moonlight," by W. A. Easley, Casa Grande, Arizona.

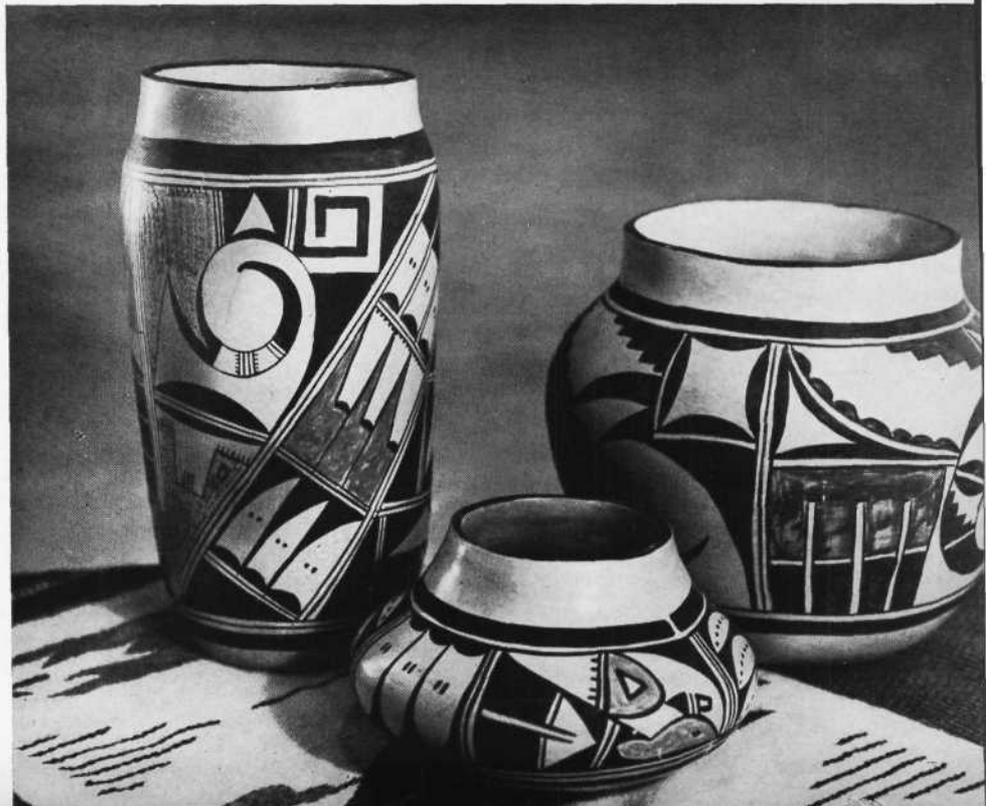
"Guardians of Desert Castles," by Alice Marie Roberts, Los Angeles, California.

Hopi Handicraft

By FRED HANKINS

Taft, California

This photograph, winner of the second prize in the March contest of the Desert Magazine, was taken with a 5x7 Eastman View camera on Panatomic film. Taken with artificial lighting, exposure 4 seconds, stop f32.



For those who love the virgin wilderness and have the hardihood to follow winding desert trails into remote regions, the trip to Rainbow Bridge near the Arizona-Utah state line is one of America's most enjoyable adventures. Bill and Katherine Wilson who operate the quaint stone lodge at the end of the motor road—where the 14-mile foot-trail to the bridge begins—are unofficial guardians for the bridge, and friendly hosts to all who go to that region. Here is information about a place you'll want to visit some day.

Shortcut to Rainbow Bridge

By JOHN STEWART MacCLARY

FOR reasons known only to himself the sleek pack-mule had wandered off the steep trail and was pioneering a new route through salmon pink boulders. With a tolerant smile, Bill Wilson climbed from the saddle of Abe, his favorite saddle mule. Neither impatiently nervous nor profanely wordy, Bill talked to the wayward critter very much as a loving parent might reason with a balky child.

"I didn't expect this from you, Old-timer. You know our guests want to see Rainbow Bridge—and they haven't got all the time in the world. It's almost noon and we'll soon be stopping for lunch at Cliff canyon creek. You'll get a rest from your pack, a long drink of cool water and a nosebag of oats. Now, let's get back in line and amble on down the trail. Attabo-y!"

This incident of the trail reflects very accurately the personality and character of Bill Wilson. Also, it discloses one of the reasons for his popularity as host at Rainbow Lodge in northern Arizona. A man who understands mules well enough to get willing cooperation from the beasts without harsh words and stinging blows, is very likely to understand the notions and whims of human beings unaccustomed to the trail.

I asked Bill why he favored mules for pack animals.

"Mules are more sure footed than horses," he replied, "and they don't work so hard on rough trails. They stand the gaff better—seldom get spooky, and never take chances. You can depend on Mister Mule always making things easy for himself. That's why he is the safest trail mount for an inexperienced rider—man, woman or child."

Bill Wilson's gentle confidence gives

assurance to visitors whose experience with mules has been limited to hearing the creatures described as stubborn, treacherous, undependable. Sleek hide and well shod hoofs of the mules reveal the thoughtful care given to his animals.

"I owe them good feed and comfort," Bill declares. "It's an honest debt for the comforts they earn for Katherine and me."

Katherine—Mrs. Wilson—brightens Rainbow Lodge and warms the hearts of visitors with the unaffected charm of her personality. But these words of mine fall flat in attempting to introduce her. It would be unfair to her for anyone to try to put her radiance into print. I prefer to select a few paragraphs from letters she has written.

"... One of the busiest periods in our varied career began on the evening of October 14th, lasted until the morning of October 27th without a let up. It was an interesting time—even if we did go around in circles and Bill made four trips handrunning to the bridge and back. Several of these folks spent an extra day or two, and every bed on the place was filled. Each morning when I came to the kitchen I would find the fire already made, the coffee pot on, and sitting at the kitchen table would be the vice president of an eastern railroad and his son. They liked their early morning cups of coffee and would sit chatting during breakfast preparations. We soon would hear a voice calling from a cottage, which would be young Bill M's mother



Katherine and Bill Wilson of Rainbow Lodge.

calling for her pitcher of hot water and her first cup of coffee. I have long since grown accustomed to company in the kitchen—and go along mechanically preparing the meal."

Another glimpse of Katherine Wilson may be gained from her report of Christmas in the Hubert Richardson trading post at Cameron, Arizona. Mrs. Hubert Richardson—Mabel—is the sister of Bill Wilson. Here is part of Katherine's letter:

"... Christmas eve, the tree and Santa centered on Jimmy Richardson, the small son of a cousin of Hubert's who works here in Cameron. However, Santa was more than generous to all of us and everyone enjoyed one of the nicest Christmases ever. Mabel's dinner was just grand and her table looked lovely. It was a one o'clock dinner, and the balance of the day was practically all spent buying piñon nuts from the Navajos who had come down from Grey mountain for 'Kissmuss.' Christmas evening Hubert gave them beef, flour, coffee, sugar, lard, baking powder and salt. The Indians started cooking after dark and kept it up all night, together with singing by various groups of men scattered around the fragrant campfires. You can imagine how

much sleep we got that night. Next day, Monday, Navajo still were coming in—horseback and in wagons, all bringing nuts and handicraft to trade. By middle afternoon when Hubert was ready to pass out bags of oranges, apples, crackerjacks and candy, there were about 175 Indians here. At one time I counted 50 adult Navajo and eight children in the 'bull pen,' as traders call the trade room. Some \$500 worth of piñons were traded out here this week-end, and that was just the tail end of the crop."

In those personal expressions to a friend you may get the impression that Katherine Wilson must have been reared in the desert. She was not. Before marriage her background included Omaha, Cincinnati, New York City and Washington, D. C. Before she became hostess at Rainbow Lodge, where she greets tourists from all over the world, she enjoyed university education and technical training as a librarian—in addition to extensive study of pipe organ and piano. As much at home in a conservatory of music or a drawing room as in an Indian trading post or a desert kitchen, she understands the backgrounds and thoughts of people from both environments.

With Bill Wilson and his veteran guides to pilot strangers over the trails

of northern Arizona and southern Utah, with Katherine and her educated Navajo housemaids to provide a comfortable home at the end of the Rainbow trail, one easily understands why a large percentage of Rainbow Lodge visitors feel impelled to return again and again. Here they may escape from tension and noise, breathe mile-high air scented with cedar and sagebrush, and view natural wonders whose beauty and bulk surpass the most pretentious man-made creations. To enjoy this in the friendly atmosphere the Wilsons have created at their remote desert lodge is an experience any human would relish.

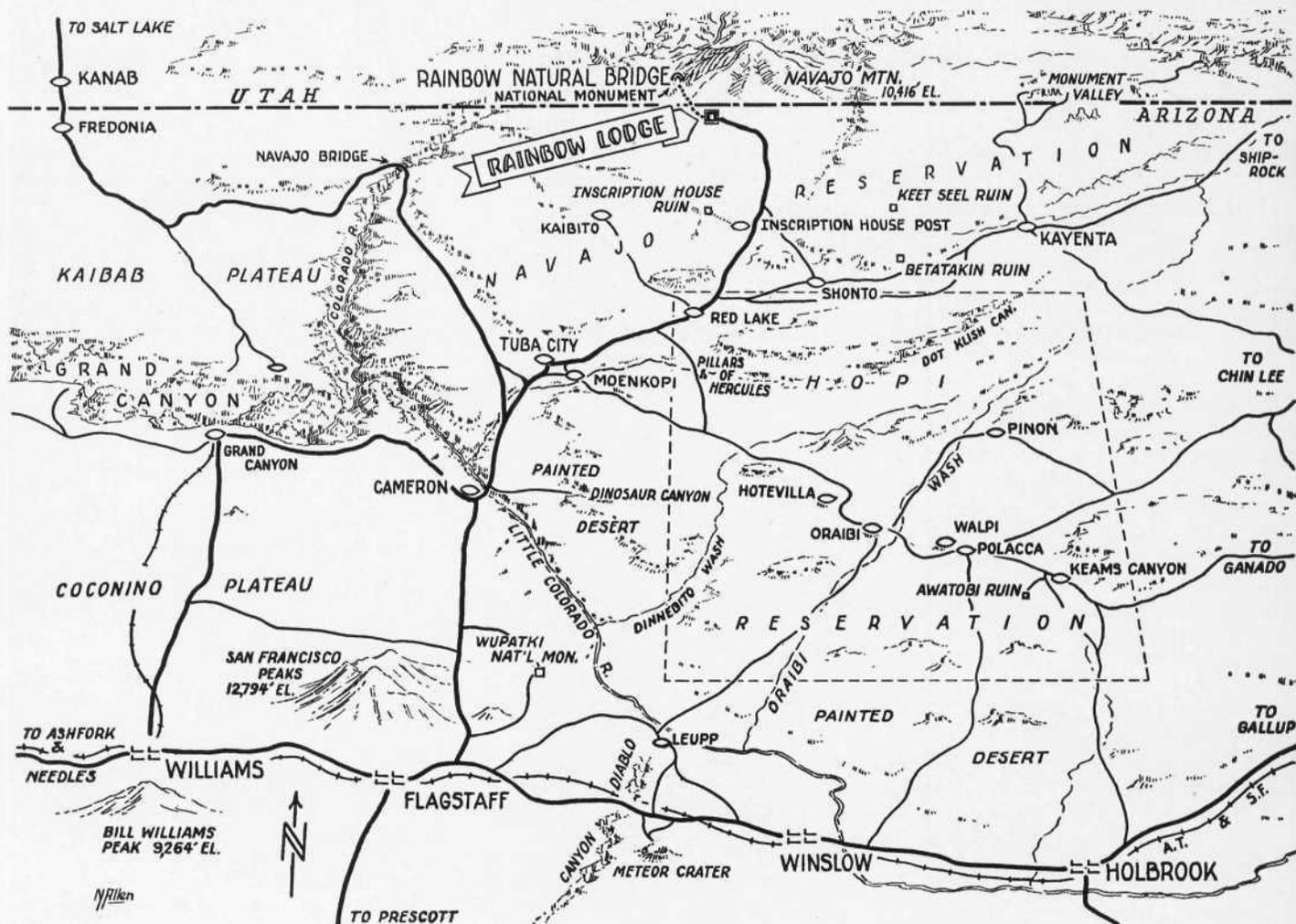
It was Hubert Richardson, long-time rancher and Indian trader of Cameron, Arizona, who in 1925 completed his plans for bringing Rainbow Bridge within easy reach of the traveling public. Although this largest natural arch in the world had first been seen by white men in 1909, and although an area of 160 surrounding acres in 1910 was reserved as Rainbow Bridge national monument, the mysterious natural wonder remained well nigh inaccessible to the average tourist.

Situated near the northwest base of Navajo mountain on the Utah side of the Arizona-Utah state line, Rainbow Bridge might be reached by two practicable

routes. An adventurous exploring party might launch boats at Lee's Ferry and float down the Colorado river to the point where Bridge creek joins the larger stream. From that point on the south bank of the Colorado a strenuous hike of seven miles would bring the visitors to their goal. The return boat trip—against the powerful current of the mighty Colorado would lend some hazard to such a trip.

The other choice was to charter guides and pack trains and spend ten days or more in the saddle on tortuous half-trails from the nearest outpost in Arizona. Splendid adventure, perhaps, for wealthy people with unlimited time and money—yet all classes were entitled to the privilege of viewing the natural wonder, since Uncle Sam had reserved it as property for all the people.

So what? So, although there is no official custodian of this national monument and it is within the jurisdiction of the general superintendent of southwestern national monuments, the matter of bringing in visitors opened opportunities for private enterprise. A feasible route was blasted from the western base of Navajo mountain to the arch. The nearest point that could be reached by automobile was the trading community of Red Lake, Ari-





zona, a little more than 60 miles distant from the "civilized" end of the trail.

In 1925 the Southwest was beginning to draw tourists in increasing numbers. Articles in popular magazines had called attention to the long-hidden natural wonders. Rainbow Bridge was one of these. Closely in touch with the growing tourist trade, Richardson decided to establish a shortcut to what the late Theodore Roosevelt had described as the greatest natural wonder in the world.

Trusting the unerring trail-finding ability of the native Navajo, Richardson at his own expense built an automobile road from near Red Lake to a spot only 14 miles distant from Rainbow Bridge. There, at the elevation of 6450 feet and at the western base of Navajo mountain which rises to the imposing height of 10,416 feet, Richardson erected red stone Rainbow Lodge near a never-failing spring of pure water.

The capitol building at Washington would only partially fill the arch beneath this "Rainbow that turned to stone."

The establishment includes a central dining hall and numerous guest cabins. Everything necessary for comfort and convenience of visitors is furnished.

Tumbled ruins of ancient pueblos nearby indicate that the region once was the home of aboriginal Americans. A well preserved kiva near the lodge marks the former scene of pagan rites. An ancient ditch lined with flat slabs of native stone still carries water from the spring which supplies the lodge. The surface of the earth yields fragments of ancient pottery, beads and arrow points.

While the cedar-scented coziness of Rainbow Lodge invites repose and forgetfulness, after all the place is maintained for the convenience of folks who

want to make trail trips to the last frontier. An overnight trip to the summit of Navajo mountain provides thrills and views which seldom are surpassed. A five-day circle trip around Navajo mountain and to the south rim of the Colorado river is great for those desiring considerable saddle exercise. The most popular excursion is the overnight trip to Rainbow Bridge — 14 miles each way. This brings us back to Bill Wilson and his mules.

For those visitors who still feel wary of mules—even after Bill has explained his preference for the longears—reliable horses are available. Another piece of Bill's shrewd philosophy may be applied. "Mules are like people," he says. "When they feel you understand 'em they'll cooperate with you. Try to force 'em—and they're sure to be contrary." As we climb the rugged ridges of red sandstone and the down trail appears ahead, there is a

feeling of assurance in the knowledge that Mister Mule will not become jittery on the edge of an abyss!

Having left Rainbow Lodge near eight o'clock in the morning the visitor stops for noon on Cliff canyon creek about half way along the trail, and first glimpses Rainbow Bridge in mid-afternoon.

The first view of the arch is not impressive. Seen from a distance, the delicate sculpturing of Nature is dwarfed by the massive cliffs surrounding it. But, as each plodding stride of your mule brings you nearer the "rainbow of stone," a feeling of almost superstitious awe creeps into your very soul. No visitor seems able to withstand the spell.

Essentially Rainbow Bridge is a dike of red sandstone which happened to stand in the way of moving waters and winds. Like the terraced depths of Grand Canyon and the towering spires of Monument valley, in silent eloquence it reminds us of the accomplishment of time and persistent effort.

Standing beneath the majestic arch, the visitor wonders about actual dimensions. Yes, this natural wonder has been measured. The space between tips of the bow is 278 linear feet—equal to the length of a fair-sized city block. The recorded height of the under curve of the arch is 309 feet—although torrents may have lowered the canyon floor and increased the distance since the measurement was made. Accurate to the inch or not, Rainbow Bridge is high enough to arch the dome of the capitol in Washington, D.C.

Why is this formation of salmon pink sandstone called "Rainbow Bridge?" Unlike other natural bridges—usually flat on top—both the upper and lower outlines of this arch form continuous curves. One Indian name for the mighty monument is translated "rainbow-turned-to-

stone." An Indian religious myth declares the arch bridges the gap between Earth and World of Spirits.

On a flat stone beneath one end of the arch is a box made of galvanized sheet iron. The hinged top is not locked, but it turns away rodents and moisture which might destroy the official register. All visitors are requested to sign the book. On the first day of November 1938 a total of 2823 names had been inscribed in the Rainbow Bridge register.

The accumulation of so few names in the 29 years since May 30, 1910, when the area first became a national monument—averaging less than 100 visitors per year—shows that the adventure has remained "unusual." A few vandals have defied Uncle Sam's warning of "fine or imprisonment or both" by defacing the monument with initials and names. Records of convictions and punishments are government secrets, but all such criminal chiseling has been removed from the ruddy stone along the trail. The only carved name now to be seen is Bernheimer Pass.

Charles L. Bernheimer, widely known businessman and outdoorsman of New York City, was among the earliest and most enthusiastic private citizens to become interested in preserving Rainbow Bridge for the enjoyment of the public. He has financed and accompanied numerous scientific expeditions into the wilds of northern Arizona. Records of his observations and trail experiences, published in his illustrated book RAINBOW BRIDGE, may be found almost wherever popular books are sold.

Built of native rock, Rainbow Lodge is at the end of the motor road. From this point a 14-mile foot trail leads to Rainbow Bridge.

At a little distance uptrail from the arch are two large wooden chests with padlocked lids. One contains bags of feed and complete shoeing equipment for the trail animals, tinned or packaged food and camp utensils for the visitors. The other shelters tents, cots, sleeping bags and heavy bedding for stormy weather. The padlocks have been found essential because there have been visitors who made the trip without guides.

As night descends the cheery campfire draws the party together. The mules have been fed their measured rations of grain and are browsing scattered clumps of grass. They cannot stray far in the night—with Colorado river seven miles to the north, a barbed wire gate barring the uptrail, perpendicular cliffs closing off east and west, the beasts will be at hand when they are needed.

Scents of fragrant cedar smoke and trampled sagebrush blend with the aroma of coffee and bubbling mulligan. The tenderfoot forgets his former need for highballs or cocktails as appetizers. Fresh air and a day in the saddle have dispelled the need for bromides and alkalizers. The canyon breeze hums a lullaby. Perhaps a coyote sings goodnight.

The route to be followed for reaching the shortcut to Rainbow Bridge is charted on the accompanying map. Those who travel the rails may make the trip from Grand Canyon, Arizona or from Flagstaff by Harveycars. A detailed description of interesting experiences to be enjoyed may be obtained by mailing a request to Rainbow Lodge, Tonalea, Arizona. But the printed folder cannot describe the pleasure of meeting Bill Wilson who understands mules and folks and trails—and Katherine Wilson who understands foods and folks and Bill.



Photo of Everett Ruess and his burros taken by Wes Visel several months before Everett's last trek.



Vagabond of the Desert Wilderness

Sunshine or storm—no matter what the elements brought forth Everett Ruess found interest and beauty in every situation. Here is another of the letters written by the young artist and vagabond before his tragic disappearance in the Utah wilderness in 1934. The original story of Everett's life and the mysterious circumstances of his last desert trip were told in the September number of the *Desert Magazine* by Hugh Lacy.

By EVERETT RUESS

Dear Father and Mother:

I had a strange ride last night. At twilight, by the side of a rushing stream, on the edge of the desert, I packed and saddled my burros. The half moon had an orange glow as I rode on the trail up the mountains. Behind us, thunder boomed on the desert, and black clouds spread. We soon climbed above the red sandstone cliffs, and tall pines and firs stood against the night sky. Moaning winds swept down the canyon, bending the tree tops, and clouds hid the moon.

Silently old Cockleburrs, my saddle burro, carried me upward through the night, and Leopard followed noiselessly with the pack. Grotesque shapes of trees reared themselves against the darkening sky, and disappeared into blackness as the trail turned. For a while the northerly sky was clear, and stars shone brilliantly through the pine boughs. Then darkness closed upon us, only to be rent by lurid flashes of lightning and thunder that seemed to shake the earth. The wind blew no longer, and we traveled in an ominous murky calm, occasionally shattered by more lightning and thunder. Finally the clouds broke and rain spattered down as I put on my slicker. We halted under a tall pine. The burros stood motionless with head down and water dripped off their ears.

In half an hour the rain stopped, and the skies cleared. By moonlight we climbed to the rim of the mountain, and I looked over vast stretches of desert. Thirty miles away was

the dim hulk of Shiprock, a ghostly galleon in a sea of sand.

We turned northward on the nearby level top of the mountain and winding through the glades of aspen we came to three peaceful lakes, gleaming silver in the moonlight. Under a clump of low sprawling oaks we stopped, and there I unpacked, turning the burros out to graze on the tall meadow grass.

Now it is afternoon. Flowers nod in the breeze, and wild geese are honking on the lake. I have just been for a long, leisurely ride on Leopard, skirting the edge of the mountain, riding through thickets of rustling green, past dark, mysterious lakes, quiet and lonely in the afternoon silence. Two friendly horses were belly deep in a pond, swishing their tails and placidly chewing rushes and swamp grass. Four other horses, cream and black, sorrel, buckskin and grey, made a splendid picture as they looked off on the edge of a valley, under towering pine trees. No human being disturbed the brooding silence of the mountain.

"For let the mad wild birds of dawn be calling me,
I will abide in this forest of pines."

That is something I remember from "Green Symphony," John Gould Fletcher's vivid poem of forests. Have you read it? Kayenta is my next address.

LOVE FROM EVERETT.

The tall white plumes with the waxen blossoms seen on the desert hillsides this month are Yuccas. There are at least a half dozen species of the Yucca group in the Southwest area. They are members of the Lily family, and are useful as well as ornamental. To desert Indians of a past generation they supplied food, raiment, building material and soap for the toilet. They are still used in some of the tribal rituals. The accompanying story is designed to help readers of the Desert Magazine to become better acquainted with the various members of the Yucca clan.

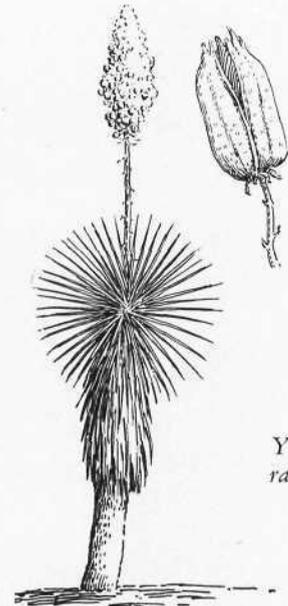
A Lily with Daggers

By FRANK A. SCHILLING

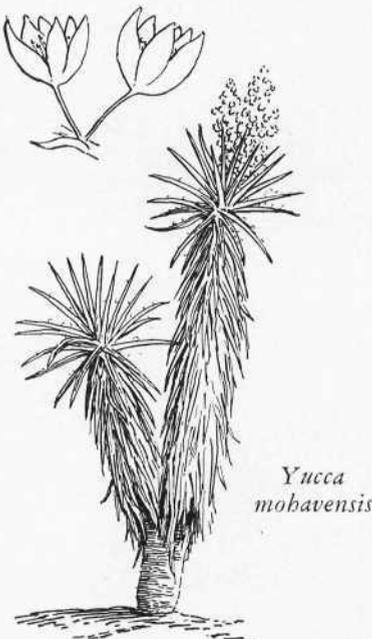
Drawings by Norton Allen



Yucca brevifolia



Yucca radiosa



Yucca mohavensis

ON their trips across the Mojave nearly 100 years ago the Mormon colonists were so impressed by the dignified beauty of a certain strange species of tree along the way they named it Joshua tree—a "sign" from heaven to weary travelers on their way to a new promised land.

These weird trees belong to the most chaste and one of the most charming of the floral families — the Lily family. Their ancestral fossils have been found in the rocks of the Tertiary period.

They are scraggly and grotesque, sometimes reaching a height of 30 or 40 feet, with dark brown trunk from one to three feet in diameter. The crown is open, with one or several contorted arm-like branches, having clusters of rigid, spine-tipped leaves, six to nine inches in length, and with the edges finely toothed.

Each season's leaves remain green several years. In time they bend down, close to the trunk, finally die and fall off. The bark of these trees is rather thick and cork-like, furrowed and checked. Young trees remain unbranched until they have produced flowers. The flowers, which appear from March to May, are greenish-white, and congested in heavy panicles or clusters, from eight to fourteen inches in length, at the ends of the branches. Although the flowers have a disagreeable, fetid odor, they were relished by the early desert Indians who used them as food.

The Joshua tree, botanically known as *Yucca brevifolia* Engelman, is widely distributed on the Mojave desert, extending to the easterly boundary of Kern county, northward to Inyo county, to southwestern Utah and into northwestern Arizona. It is also variably known as *Yucca arborescens* Torr.; *Cleistoyucca brevifolia* and *Cleistoyucca arborescens*.

The seeds were gathered by the Indians and ground into a meal, which was either eaten raw or cooked as a mush.

Several years ago an attempt was made to establish a plant to manufacture paper pulp from the wood of this tree, but owing to the excessive cost of manufacture, the enterprise was abandoned. Surgical splints and souvenirs are made from rotary-cut yucca veneer.

Yucca Whipplei

In the chaparral belt west of the main Sierra of Southern California and extending eastward to the land of the Cahuillas we find another species of yucca, *Yucca whipplei* Torrey, or the Candle of the Lord as it was affectionately known by the Spanish-Californians. It was also known as the Quijote plant. The plant has no trunk, and the slender lance-like leaves grow in a basal rosette. The creamy-white wax-like flowers are borne by the thousands in panicles, or large clusters, from three to several feet in length. During the months of May and June the hillsides are dotted by countless yuccas, sending aloft the white candle-like flower clusters, which increase in size from day to day, until finally the blossoms, having matured, wither and dry, leaving in their stead capsules containing numerous seeds which were formerly eaten by the Indians. The flowers were picked and prepared for food by boiling in water in ollas. The tender immature stalks, known as *Pan-u-un* by the Cahuilla Indians, were cut before flowering when full of sap and roasted in fire pits for several hours and then eaten.

Yucca Mohavensis

The Spanish Dagger, *Yucca mohavensis* Sargent, has a simple or short branched trunk, sometimes attaining a height of 12 to 15 feet. The smooth-edged, green-yellow leaves, conspicuously marked with thread-like fibers frayed from the borders, are from one to nearly three feet in length and concave. Like those of the other yuccas, the whitish flowers are condensed into compact pani-

cles from 12 to 18 inches in length. Spanish Dagger is found on the Mojave desert, southward through the Santa Rosa and San Jacinto mountains to northern Lower California. Its range extends eastward into Arizona and Nevada.

The Cahuilla Indians used the green, pliant leaves for binding ridge poles, side beams and rafters of their houses, and their name for the entire plant is *Nin-yil*. The fibers were extracted by soaking and basting the pliant leaves until the pulpy part and epidermal sheath were gone. They were then bleached by being buried in mud, after which the fibers were combed out. Thick foot-pads or sandals, also linings for the coarse saddle-blankets were made from these fibers. The root, called *Hu-nu-wut*, was grated and the scrapings used as soap. The green fruit was roasted over coals and eaten.

Yucca Radiosa

The deserts of Southern Arizona, New Mexico, Texas and Chihuahua are the home of another species—*Yucca angustifolia radiosa* Engelmann, which has a trunk sometimes from 15 to 20 feet in height. The gray-green leaves are narrow, from one-quarter to one-half inch in width, with narrow white margins. The white flowers are borne in panicles at the end of long stalks or spikes. *Yucca radiosa* is known as the *Palmilla* — "little date palm" — or Soapweed in Mexico, and the roots are termed *amole*.

Yucca Baccata

Another yucca, the Spanish Bayonet or Datil, *Yucca baccata* Torrey, very similar to the Spanish Dagger, inhabits the eastern part of the Mojave Desert, and ranges eastward to Colorado and New Mexico. The leaves, likewise, are yellow-green, from 15 inches to two feet in length, and grow in rosettes close to the ground. The flowering stem, from two to four feet in length, bears the whitish, waxy flowers in panicles similar to those of the Spanish Dagger. The seed pods, from three to five inches in length, were picked green by the Cahuillas and roasted in burning coals. The fruit is sweet, not unpleasant to the taste, resembling roasted green apples. The ripe pods are filled with big black seeds, filling the center in four rows.

Yucca Glauca

In northwestern New Mexico and northeastern Arizona another yucca is found—*Yucca glauca* Nutt.,—which also played an important role in the lives of the Indians of Pueblo-land. The slightly sweet seed-pods were boiled and eaten, the younger pods having been preferred. The seeds of the young pods were eaten. The pods were not combined with other foods and were never eaten warm. They said "they would not agree with the

stomach if taken with other food." The Zuni extracted the juice from the fruit by boiling and used it in the manufacture and decoration of pottery. The Navajo, Apache and other tribes also used the *Yucca glauca*, which was known by the Zuni as *Ho'tsanna*—"long-leaf small"—the leaves a little more slender and shorter than those of *Yucca baccata* which was known as *Ho'kiapa*—"long leaf wide." In years gone by the dried stalks were used in the making of fire drills. Hair brushes, as well as brushes for decorating pottery were made from the leaves and fibers of this plant.

Nolina

On the arid slopes of the mountains bordering the Colorado desert, and extending southward into Lower California and eastward into Arizona, we find a plant which is frequently confused with the yuccas, on account of its similarity. This is the *Nolina*, of which there are two species in California. *Nolina parryi* and *Nolina bigelovii*. Close examination reveals the fact that the flowers of the nolina are much smaller than those of the yuccas, being but a quarter of an inch in length and arranged in open compound clusters or panicles. The flowers of the yucca vary from an inch and a half in length to four inches, and are arranged in heavy panicles. Further examination shows that the leaves of the nolina, which are crowded in a rosette at the ground, are keeled, that is, the underside has a longitudinal central ridge, similar to the keel of a boat, while this feature is absent in the leaves of the yucca.

Of the various yuccas in the Southwest, the Spanish Bayonet was the most important in the lives of the primitive peoples. The Tewa Indians formerly made cord and rope from its fibers, which were extracted by boiling the fleshy leaves a short time, then chewing them when cool. Sandals, baskets, cloth and other artifacts were made from the fibers of the Spanish Bayonet by the pre-Columbian Basket makers and Pueblo people who inhabited the pit houses and cliff dwellings of Arizona, New Mexico and Colorado. Yucca fiber was combined with cotton in weaving, and the fur of beaver, otter, or rabbit was incorporated with it, or twisted around it, to make warmer or more ornamental fabrics.

A. F. Bandelier, pioneer ethnologist of the southwest, states that "fishing was done in former times (Cochiti in 1882) with long nets made of threads of *Palmilla ancha* (*Yucca baccata*). . . . The women . . . gathered the fruit in September and October, baking it until the skin could be taken off and the fiber removed, and then threw it into pots and mixed it thoroughly, boiling it alternately, until it came down to a firm jelly or paste." It was dried and later



eaten as paste, or it was dissolved in water and drunk; or *tortillas* and *guayabas* were dipped into the solution, similar to molasses or syrup.

The roots of the Spanish Bayonet provide an excellent lather, and before the introduction of the white man's soap were the only washing medium possessed by the Indians of the Southwest. The roots are bruised with a stone and placed in cold water to steep. A good lather is produced by stirring briskly and rubbing with the hands. The fibers are then removed and the lather is ready for use. The Hopi accompany all ceremonies of adoption and name giving of infants by washing with yucca suds. When Navajo, Ute and Apache scalps were brought to Hano they were washed with *amole*, or yucca suds.

Brushes made of yucca fibers are used by the Zuni Indians when painting designs on their pottery. Syrup of yucca fruit is added to the pigments which have been ground in stone mortars. These Indians also used various parts of the yucca in their religious ceremonies, and some asked to be whipped with yucca fibers to be relieved of their bad dreams, or for other various reasons. When used ceremonially, the fibers were prepared ritualistically. Yucca cords were used to tie prayer-plume offerings together before planting them to the gods.

Used in Mountain Chant

Among the Navajo, those who participate in religious rites bathe first in yucca suds and recite prayers. Dr. Washington Mathews, a physician who lived among the Navajo for two decades, graphically described the *Yucca baccata* dance of the Navajo Mountain Chant, in which yucca is apparently made to grow from a seed to a fully developed flowering plant in a few minutes.

A most interesting feature of the flowers of the yuccas is that they are incapable of self-pollination, each species being dependent upon a particular moth, or species of *Pronuba*. The female moth works at night collecting the pollen, which she rolls into a ball, and carries to the flower of another plant. She deposits her eggs in the ovary of this flower and then deliberately climbs to the style and thrusts the ball of pollen down the stygmatic tube. The eggs hatch, and some of the seeds of the yucca are consumed by the larva, but not enough to affect the perpetuation of the yuccas.

It is to be hoped that these interesting plants, which were of such economic importance to the Indians before the advent of the white man, and which add so greatly to the charm and pristine beauty of the desert, will not be entirely destroyed by the white man in his mad endeavor to develop the resources of the Southwestern deserts.

DESERT QUIZ

Here is a test for readers of the Desert Magazine who pride themselves on their knowledge of the Great American Desert. The following selective problems include geography, botany, zoology, mineralogy, history and Indian lore. They constitute a rather severe test of all-round acquaintance with the wide field of desert subjects.

Check the answer you think is correct and when you have completed the 20 problems turn to page 39 for the answers. If you get 10 of them right you are better informed than the average student of the desert. If you answer 15 of them correctly you are a genius, and if more than 15 you are entitled to a Fellowship in the Royal Order of Sand Dune Sages.

1—The lowest elevation in the United States is in Grand Canyon () Salton Sink () Death Valley () Ubehebe Crater ().

2—Chiricahua National monument is noted for its Indian Ruins () Scenic Caverns () Strange Rock Formations () Intense Summer Heat ().

3—Montezuma Castle is in Arizona () New Mexico () Old Mexico () Death Valley, California ().

4—In the botanical world Ocotillo is a Palm () Yucca () Fouquieria () Cactus ().

5—Hassayampa in Arizona is the name of a Mountain peak () Indian reservation () River () County ().

6—Hopi and Zuni Indians have gained exclusive renown for the making of Blankets () Pottery () Katinas () Turquoise Jewelry ().

7—The grave of Kit Carson is in Santa Fe () El Paso () Taos () Canyon de Chelly ().

8—Indians used Ephedra for the making of Dye () Intoxicants () Tea () Poison Arrows ().

9—Sidewinders more often are found in Caves () River Bottoms () Sand Dunes () Prairie Dog Holes ().

10—First Spanish explorer of record to see the Grand Canyon of the Colorado river was Garces () Cardenas () Marcos de Niza () Coronado ().

11—The native Washingtonia palm which grows on the Southwest desert is a Filifera () Gracilis () Sonorae () Robusta ().

12—Butterfield stages crossed the Colorado river at Ehrenberg () Needles () Picacho () Yuma ().

13—Highest peak in Nevada is Boundary Peak () Wheeler () Charleston () Pancake Summit ().

14—Desert tortoise is a Reptile () Fish () Insect () Rodent ().

15—Ancient Indians used an atlatl to grind Mesquite beans () Cultivate Maize () Kill Game () Sharpen Arrowheads ().

16—Indian signs incised in the rocks are properly called Hieroglyphs () Pictographs () Petroglyphs () Lithographs ().

17—"The Crossing of the Fathers" is in Nevada () Arizona () New Mexico () Utah ().

18—The crystals most commonly found in geodes are of Quartz () Calcite () Onyx () Dolomite ().

19—"The Wonders of the Colorado Desert" was written by Chase () Saunders () James () Wright ().

20—Boulder dam was built in Boulder Canyon () Grand Canyon () Black Canyon () Marble Canyon ().

With only the dim trails of ancient Indian tribesmen to guide them from waterhole to waterhole, Nina and Steve Shumway of the Coachella valley spent a summer vacation with pack burros exploring the Santa Rosa mountain wilderness of Southern California. This was in the days before the forestry service and Steve Ragsdale had brought civilization to the virgin timberlands at the top of the Santa Rosas - and for the Shumways it was an experience packed with thrill and enjoyment. Here is the kind of an adventure every outdoor enthusiast dreams about.

The big thrill of the Santa Rosa mountain trip for Nina Paul Shumway was the finding of an ancient Indian olla in one of the caves.



Burro-ing in the Santa Rosas

By NINA PAUL SHUMWAY

"VAMOS, Mike! Fall in there, Joe! Line up, Pete! Let's go!" Slowly, pack ropes squeaking, our Prospector Special—a train of three burros each laden with about 170 pounds of camp equipment and supplies—moved forward up the moonlit scar of old Torres trail.

It was a big moment. Steve and I were off for a month of exploring the high fastnesses of the Santa Rosas—that great, ragged arm of Southern California's coastal range, whose towering ridges thrust sharply into the Colorado Desert.

Behind and below us, cradled in the deep, dry basin of a prehistoric sea, the dunes and date palms of Coachella Valley were shrouded in a ghostly veil of summer heat haze. Ahead, naked rock

flung upward in mighty surges toward the dark, pine-shaggy shoulders of Toro peak more than 8000 feet above. Uniting these topographical extremes, that night of July 1928, were only such dim primitive trails as we were to follow. Today they are linked by the Palms-to-Pines highway with its branch road to the top of Santa Rosa; and the wild Valhalla we reached 11 years ago by arduous burro-ing, is now readily accessible to the modern motorist who is equal to a day's hike along the easy contours of the crest-line.

Our plan was to travel all night, gaining a more temperate elevation by sun-up. But moonlight is as tricky as the conjurer's art. The three burros, having only an onion field education, developed

phobias in the great open spaces and our brown aboriginal brothers had neglected their road work—had failed too often to lay a little stone on a big one as a marker at a strategic point. After two hours we gave up our game of hide-go-seek with that ancient trail, and bedded down in a gully where some memory of moisture kept alive tufts of coarse grass and a few stunted cottonwoods.

Crack o' dawn found us under way, breakfasting en route on bananas and hard boiled eggs. At the first sharp rise, Pete, our smallest burro, decided that his pack was too heavy, the grade illegal, and he didn't like this mountaineering, anyhow. We were still passionately pleading with him to reconsider, when the sun bounced up back of the Chocolate mountains, burst like a giant red shell spraying the slopes with flame.

There's a technique to running a Prospector Special. It consists simply of doing yourself what the burro refuses to undertake. On our own backs we carried that little rebel's pack to the top of the acclivity. Having found that our hearts

were in the right place, he cheerfully submitted to being re-packed, and never again on the whole trip did he let us down.

For the next eight hours we climbed. So did the sun. It waxed hotter and hotter. So did we. Only Dante could describe those desert walls in midsummer. The burros grunted and groaned at every step. Sweat poured off us caking our skins and clothes and boots with salt. I began to shiver under a too-high head of steam. At the boiler-bursting point we reached a saddle that a merciful Providence had left more or less free of rock. Here grew a discouraged juniper tree all of four feet high and one runty ocotillo.

It was a juniper tree, you may remember, under which Elijah had cast himself down to die when the angel came to his rescue. It was thus to me. My angel appeared as a little breeze brushing cool wings over my burning brow. Steve hastily concocted a palatial marquee from a four-foot square of canvas slung between the juniper and some stalks of ocotillo.

"I'm staying here," I croaked as I crept under it.

"Righto!" agreed Steve. "This is our first stop—Halfway Spring. Hope to heck it isn't dry."

It wasn't. There was no water visible, only a quantity of wettish green slime in a hole at the bottom of a little gulch among catsclaw bushes and bunch grass. But that's as good as Niagara Falls to a Prospector Special. When the fibrous

scum had been carefully removed, the loose gravel scooped out of the hole and its interior relined with a coating of the green slime to prevent the inflow from being sucked back into the earth, we had at our disposal in course of time, a pool that, by allowing it to refill, furnished water for man and beast during the thirty-six hours required to get my temperature and stomach under control.

Mike, who was my special charge, gave me a scare the morning we resumed our journey. We were barely under way when he went sprawling over a huge boulder. I expected him to fly into panic as a horse would have done. Instead, he lay contentedly on his belly, legs dangling, while he approvingly surveyed the fine view. Steve had literally to hoist him by the tail before he would make the effort to scramble to his feet.

I began to comprehend then something of burro psychology. He never wastes energy or raddles his wits by getting excited in the face of calamity. This discovery removed a lot of the strain of my inexperience in helping wrangle the outfit. Before our trip was over I had some proper estimate of the sagacity of this little beast and understood how and why the burro won name and fame as the Winner of the Southwest.

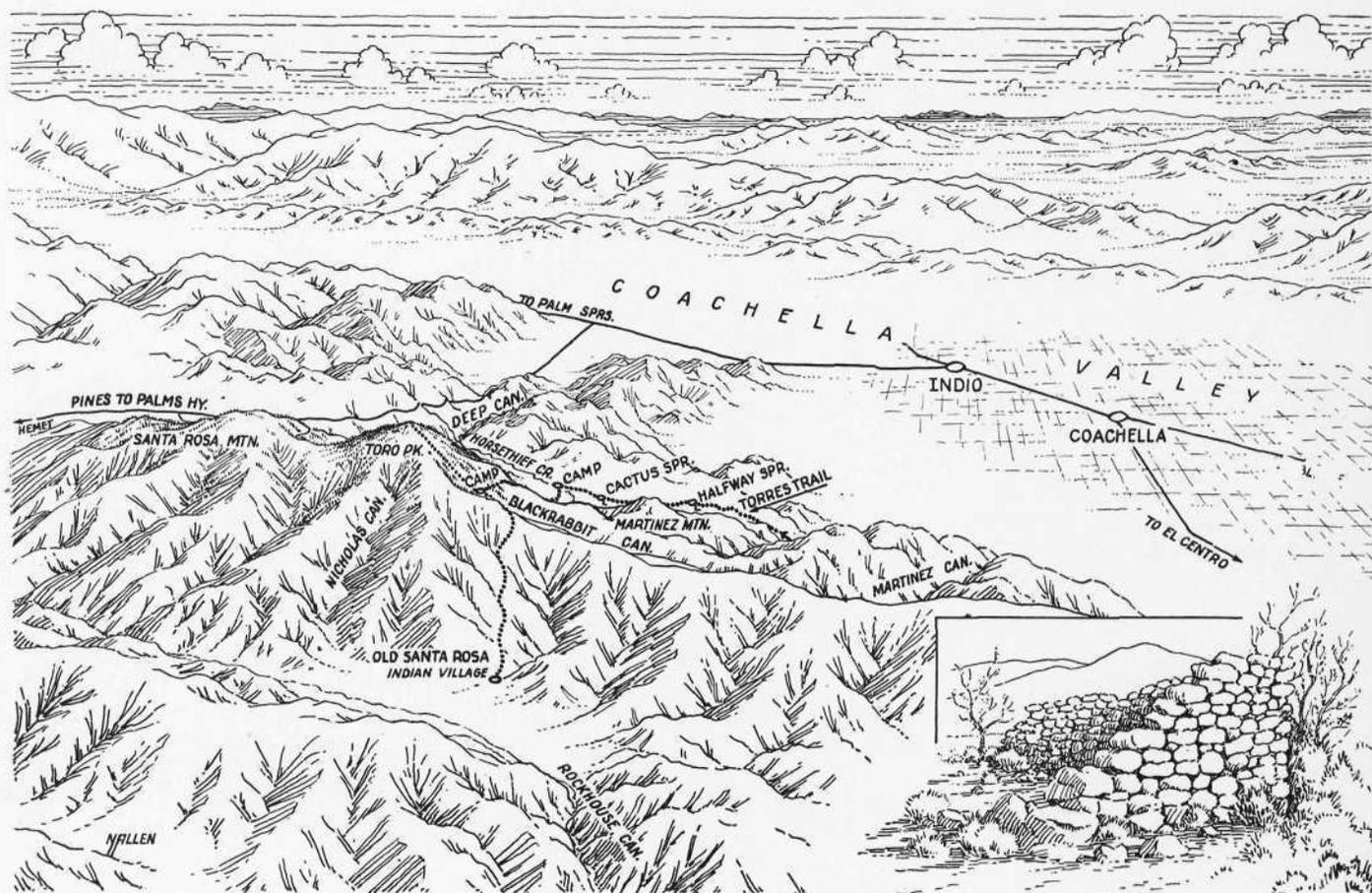
Dotted lines show the old Cabuilla Indian trails followed by the Shumways in their Santa Rosa mountain vacation trek.

About ten o'clock we entered the dwarf forest—that entrancing region where the desert growth mingles with that of the high mountains. Here juniper grew large and lusty, blossoming chamiso, or ribbonwood, swayed white plumes in the faint breeze, and piñons on sun-smitten slopes scented the hot air with piney fragrance.

Suddenly a delightful thing happened—a great white cloud enveloped us, supplying a moist, cool tonic that carried us buoyantly out of the torrid zone to the vigorous elevation of 5000 feet along the flanks of Martinez mountain. From here we swung down across Little Piñon flat to Horsethief creek, a clear, sweet perennial stream by which we pitched our first real camp in a clump of alders.

It is said that in early days an organized gang of horse thieves working back and forth from the coast to the newly opened gold diggings along the Colorado, used this lovely retreat as a way-point in their nefarious trade. But unless they invented as good an ant paste as we did (ours was composed of permanganate crystals taken along in case of snakebite, crushed in Crisco) I don't see how they survived a night on that crawling carpet of dead leaves.

After a lot of clearing and smearing, we put in a blissful week exploring, prospecting, hunting Indian relics. Smoke blackened caves, pits of charcoal where the hearts of agave stalks had been roasted, deep grinding holes in the boulders, pots-





Steve Shumway—chief engineer of the Prospector Special. Steve believes that when a man is in a primitive country he should follow the customs of the primitives—and so he left his razor at home.

original inheritance. Here in primeval, sun-sweetened solitude he rests, or roams, content.

A day's jaunt up Toro Peak (elevation 8,705 feet) put us "on top of the world". The vast ranges of California, Arizona, Mexico, boiled up like iridescent bubbles on the stupendous, shimmering expanse of desert. Off to the west the Pacific appeared as an argent streak in the heat haze. Only to the north was the far sweep of vision balked by the crags of San Jacinto towering 2000 feet higher than "The Bull's" horns.

As we swung down from the flanks of the peak onto the flat, Steve, who was ahead, registered excitement and signaled for a quick stealthy approach. As I reached him a thrill zippered along my vertebrae. There, not thirty yards from us, in a little open area, was a big mountain lion. So leisurely was he that we might easily have taken a snapshot had either of us thought of the camera. Instead we gazed transfixed until His Majesty the King of Catdom padded across the opening and disappeared behind an outcrop of rock. Then we closed our gaping mouths and groaned, "Boy, what a picture!"

Another memorable expedition took us to the ruins of old Santa Rosa Indian village on the southwestern side of the range. For this one-night stand we shouldered a blanket apiece, a cooking pot, and a little grub, leaving the burros

Continued on page 21

herds and artifacts, marked this area as a favorite with the aborigine. As the delicious climax to every hike, we soaked luxuriously in a clear deep pool owned by a little water snake that looked like a quarter of a yard of yellow and black striped ribbon floating on the leaf-studded surface.

Steve spent the last few days in cutting trail up to Blackrabbit creek 2000 feet higher. Then, late one afternoon, we broke camp, left part of our duffle behind on an antproof trestle under a waterproof tarp, packed the balance onto the three burros, securing it with the lurid language essential to a slip-proof diamond hitch, and set off up the tunnel Steve had hewn through the chaparral.

For our night's bivouac we chose a little saddle that slid off on one side into Horsethief and on the other into the upper reaches of Martinez canyon. As we were enjoying a particularly soulful sunset and drinking our round of tea, a big tarantula-hawk—one of those outsize blue orange-winged wasps—came scurrying through our quarters, lugging a monstrous hairy tarantula. The speed at which she moved with a burden a dozen times her own size, was incredible. And when she came to my bedroll she raced right up over it without a pause. There was something fiendish in her frenzied haste to get her eggs laid in the paralyzed body of that hapless spider destined by a deadly maternalism to become living food for the young wasps as soon as they were hatched.

The route of Steve's trail from here on was the shortest distance between two given points, up an outrageous acclivity strewn with loose shale. With that dirty bit of Alpineering staring us in the face, breakfast was only a gulp and a gurgle. The burros were disgusted from the outset, and required constant cajoling. Mike, whom I was leading at the head of the string, kept up a ceaseless rumble of burro profanity. About half way up, on the steepest stretch, he mutinied, decided to cut out this rough stuff. Down he started, dragging me along at the end of the lead-rope. All I could do was to shout protests and move my boots fast enough to keep them between my face and the mountain. If Steve hadn't darted to the rescue, Mike and I would probably have taken a short cut down the range to the onion rows of Coachella valley.

Blackrabbit, however, was worth any number of such furious scrambles. Even Mike had tacitly to admit it as he gorged himself on the rich grass of a mountain meadow among spreading oaks, giant pines, towering cedars. This watered, wooded little valley, with the tree-pillared park-like spaces of Alta Seca flat a thousand feet above it, gives back all that might seem to have been lost of man's

When Margaret Lewis was sent to the Indian school at Riverside she could not carry a tune well enough to sing in the girls' glee club. That was several years ago. Today musical audiences from coast to coast have heard the brown-eyed Zuni girl render her "Blanket Song" and "Indian Love Call." Margaret is a silversmith by trade—one of the best in Zuni pueblo. Here is the story of an Indian girl whose character is as fine as her voice and her silverwork.

Margaret Lewis

---singer and silversmith

By MRS. WHITE MOUNTAIN SMITH

IN a brown 'dobe village at the foot of Thunder mountain is the New Mexican Indian village of Zuni. Day ends in that village when the sun drops down behind the basalt cliffs fringed with fragrant juniper.

But out close to the Pacific ocean soft flood lights of Hollywood Bowl bathe a figure that might have stepped from the lyrical pages of Hiawatha—a brown-eyed Zuni girl singing to an enthralled audience there under the stars. She sang Cadman's "Land of the Sky Blue Water," and "Pale Moon," and then dropping into the melancholy cadence of her own tribal tongue, the pure mezzo-soprano voice crooned the "Blanket Song" of the Zunis. And even blase Hollywood held its breath.

From there across the continent to Atlantic City this Indian girl journeyed to add her voice to the dedication of the Eternal Light that burns steadily year by year, a monument to one of our greatest inventors. This time "By the Waters of Minnetonka" was her song, and when the crowd clamored for more she sang "Indian Love Call." Thousands of her listeners had heard famous white singers render that song on Broadway, but never as it was sung by untutored Margaret Lewis (Laughing Eyes), Zuni girl. And again she ended the evening with her own beloved "Blanket Song." That song sung to her a thousand times by her own mother always brought her close to her homeland.

While Old Zuni was washing its face and making itself generally presentable for the yearly visit of the Shalako—Gods of Blessing, I sat with Margaret in her low ceilinged whitewashed home. Above our heads the great smoked and seasoned logs supporting the roof spoke of the two centuries that had passed over that home since her forefathers brought the heavy timbers from far away mountains.

"How old is this house, Margaret?"

"I do not know for sure, but it is one of the oldest in the pueblo. I wanted to tear it down this year and have a new house for the Shalako to visit and bless, but some of the old people came to me and said No! It was lived in by my great-



Margaret Lewis — Zuni songbird

great-grandfather, and it was an old house before it came to him."

The deep-set windows look out on the bleak graveyard of the ruined Mission whose gaunt walls are still defiant of time and elements. How many things must have happened within those walls that the Christ taught not to his followers. Coercion of sullen Indians who felt no need of foreign gods; death cry of martyred priests during the Zuni rebellion, and, later, hanging of native witches on the great carved beam above the altar—these are some of the happenings connected with this ill-fated Spanish church.

Happier scenes are across the court. Chattering like children two white-haired women are giving their house a coating of plaster in honor of their expected gods. With their blunt brown hands they swiftly spread the mud over perhaps half a hundred coats applied by other busy hands now at rest in the mission graveyard. In the center of that yard a weather-beaten cross bears the words: "Give them rest and Peace, O, Lord!"

What could be more peaceful than this ancient town making ready to receive and honor its own native gods? Each year these grotesque figures, ten feet high, and dressed in all the feathers and finery obtainable, come clacking to the riverside from their sacred Thunder mountain, and then at dusk, escorted by dancing, chanting priests they enter the village and

bless every new house that has been built or remodeled since their last visit. They bless the harvested crops, and the new babies, and the brides and grooms, and they feast and visit and shower happiness and goodwill on their chosen children until dawn breaks in the eastern sky. Then, with outlandish clacking of wooden bills and strange whistling sounds they disappear down the trail to the river, and no good Zuni watches which way they go. Of course, everybody knows they retire to Thunder mountain to watch over the destinies of the people until another year has rolled away.

Zuni has been in the ears and eyes of the world since that day when Coronado swaggered to its gates clad in his golden armor and demanded surrender in the name of the Spanish King, and as an after thought—God! That golden armor was somewhat dented and out of shape before the sun set, and the Zuni had not surrendered, but their towns were captured and sacked, and from then on they were unwilling hosts to every ambitious Spanish invader who came into the New World. They turned the tables in 1680 and in a short-lived revolt exterminated the priests thrust upon them by the Spaniards. To this day they are not effusive in their welcome of the "Long Coats." As Margaret so simply said, "The Catholic religion was brought to Zuni by force."

The Zuni people have always been friendly to Americans. Kit Carson loved to linger in the quiet sleepy Indian town, while he and his trapper companions rested from their long journeys into Mexico or California. Sitgreaves and Simpson and Emory and Whipple all stopped there enroute across practically unknown Arizona. Ives regretted that he and his men were kept away from the village on account of smallpox which killed the Zuni Indians by the scores. One can stand on a housetop there in the sunset and see in fancy's pictures Lieutenant Beale riding into the village on his favorite dromedary "Seid," while the herd of camels scattered over the valley followed by bewildered Indian urchins. In Zuni, Lieutenant Beale purchased thousands of pounds of shelled corn and loaded the camels with it that the horses and mules of

Margaret Lewis and her Zuni chorus. These singers appear annually at the Intertribal Indian ceremonies at Gallup, New Mexico. Photo by Frashers, Pomona, Calif.



his wagon train might have plenty of food on their way to the Colorado.

Yet how little trace footsteps of all these invaders have left in the winding streets of the village. Neither Spanish soldier, chanting brown-robed priests, buckskin clad trappers or American troops bent on explorations have altered the daily life of the Zuni. They plant their fields and till them, they harvest the grain and thresh it. They hunt and dance and feast and sing. They carve sacred fetishes and give them turquoise eyes and use them in their ceremonials. The women turn the rabbit feet salvaged from the hunt into cute beaded dolls and sell them to curio stores.

And home to this beloved village comes Margaret Lewis each year when her tour of singing engagements is ended, and she brings into her peaceful living room the bench and anvil of her trade. She is not content with being a famous singer, she is also a silversmith, one of the best among the women of Zuni.

Silverwork of the Zuni Indians is beautiful. It is dainty with minute turquoise. It is appealing with its airy fanciful designs and priceless with the wealth of detail and loving labor expended upon it. Zuni silverwork finds its way into every market where Indian crafts are sold. At least half of the work sent out from Zuni is that of women.

Margaret Lewis has combined the natural business sense of her Cherokee mother with the skill and artistic nature of her Zuni father, and the result is something unusual. She does not sit in the Indian town and wait for the world to find its way to her door. She takes her marvelous voice, her silver-making tools, her three children and goes out to win her own way. Each spring she journeys to The Dells, up in Minnesota among her Winnebago kin, and all summer long she works at her bench filling orders for bracelets and rings, pins and necklaces while her bewitched customers watch her with unflagging interest. In the evenings she sings at the campfire gatherings.

"Why did you become a silversmith?"

"I always loved to watch the old men working with silver and turquoise when I was a child. Sewing beads on these rabbit foot dolls as most of the women do is slow work and

not very good pay. Besides there is something about a finished piece of silverwork that is like a beautiful song."

She uses the square ounce slugs of pure silver for her work and hammers and pounds it out flat, then shapes it into whatever she wants to make. After designs are stamped in with the hand dies, she puts in as many turquoise gems as the mounting requires. Sometimes she cuts and polishes her own turquoise if there is a particular size or color she needs for a certain ring or bracelet, but mostly she buys the semi-precious stones ready for use from men who own and work the turquoise mines.

"When I am alone I sing to myself as I work. The soft blue turquoise always makes me think of Cadman's 'Land of the Sky Blue Water.'" A thousand miles from home this Zuni girl works for strange white tourists and sings away her homesickness.

"Do you know Mr. Cadman?"

"O, yes. We are great friends. One night he had a box at the Gallup ceremonial and that night I sang his songs. When the crowd had gone he came and asked me to sing other songs for him, and since then we have always been friends."

Thousands of visitors to the Gallup ceremonial have listened to the strong sweet voice of Margaret as she leads the 12 Zuni maidens, water jars balanced lightly on their heads, into the light of the campfires, and sings. The girls join her in the last selection — "Zuni Blanket Song." Lieurance, who wrote the haunting "Waters of Minnetonka," brought a recording machine to Zuni and made a tone picture of her singing his favorite composition. And Carrie Jacobs Bond hopes to leave with her a song that will be sung by both Indians and whites.

"Tell me something about yourself," I pleaded, sitting there beside her as she fastened a blue stone into its setting.

"My mother was born in Oklahoma. She had some money from the Indian lands there and wanted to use it helping other Indians. She went to school and was trained as a teacher, then she came to Zuni to teach and after awhile fell in love with my father and they were married." She paused. "My father died not long ago and we refused to bury him across there in that cemetery. He would not have rested well there where so much strife and unhappiness has been. The old people were horrified because mother put him elsewhere. What do you think?" I thought it was too bad there were not more Indian women with as much common sense as she has.

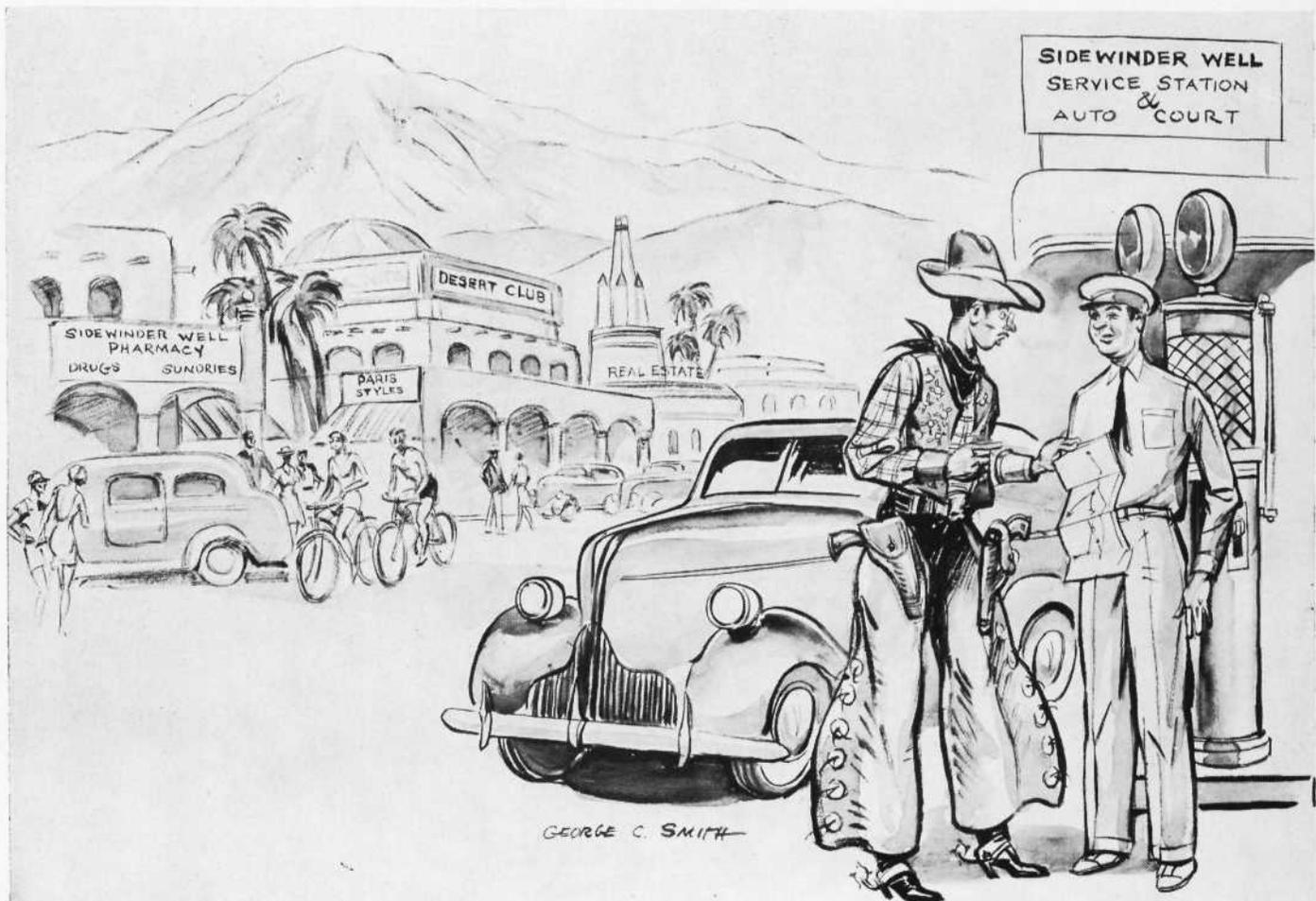
"I was born here in Zuni and I grew up loving the Harvest Dances and the rabbit hunts, and the melon feasts and most of all, Shalako, so I felt badly when I was sent away to California to school. I always came back when I could. Do you know while I was in school in Riverside I couldn't carry a tune? I was never allowed to sing with the choir or the glee club or be in any of the singing plays because my voice would get away from me and make the funniest sounds before I could catch it again!" She laughed but there was a little feeling of pity for the Zuni girl who loved music so much and was barred on account of a "voice that ran away." A brother lounging beside the corner fireplace spoke up.

"One day after she came home, all at once she began to sing a song and we've never been able to stop her since then."

"Where did you study music after that?"

"I never had a lesson. I can't read music. I just hear a song and then I sing it." But the government keeps asking her to go to Indian schools and teach children to sing. "They'd soon learn that I don't *know* how to sing. I just sing. And besides if there's a song in the heart it will come out."

So she stays in the great-great-grandfather's old house and works as a silversmith.



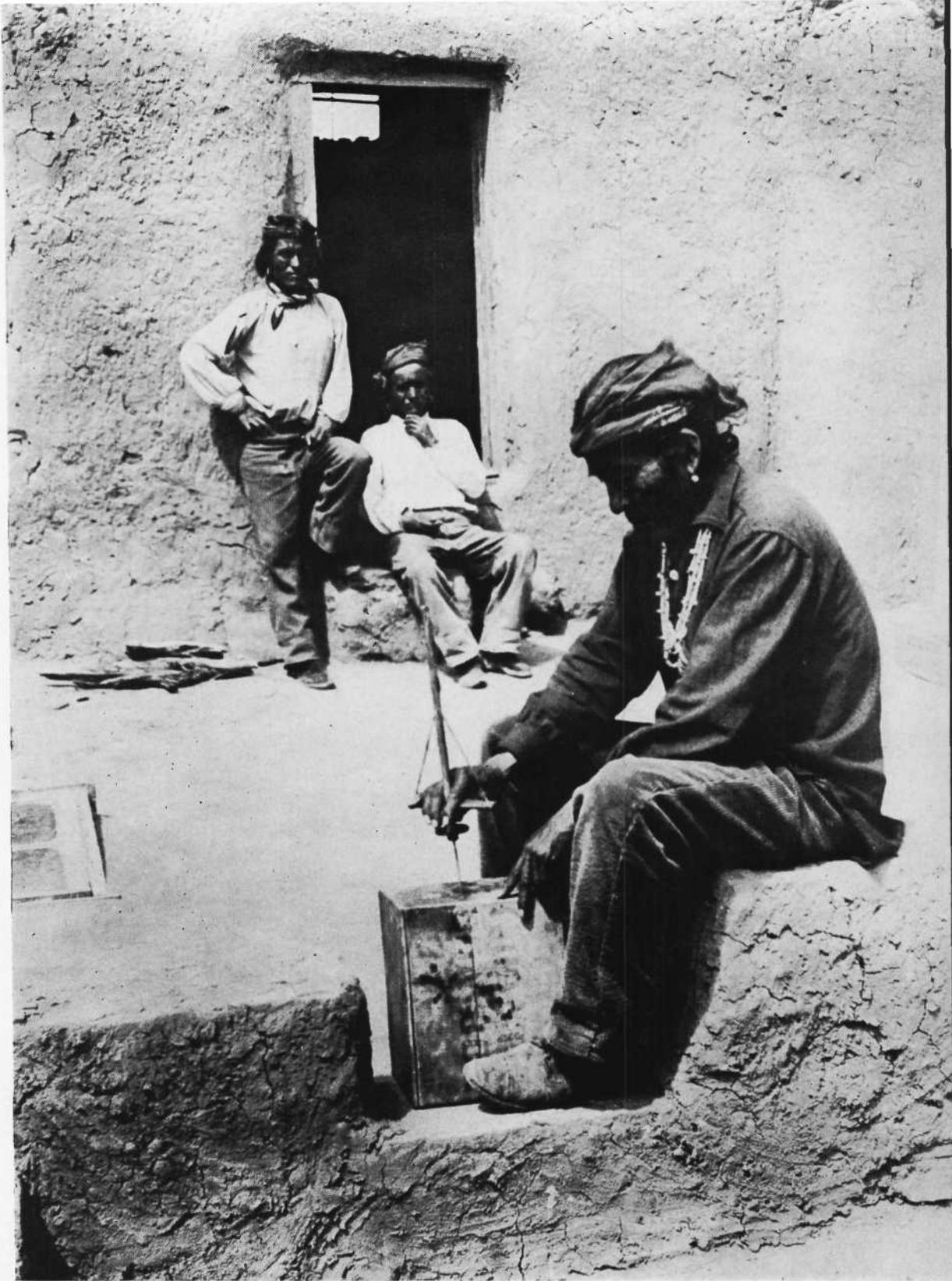
But - er - I really expected to find more of the old west atmosphere . . .

By GEORGE C. SMITH

"Feel" of the Desert

"PATIENCE"

Photo by W. M. M.
PENNINGTON



By JOHN STEWART MacCLARY

*I*N museums you probably have seen prehistoric eardrops and beads of turquoise which once adorned ancient Southwestern Indians. "How in the world could Stone Age craftsmen pierce such tiny holes in brittle stones?" The question is natural. The answer is simply amazing—and amazingly simple:

The holes were bored by reciprocating drills operated by hand!

When you visit Zuni—if you are lucky—you may see a bead-maker actually using one of these drills of ancient design. Ancient? Well, old enough that fragments of similar tools have been unearthed in Cliff Dweller

pueblos. If you share my degree of good luck, you may even be able to buy one of the tools from the workman who is using it.

How does it operate? The drill bit—formerly of stone but now a remodeled small rat-tail file—is fastened in the lower end of a smooth round stick of wood. The stick passes through a wooden cross-bar which is attached to it by buckskin thongs. The thongs are wound around the wood and when the cross-bar is pressed down the drill-bearing upright rotates. The skillful user knows when to ease the pressure so the thongs again wind around the stick and the pressure is repeated. It requires tireless patience.

This month John Hilton takes the gem collecting hobbyists on a trip into Arizona where an interesting field of colored agate is located not many miles from Phoenix. Hilton not only found some choice stones on his Arizona excursion but made the acquaintance of a number of enthusiastic collectors who have their own mineralogical society. Other Arizona gem fields will be mapped and described in future numbers of the Desert Magazine. Ed P. Matteson, Phoenix collector and dealer who accompanied Hilton on his trip is shown here with specimens of Maricopa Agate.

Maricopa Agate

--in Arizona

By JOHN W. HILTON



MANY letters have come to me during the past year inquiring about gem fields in Arizona, New Mexico, Utah and Nevada, and "putting me on the carpet" in a mild sort of a way for limiting my gem stories in the Desert Magazine to California fields.

I have known all along that some of the finest collectors' fields in the Southwest were located in these other states, and it has been a matter of genuine regret that pressure of other duties has prevented me from making extended trips into these more distant areas.

However, the opportunity came during the past month to accept a long-standing invitation from the Arizona Mineralogi-

cal society to visit Phoenix and make side-trips into some of the fields in the central part of Arizona. Similar trips are planned for Utah and Nevada during the next few months.

At Phoenix I found a splendid mineralogical society meeting each week in the Arizona museum. Under the leadership of A. L. Flagg and other fine collectors the society has a growing membership of enthusiastic "rock hounds." Also, they are within easy traveling distance of some of the most interesting

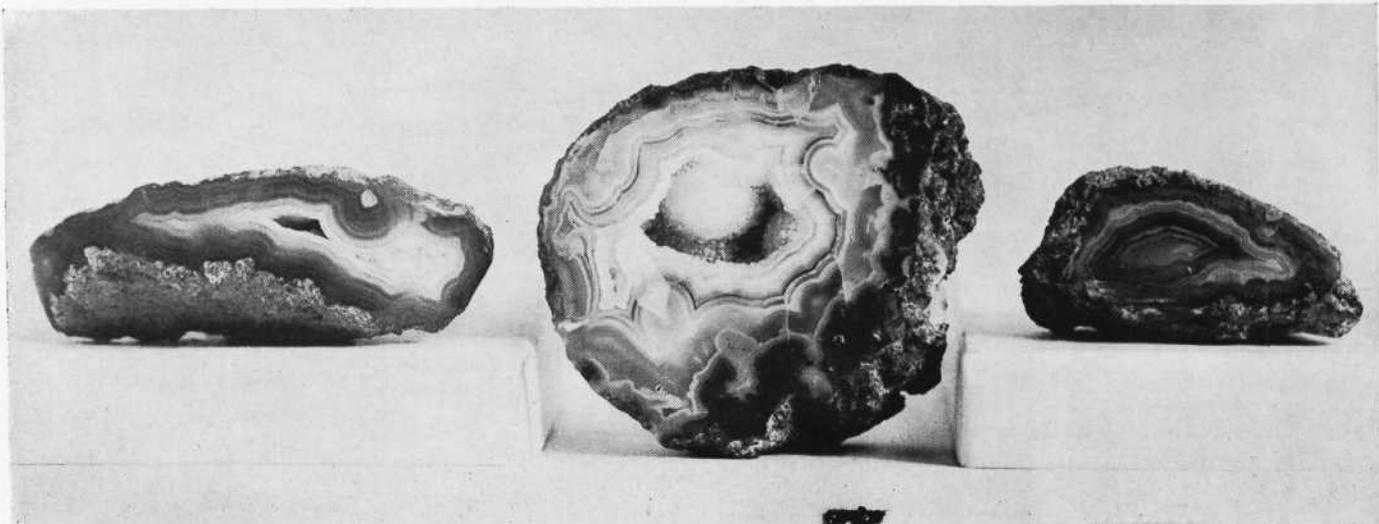
Geodes from the Maricopa agate field show beautifully banded coloring, mostly in red shades and white.

fields in the entire Southwest. Gem hobbyists in other communities could learn much from this group of Arizona collectors. They know their rocks, and they are cordial hosts and companions.

In Phoenix I called on Ed. P. Matteson who is both a collector and a dealer in semi-precious gems.

Several months ago he sent me some beautiful samples of agate, known locally as Maricopa agate. I wanted to visit the field where this lovely material was found.

We spent an evening at the Matteson home and left early in the morning for the hills north of Phoenix. From the center of the Arizona capital we drove north



to Sunny Slope and then northeast to Hyatt's camp where the paved road ends. Here we turned north again through what is known as Paradise valley. To those who have not yet learned to see the real beauty in the desert, this valley would appear to have been misnamed. But to a botanist, in the spring of the year when it is carpeted with wildflowers, it is truly a paradise. The predominant plant form, as in many other parts of Arizona, is the Saguaro or giant Arizona cactus. It gives character and interest to the landscape wherever it is found. Its weird arms stretch toward the sky like giant sentinels sent to earth from another world.

At the point where the road to Cave creek dam takes off on the left, we veered to the northeast on the Cave creek camp road. Approaching the mountains we could see the dumps of an old mine far up on the hillside.

Matteson told us this was the historic Mormon Girl mine, abandoned many years ago. Fair specimens of copper ore are still obtainable at the old dump.

Presently we came to a left turn marked "Bud Miller's ranch" and following it a short way we crossed Cave creek wash. Here bedrock is exposed and has been worn smooth by the action of water and gravel. The rock is "pudding-stone" or conglomerate, consisting of the harder materials of an old sediment worn to smooth pebbles and re-cemented into mosaic patterns of many colors and forms.

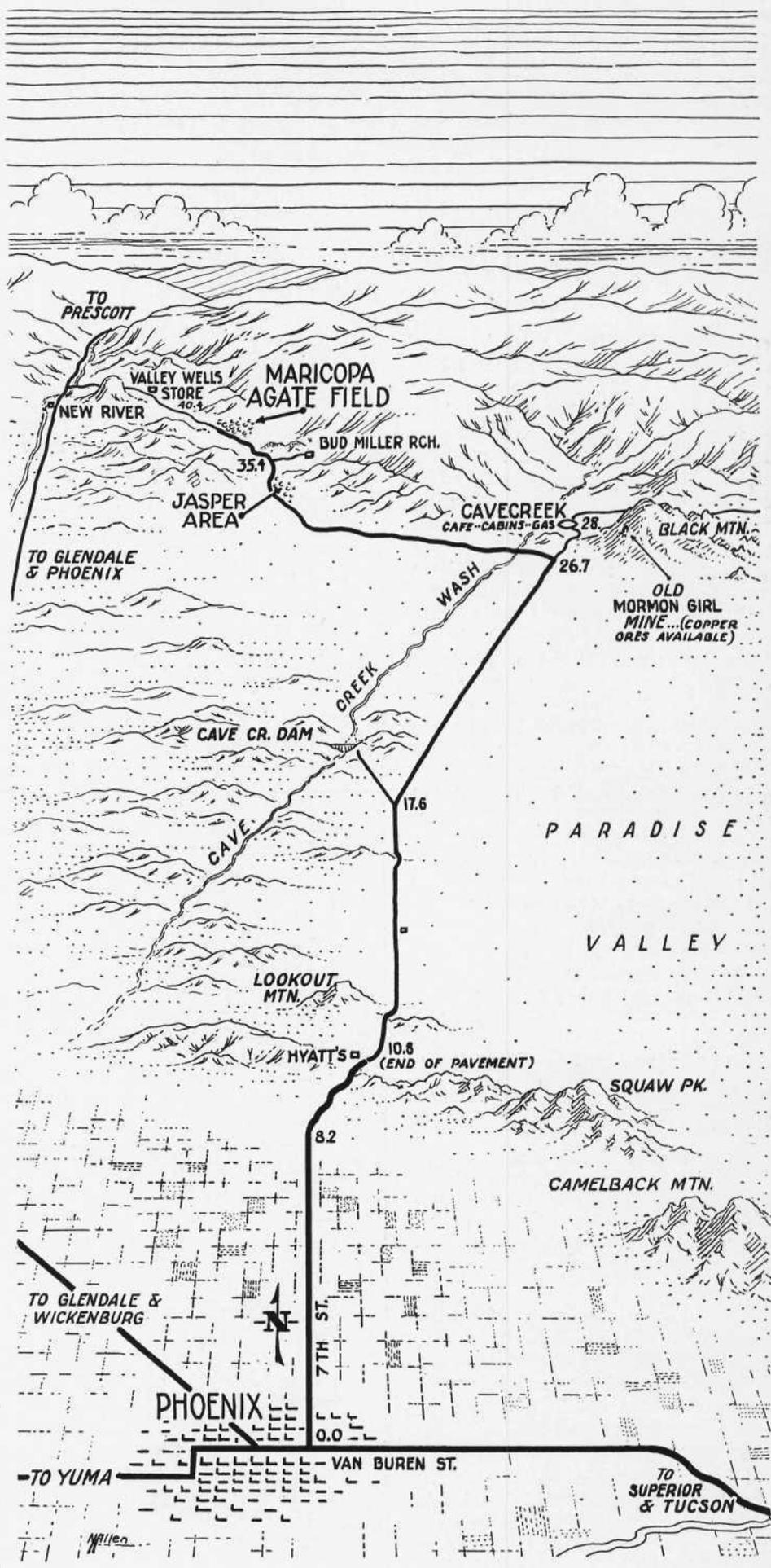
Our road had swung around to a westerly direction, and while it did not appear to be taking us to any particular objective, Matteson assured us that in this case "the longest way around" is the shortest distance to gem material.

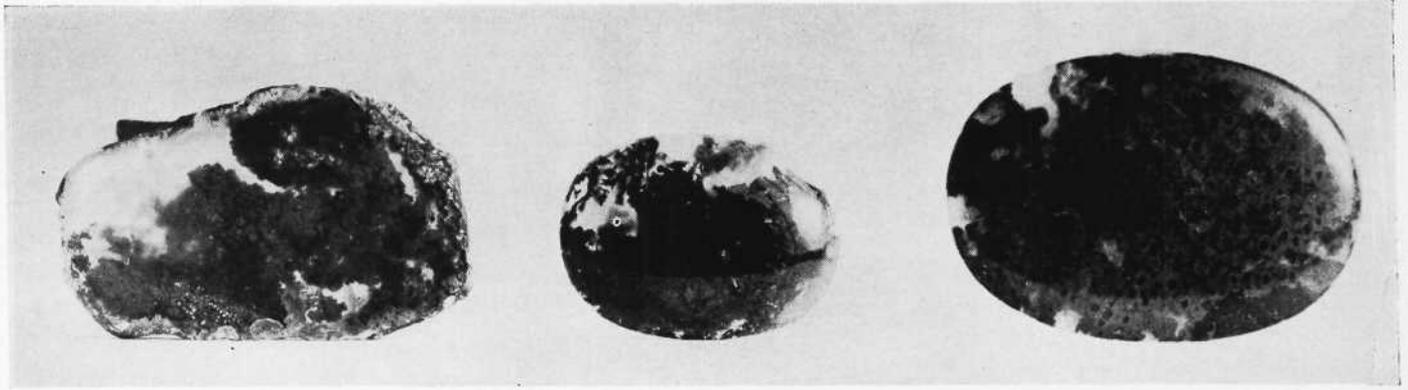
As we neared some hills the giant cacti became thicker and the hook spined barrel cactus began to appear. We also saw some of the slender branched Opuntias which have the peculiar trait of forming blossoms on matured fruit until there are actually three or four layers of fruit in various degrees of ripeness in a single cluster.

Gradually the character of the float began to change and bits of bright-colored jasper appeared along the roadside. Leaving the car we found the desert floor sprinkled profusely with this striking gem stone.

Since jasper and agate are closely related members of the quartz family we soon discovered specimens of both minerals. Reds and browns dominated in the jasper with occasional spots of yellow or olive green. Their color appeared to be due to the presence of various iron compounds and in some instances the metallic content was so high as to render them unfit for gem cutting purposes.

A large percentage of them were stones





Here are cut and polished stones from the Maricopa field showing the moss-like intrusions which occur in some of the material.

of cutting quality, however, and some of the bright reds were as pretty as I have seen anywhere. We found a few small pieces of orbicular or "flower jasper" but this much-sought stone was not common. It is identified by countless tiny spheres of brown or black jasper imbedded in a bright red background, and when cut presents a birdseye pattern that is most pleasing.

These jaspers are accompanied by a greenish hornstone that is about the color and texture of many of the Aztec carved stones found in the ruins of Mexico. Most of this material is too gray to be desirable for gem stone purposes, but we found a few specimens of an apple green color which would be attractive polished.

This deposit of jasper extends over a mile along both sides of the road and appears to be weathering out of the mountain slopes on the east. Since there was an abundance of good jasper close to the road and our time was limited we did not climb the hills to determine the source of the float.

We continued on the main graded road through a scenic area until our guide asked us to stop along a low hill which appeared to be of gray limestone. Close inspection disclosed that it was a light colored andesite with agates and chalcedonies of almost every description weathering out in large quantities.

Unlike most desert agate deposits this material is not found in round or egg-shaped geodes. The cavities in which the crystalline substance occurs are narrow fissures, giving a flattened form to the nodules. At the juncture of two or more fissures the forms are apt to be angular and irregular.

Some of these angular crystal cavities are thin walled with brilliant interiors and make excellent specimens, especially if they are gouged out from below the surface and have not been cracked by weathering agencies.

Although there are both solid colors and banded agates in this deposit the most interesting type is that found with mossy inclusions, and this is the form that has been given the name "Maricopa agate." This really is a clear chalcedony

and is usually found in small slabs with the "bubbly" or botryoidal surface on the exposed side and the bright colored moss penetrating from the side next to the wall of the fissure.

The mossy inclusions of colored agate or jasper resemble seaweeds or feathers in form. Their colors range from red to yellow and brown with occasional greens and blacks. When polished they produce gems that any collector would be proud to own. Due to the nature and extent of the deposit it is evident that collectors will find this a fruitful source of attractive gem material for many years to come.

On the return trip we took a brief side-trip to Cave creek camp where we found

excellent food and cabin accommodations at reasonable rates. This place offers a satisfactory base for those who wish to spend more than a day in the vicinity.

If this day was a sample of what Arizona has to offer to gem collectors I am ready to concede that this state provides some of the most attractive opportunities in the entire Southwest for those who know and love beautiful rocks. And in behalf of the Arizona collectors I want to add that my contact with them was most pleasant. To those who have a genuine interest in the collecting hobby the Arizonans take a sportsmanlike attitude which might well be copied by hobbyists everywhere.

April and May are the Best Camera Months on the Desert . . .

This is the time of the year when amateur photographers have their best opportunity to go out into the scenic areas of the desert and secure unusual pictures. Flowers are in blossom, beautiful cloud effects are frequent during April and May, and the air is clear for long distances.

Every month the Desert Magazine offers cash prizes of \$5.00 and \$3.00 for the first and second place winners in a photographic contest for amateurs.

Pictures must be limited to desert subjects, but there is a wide range of possibilities — landscapes, canyons and rock formations, Indian life and crafts, close-ups of plants and animals, character studies, in fact any picture that belongs to the desert country.

Entrants in the contest are urged to give careful attention to the lighting and composition of their shots. Strong contrast is

necessary for good halftone reproduction, and since this contest is designed primarily to secure pictures of extra quality for the Desert Magazine, high-lights and shadows are especially important.

Following are rules governing the contest:

1—Pictures submitted in the May contest must be received at the Desert Magazine office by May 20.

2—Not more than four prints may be submitted by one person in one month.

3—Winners will be required to furnish either good glossy enlargements or the original negatives if requested.

4—Prints must be in black and white, 2½x3¼ or larger, and must be on glossy paper.

5—Pictures will be returned only when postage is enclosed.

For non-prize-winning pictures accepted for publication \$1.00 will be paid for each print.

Winners of the May contest will be announced and the pictures published in the July number of the magazine. Address all entries to:

CONTEST EDITOR,
DESERT MAGAZINE,
EL CENTRO, CALIFORNIA.

"PICKIN'
DAISIES"

Painting
by
Marjorie
Reed



She Roams the Desert Range in an Old Jalopy . . .

By RANDALL HENDERSON

Three burros were plodding along a rocky trail in the early morning hours near the Everett Campbell ranch in the Vallecito region of Southern California. "There's a picture for you," exclaimed a slender girl who had left the ranch house a few minutes earlier to glory in the desert sunrise.

Several days later every detail of the scene had been reproduced on canvas with remarkable accuracy. The young lady who saw the burros and recreated them with brush and oils was Marjorie Reed, youthful artist of Palm Springs who was a guest at the Campbell ranch a few days last spring.

Miss Reed caught only a momentary impression of the pack animals on the trail. But no detail of the setting was overlooked in her finished painting.

Her friends say her mind records pictures with the speed and accuracy of a camera. And that is one of the reasons why Miss Reed has had such success in the painting of pictures in which horses in action are the central theme. Bucking ponies do not pose for artists. They do not have to do so for Miss Marjorie. She sees them in action, and then in the quiet of her Desert Inn studio she paints what she has seen with uncanny skill.

Miss Reed is just a wee mite of a girl, unassuming yet tremendously in earnest in her work. She is only 24 and has been at Palm Springs but two seasons—and yet her creations have been a sensation among patrons of art at the desert village.

"Why I've been drawing horses since

I was three years old," is the simple explanation when Miss Reed is asked how a little girl from a big city could learn so well the flexes and reflexes of a range animal in action.

Art has always been a leading topic in Marjorie's home. Her father, Walter S. Reed is a commercial artist in Los Angeles, with high standing in his profession. He came to California in 1927 from Springfield, Illinois, where Marjorie was born.

In Glendale high school Miss Reed majored in printing. It was not until after she left preparatory school class rooms that she gave serious thought to following the profession of her father. Then she studied for a year and a half in the Jack Wilkinson Smith studio in Alhambra, California. First she worked on landscapes. Then one day she saw a camera picture of her instructor on a camping trip with a pack horse. She reproduced the picture in oil and the result was so realistic Smith urged her to concentrate on animals.

Two years ago she drove to Palm Springs alone in an old jalopy — and immediately fell under the charm of the desert. Her only companion is "Boy" a big Alaskan Husky dog who rides on the seat beside her. These two pals come and go over remote desert trails with all the assurance of a couple of desert prospectors.

Recently Miss Reed has been making a special study of the old stage coaches which carried mail and passengers across the Southern California desert before the

BURRO-ING IN THE SANTA ROSAS . . .

Continued from page 13

behind comfortably picketed in their pasture beside the creek. From the top of the ridge the dim Indian trail turned a thousand-foot somersault down the slope in less than a mile. I felt like Humpty-dumpty when we landed among the ancient remains in old Nicholas canyon. But the sight of potsherds and artifacts mingled with the more modern litter of the trader epoch, among the crumbling rock walls, served to put me together again—in fine condition for riding my hobby.

For a few glamorous sun-glazed hours we scoured brushy steeps in a vain search for bits of primitive plunder to add to our treasured store. Night came as it had come how many million times to that tiny aboriginal village. Tea and a little—how precious little—food, by the weird flicker of a small fire. Did the brown people feel like this when the hunt failed—wary, dejected, gaunt? Almost we could see dark faces peering at us from the shadows. Almost we could hear the voice of a vanished race in the husky whisper of the warm wind.

This was the veritable end of our trail; the rest was back-tracking. After our return to Blackrabbit we lingered for a few days of farewell, loath to leave its glories. Again at Horsethief we stayed a week. Then the grilling trip down the range, and another desert night gorgeous and sweltering under a ripe moon.

"Whoa, Mike! Here we are, Joe! Home again, Pete! Last stop of the Prospector Special!" Desolation gripped me as I hugged the sweaty shaggy necks of the three beloved burros. I didn't want them to go back to the onion fields. I didn't want a walled-in, stodgy house, proper meals, a civilized bed. I wanted—oh, how consumingly I wanted — to go straight back and burro into the Santa Rosas!

railroad came. Her spare hours are spent in reading old historical records, and in chugging along the ratty old stage routes in her ancient vehicle, visiting the ruins of crumbling stage stations, and chatting with the surviving pioneers of that early period.

When Miss Reed is quite sure she knows her subject thoroughly, the art world may expect to see those old four and six-horse coaches recreated in oils that will sparkle with life and action.

Several of her paintings have been hung in the Desert Inn art gallery. The brilliant coloring of her canvases and the life-like action invariably bring exclamations of admiration from visitors at the gallery.

BILL TILLERY took an ordinary small camera, with no fancy gadgets. He put his wife and some sandwiches and lemonade in an old car. They drove 20 miles onto the Arizona desert. He left his wife in the shade with a book, and began to wander with his camera among the giant saguaro cacti. After a while he returned. Then he snoozed a bit, after which they drove back home. He said he had exposed four negatives. It had been a fine leisurely Sunday afternoon. Three months later, two of the pictures he took were hanging in international salons. They won blue ribbons everywhere, which means first prizes. He didn't seem to think it particularly sensational — just pleasing.

And so—I set out to do all of that.

I had a wife, car, lunch basket. I bought a better camera than his. I knew the desert region. I had been through high school and college (he hadn't) so I doubtless had a better appreciation of art. I would show him up. I went out and took nearly 50 negatives. I would erect a pedestal for myself.

His photos are still showing, in the salons. While mine—well, let's go no further into that. I don't know why life is that way. What has Bill Tillery got that I haven't got?

I didn't find the answer, and I never will. The time has come for all of us to recognize photography as one of the fine arts. Men and women of Tillery's type are far, far removed from the untidy chemical-stained figure in the "photo galleries" of yesteryear, and from the careless snapshot kodakers of the present. In five years, camera technique has developed a thousand percent. Bill Tillery is one of the dozen or so men in all the world who have led this development.

Most of them are nature lovers, but a very few have specialized in the cacti of the Southwest. William M. Tillery—no, plain old Bill, for all his mounting fame—is foremost among this select few. His pictures of the stately sentinels which we call saguaro have delighted the best critics in New York, Chicago, Milwaukee, San Francisco, Los Angeles, even Europe and Asia. From the grand parade of lights and shadows and clouds and hills and living forms that feed the soul of every desert dweller, Bill Tillery records a few moments to keep for all time.

Tillery's photographs are not for sale commercially. He lives by another profession, a humble one. Often he is embarrassed for lack of funds. But his photographic studies are shown widely. Invariably they bring a sudden lift, an exaltation to more prosaic souls. I contend that it is better to have lived this way than to have amassed great riches, to have led men in battle, or to have flown an airplane around the world.

One of his cactus pictures (not quite so good as the one reproduced with this article) was submitted to an international salon to which 8,000 photographers, from every country in the world, sent their best prints. Each man submitted an average of three or four prints, which meant a total offering of at least 24,000 pictures. From this, 40 were hung.

From that 40, eight were ultimately chosen for reproduction in the salon catalogue, among them Tillery's cactus scene.

But just to prove to himself that he wasn't limited to desert scenery, he also submitted a portrait of a cat. The cat, likewise, won a prize in its field.

Mostly Bill takes desert views. When the mood suddenly hits him, though, he will photograph a Mexican girl, an In-

Bill Tillery

--amateur photographer

By OREN ARNOLD



dian man, a leaf, anything. Once, to josh him a little, I took Bill Tillery a dead grasshopper.

"Any art in this, Bill? I'll bet a good man could make a swell portrait of a dead bug." I grinned at him.

Six months later "Mr. Hopper," under that title, hung in a national photographic salon, was called one of the most extraordinary prints of the year! He had set the hopper on a twig and snapped. He had made a large print from a paper negative, bringing out marvels of soft, delicate light and shadings, composition and form.

Tillery, a mature man, has generously coached many younger photographers. He was president for a time of the skilled camera club at Phoenix, Arizona. He was one of three judges of Phoenix' first National Photographic Salon in February, 1939, and told younger men and women there how he captures beauties of the hills and fields. He is at present a resident of Los Angeles. Among cameramen, his name is known and respected in every major city—Cleveland or Seattle, Budapest or Berlin.

Here are a few fundamental helps Bill offers beginners:

Do not center the main object too perfectly. (Note that Tillery does not). Do not try always to have the sun directly behind you. This old rule for amateurs is as fallacious as it is old. Best pictures are made with the sun to the side, or even in front. Silhouettes are always effective when taking saguaros. Angle shots—tilting the camera for a "worm's eye view," or other unconventional poses—are popular now. Close-ups will register detail, and often produce surprisingly beautiful pattern pictures. Clouds (best caught with an inexpensive color filter on your camera) always add grandeur to landscapes, but some clouds are more beautiful than others. Do not have too many things in your picture; the figure of Uncle Abner or little Geraldine is all right, but will divert attention from the scenic beauty if you want the big saguaro and the cloud-decked sky.

I have learned one highly significant thing from William Tillery which ought to be stressed in all schools everywhere:

"Most important thing about photography," he said, "is not the pictures you make—but the pictures you see."

"A study of photography for a year, just as a hobby, will create in you an appreciation of beauty which you could not possess otherwise. You will come to see pictures automatically. Your artistic self will unconsciously censor out the unsightly things, you will walk or ride everywhere seeing and 'framing' lovely landscapes and other views, even though your camera be on the closet shelf at home."

This is true. It is so true in my case that I would not take ten thousand dollars for what the simple lesson has meant to me.

Surely, the same esthetic sense can be developed through painting, sketching, modeling, other forms of art. But so few of us ever try them! Almost every family nowadays has a kodak. Good cameras cost only a few dollars; even moving picture cameras—with other films—are inexpensive.

Best place in America for outdoor pictures (this is a scientific fact, due to atmospheric conditions) is in the Southwest, right here. Best subjects for amateurs—and perhaps best for the experts, as witness the Tillery views—are those stately, time-defying, desert sentinels, the cactus trees.



"Desert Grandeur"

Camera study by William M. Tillery. This is perhaps the finest saguaro cactus photograph ever made. It has won prizes in metropolitan photographic salons throughout the world. It was taken on the desert near Phoenix, Arizona.



When Manly Returned to Death Valley

ABANDONED in Death Valley in 1861 by the man he rescued from that God-forsaken place in 1849 was the fate of William Manly. Few stories of the now famous playground and winter resort operated by the United States national park service have the drama of this little known tale of pioneer days.

The story of the Jayhawker Party is too well known to bear repeating in this article. The hardships suffered by that band of gold hungry greenhorns following a short cut into the Promised Land has been published and republished. William Manly, one of the party, a native of Vermont issued his book, "Death Valley in '49" from the press of the Pacific Tree and Vine at San Jose in 1894. However, once in April 1877 and again in 1887 Manly published two abbreviated accounts of that long perilous trek. In addition to these versions he

By **ARTHUR WOODWARD**
Sketches by **Gloria Widmann**

wrote many short items detailing the incidents and adventures of members of the party during the journey and after their arrival at the mines.

The tattered footsore little group of men, women and children who trudged thankfully down the dusty main street of the sleepy Mexican pueblo of Los Angeles early in 1850, driving their remaining oxen before them, with the youngest children slung in hickory shirt panniers on the back of old "Crump," the faithful ox, included William Manly and Ashael Bennett, two of the principal actors in one of the most stirring dramas of early California.

At Los Angeles the party separated, each to go his own way. Manly decided to remain in Los Angeles for awhile. Bennett with his family and John Rogers,

the young man who had helped Manly blaze the rescue trail north from Death Valley to the San Francisquito Rancho on the Santa Clara river near the present site of Newhall, turned their faces north. After working in a vinegar factory for about one month, Manly decided to join his companions in the gold fields. The trio worked in the mines on the Merced river. Then they drifted apart. Rogers dropped out of sight and it was not until June 1895, forty-five years later that Manly again met his companion of '49 in a touching reunion in the San Joaquin valley.

Ashael Bennett soon left the mines and settled in San Jose. But his was the restless foot. His wife died and he moved to Cedar Creek, Utah, where he attempted to compete with the Mormons in the drygoods business. He failed there and moved to Los Angeles in 1860.

Probably at this time neither Bennett

nor Manly had the slightest idea that either of them would ever look again upon the scenes of their hardships in the desolate waste of Death Valley, but Fate, the master director, was setting the stage and slowly moving the actors into place,

Fate had been shifting the scenic props for this play since the days when John Goller and his partner, the "two Dutchmen" of the Jayhawker party, stumbled onto the fabulous gold placers on their way out of Death Valley. This was one of the famous "Lost Dutchman" mines which prospectors have been seeking for many years. John Goller after a few abortive attempts to re-discover the mine settled down to making honest wagons in Los Angeles. His partner opened a store near San Luis Rey and was murdered there a few years later. This "Lost Dutchman" mine became another desert legend, a lodestone for prospectors to the end of time.

In the spring of 1861 a small party of five or six men, including Ashael Bennett, Charles Alvord and John Shipes drove out of Los Angeles via the Cajon Pass for Death Valley. They were well equipped with provisions in a six-mule wagon. Bennett was the guide. He had been one of the original Death Valley party, hence if anyone could find the "Lost Dutchman" or the equally famed "Gunsight Lead" it must be Ashael Bennett. The fact that he was just as ignorant of the location of those rich deposits as any one of the group did not matter. He was Bennett, he was a miner of '49. That was sufficient.

Of the other members of the party little is known with the exception of Charles Alvord. He was a well-educated New Yorker about 60 years old, who had a flair for horticulture, and who had studied something about geology. Compared with the others he was a rank tenderfoot, but he was an enthusiast.

The weather was warm. The party traveled slowly during the early morning hours and late in the afternoon. They rested during the heat of midday under the wagons, soaking their clothes with water in an effort to keep cool. Eventually they entered Death Valley from the south, traveling much the same route the plucky Wade family had taken in 1849, enroute to Los Angeles. Camp was pitched some place at the southern end of the valley where there was water and grass for the animals. Here the prospectors occupied most of their time finding rich mines in their *siesta* periods underneath the wagon. Alvord, the greenhorn,



Pen sketch of William Manly about 1894 when his "Death Valley in '49" was published.

with the enthusiasm of the untutored, decided to go off on his own. He took his shotgun, geologist's pick, blankets and a small parcel of food and struck north along the mountains rimming the western edge of Death Valley.

During his absence the others poked around close to the base camp and discovered what they thought were a couple of promising ledges of silver ore. Two weeks passed and they were already speaking of Alvord in the past tense, thinking surely he had been gathered in by the Indians. Then he appeared in camp, hale and hearty, with some specimens of black looking ore shot full of golden specks.

However, his companions were excited over the silver mines they had found. Bennett proposed they build a small furnace and try reducing some of the ore to see if it was actually silver or base lead. The party had moved up the valley and was then encamped on the lower slopes of Telescope peak. Wood was gathered and an attempt made to smelt the ore. This failed and Bennett who had been a lead miner in Wisconsin concluded that a hotter fire was needed. He said there wasn't enough draft on that side of the valley but if they could get to one of the high points on the east side he felt certain he could build a small stone furnace such as he had used in Wisconsin to heat and sharpen his picks. Accordingly a supply of charcoal was made and the prospectors trekked across the Valley to a hill overlooking a "little weak stream." Here the furnace, "built like a chimney, about a foot high and on the wind side two wings are built in such a way that

the wind is carried through the furnace and the coal is caused to burn with a red heat, and is nearly as hot as it can be made by a bellows," was erected. This incident is responsible for the name "Furnace Creek" on our present maps. When the ore was tested and failed to melt, the men were jubilant, thinking it must be silver instead of lead. They returned to Los Angeles and sent their samples to San Francisco to be assayed. Alvord entrusted the sample of gold ore he had collected to the care of Isaac Hartman, the lawyer who carried the other specimens, with instructions to keep secret the report on those particular bits of ore.

In due time the reports were returned.

The "silver" ore was lead with a slight percentage of silver but Alvord's black rock was rich with gold and worth working. The New Yorker took Bennett and William Stockton into his confidence, but the news soon leaked out, and the Mormon faction of the original prospecting party insisted that it was share and share alike, and that Alvord must guide them back to the spot where he had found the ore.

By the time the group reached the valley, it was late in the year, and snow lay over the mountains, mantling landmarks to the confusion of Alvord, who had probably failed to note the exact location of his discovery.

His fumbling attempts to re-locate the original strike caused the more suspicious members of the crew to believe that he was deliberately concealing the site from them. Said Manly, "The recalcitrants with Porter Rockwell's sense of justice proposed to hang Alvord for not finding the mine."

Alvord finally convinced them that hanging him would not help matters any.

"Leave me here," he said, "if you think it for your best interest to do so."

After a day or two of blustering indecision and muttered threats, they concluded to "leave the old son-of-a-gun to starve to death." Let it be said to his credit that Bennett was the only man who spoke out, and when the party drove away cursing, Bennett alone said good-bye to Charles Alvord, the first man to be deliberately stranded by his fellow companions in the lonely wastes of Death Valley. A strong man on foot, with ample food and water might win free in ten days, but what of a man 60 years of age, with a scanty food supply

and a limited knowledge of the country?

Thus the curtain of the second act of this desert drama fell upon the scene of Alvord standing motionless beside the fire in his solitary camp, watching his erstwhile companions driving down the valley with never a backward glance or wave of the hand, and Bennett riding apart, steeped in remorse and troubled by the thing they had done.

When Bennett reached Los Angeles, William Manly, his old trail mate was there, waiting to greet him. When Manly heard of the heartless abandonment of Alvord he berated Bennett, and insisted a rescue party should be formed at once. Accordingly Manly, Bennett and a storekeeper of San Gabriel, named Caesar Twitchell, organized a pack train of mules and set out by way of San Fernando and the old trail the Death Valley party had travelled in '49 to bring Alvord in alive if possible.

Said Manly: "When I concluded that it was my duty to go once again to Death Valley, to save and relieve as good a man as ever lived from starvation, it seemed that I was born for the unwelcome task of rescuing the unfortunate of that terrible Valley."

As they traveled slowly through the mountains the trail became alive with poignant memories of the previous decade.

"The next day we camped over on the east slope of the Coast Range at the same water holes we camped at in '49. Our early troubles and trials now began to come back to me and I could see quite clearly all that took place on this barren, lonely trail."

Qualms and misgivings assailed Manly

as he rode, and when he climbed to the top of a high peak and gazed ahead with a spy glass, "the country looked as desolate, black and barren as it did in '49." His legs shook, and fear gnawed at his stomach. He wanted to turn back.

He told his companions of his feelings.

"Spunk up!," they said, "You used to be brave and fearless, why do you weaken so? Don't talk about backing out now!"

On they pushed, passing familiar landmarks and "as we passed across the level plain before us, we saw the rotten brush we fixed around our camp for a wind-break in 1849. We followed our early trail to the place (now called Providence Spring) where the rocks we fixed up to put our camp kettle on still stood as we left them in two rows, with a place for the fire between."

A night or so later as they camped beside the falls in the canyon where they had lowered their oxen over a ten-foot drop on that fateful trip out of the valley in '49, Alvord stumbled into the circle of firelight. He had managed to cross the mountains and had cut their trail.

Aside from being a bit weary the old man was all right. His food was gone and he was still several days' journey on foot to the nearest supply. It had been a narrow squeak for him.

The four men held a brief council.

Bennett and his companions built a furnace to determine whether their ore was silver or lead. From this incident Furnace creek derives its name.

They had food, water and animals. Why not cross the ranges, ride into Death Valley, and prospect for the lost mines? The decision was soon made. That night an Indian and his wife dropped in and Manly fearing to have extra mouths to feed said the party would have to make tracks immediately.

Manly took the lead. Part of the trail had been obliterated, the sand had blown over their old tracks, but he had a general idea of the route. On the summit, amidst the wind swept rocks they found the bleaching bones of Fish, the man who had perished there 11 years before.

Once in the valley the four men struck north. At one place they had to turn south to avoid a sluggish stream that ran into a salt lake. On either side of this stream was a hard clay bed over which the Jayhawkers had driven their oxen.

Camp was finally pitched in a lonely dark canyon where there was water and some scrubby willows. Here they set up a tent. Here it was decided that Bennett and Twitchell must take the pack mules and return to Los Angeles for more grub. Manly and Alvord were to remain and prospect. There was food enough to last them until their companions returned.

Little did Manly suspect that he was looking his last upon the retreating forms of Bennett and Twitchell for many years to come. There was no thought of desertion in the minds of any of the quartet as the two men clattered out of the canyon.

The days passed. Manly, being the best shot, took the shotgun and hunted hawks and rabbits to eke out the dwindling sup-



ply of food. There were few creatures fit for consumption in that dreary region. The flour sack was growing more limp and the two men anxiously scanned the valley floor and the nearby mountain sides for signs of their returning partners. At last, it dawned upon Manly that unless he and Alvord struck out immediately the tragedy of 1849 might be reenacted in the Valley of Death. They baked their remaining flour into two cakes. A hastily scribbled note telling any chance passerby that the two men were going to work their way across country to Walker's pass was fastened to the tent pole. Then they took their blankets, gun and camp bread and took up the long, weary hike over the mountains.

Alvord developed a boil on his knee and could not keep up with Manly. The first night they camped over the mountain in a high valley where the wind keened dismally with a cold voice among the naked rocks. They laid by in this cheerless camp one day, hoping Alvord's leg would become better. Then they started out again. Manly took the lead. From a lofty eminence he sighted along the gun barrel to the next water hole 30 miles away. Alvord noted the place. Manly then left Alvord and went ahead. He reached the waterhole and built a large fire. This was Alvord's guiding beacon. Early the next morning the lame man staggered into camp. Here the two weary men rested for a day and two nights. Their coarse bread was about gone. Manly had managed to shoot a couple of jack-rabbits. This was their only food supply. On the third morning a party of five or six men enroute to Visalia from a prospecting trip came into the little camp. Once more Manly had cheated the Death that lurked in the desert valley.

Why had Bennett deserted them?

For 31 long years that question remained unanswered.

Ashael Bennett had left Los Angeles and settled in Idaho Falls, Idaho, where he died in 1895 in his 84th year. Manly returned to San Jose. Alvord was murdered in 1862 while prospecting for coal in the west side of Kern Lake. Only Twitchell and Manly were left in California.

Then, said Manly: "I helped in 1849 to save Bennett and others from starvation in Death Valley and why he had left Alvord and myself to perish seemed strange. Then I met Twitchell at Santa Monica in 1892, the first question I asked him was, why he and Bennett had left us to starve."

Twitchell explained that when he and Bennett reached the Coast Range, snow was three feet deep in the passes and a storm was raging. The two men and their

The Desert Trading Post

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animals barely made it across the mountains when the storm set in in earnest and for six weeks the roads across the hills were impassable. Knowing the stranded men had provisions for only a week or so, they realized that before a rescue party could return, Manly and Alvord would either be out, or be dead, hence there was no use seeking them.

Concluded Manly: "His explanation was as given above. It required some grace to become reconciled, but we finally forgave them."

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Photo by Dewey Moore, Indio, California

Desert Lily . . .

By LILLIAN BOS ROSS

"**W**AIT until you see the desert lily." These were almost the first words I heard from the brown desert dwellers when I came out from the big-city-by-the-sea to revel in the January sunshine of California's Borrego desert.

I had never been on the desert before and I looked doubtfully around at this new dry world—and politely kept silent. "Wait!" they had said, and so I waited.

My dwelling place was a long-abandoned shack at the end of a sandy thread which was called a road. No other house, fence, or man-made thing could be seen. I was alone under an infinitely high and cloudless blue sky arched above a brown world sleeping silently under its blanket of sand.

Away from the city's driving urge to grab, push, make every second count for ten seconds of accomplishment, at first I felt lost in the vastness of the Borrego Desert. But as day after day I sat on the well-worn step of the little shack and watched the wide horizons, the need for haste slipped away.

I became aware of the intricate and delicate patterns the leafless ocotillo traced against the sky and my thoughts seemed to take on something of the peace, the quiet waiting of the leafless branches. Complicated skeins of tangled ambitions unrolled smoothly and wound into a small ball of reality. And even that small core of real ambition became of amazing unimportance in the healing silence of the desert.

During my forty Lenten days in the desert I thought of the lily as a symbol of resurrection and it became very important to me that I should see the glory of this strange desert lily.

Much of the Borrego desert is physically like the country around Galilee where He walked and talked with His disciples. The Salton Sea reminds me of the Sea of Galilee.

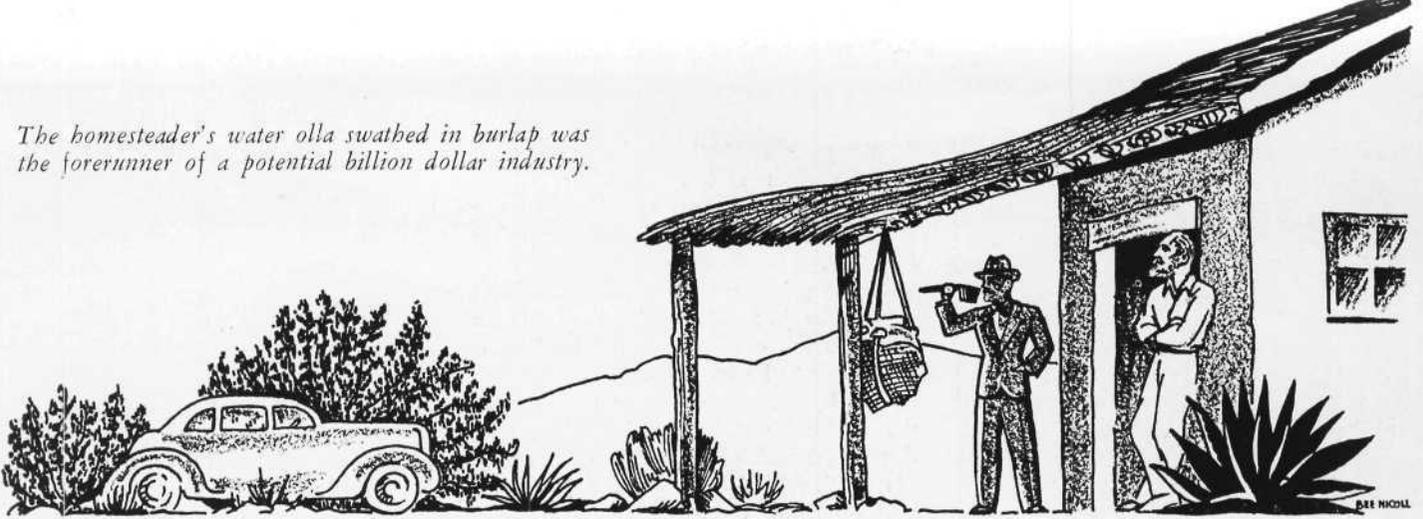
As Easter approached I watched the slender thorny whips of the ocotillo put on their dresses of tiny green leaves, and the bud stems begin to swell and acquire a crimson tint that gave a hint of the gorgeous blossoms which were to follow.

Then almost overnight a dry lake bed changed from a flat sun-cracked waste of brown earth to a rippling lake of blue and white and yellow blossoms. From every sand hill the desert verbena blossomed into a magic carpet woven in soft shades of lavender and red. The branches of the mesquite trees acquired a golden mist, and across the desert floor and up the rocky canyons splashed miles of buoyant, vari-colored bloom. Nothing was lacking for perfect beauty — but Easter was only a few days away, and I had not found my lily.

Then, rounding a dune where only a few days before I had seen the windblown tracks of a fox or coyote, I stopped to stare in wonder. High on one sturdy stalk swung ten dazzling white blossoms, their fragrance as golden as their hearts. With a feeling of reverence I bent over to pay my respects, not bending far for this first cluster was on a lily stalk all of three feet high. It seemed the final touch of perfection to find the waxen white petals faintly striped on the underside with pale green and blue tracings which delicately blended into the blue-green stem and leaf.

Easter found me on my way to hold my solitary Easter service with my desert lily. As I walked softly across carpets of tiny flowers still spilling their night perfume into the desert dawn I felt a joyful new vitality in the sweetly solemn words which again this Easter day would go ringing around the world: "I am the resurrection and the life."

The homesteader's water olla swathed in burlap was the forerunner of a potential billion dollar industry.



Cooling the Desert Air

By JAMES H. COLLINS

Sketch by Bee Nicoll

THE first time I saw an evaporative cooling system in operation was in a remote corner of the desert far from the paved highway when I stopped one day at a homesteader's shack to inquire as to road directions.

Under an arrowweed ramada adjoining the one-room dwelling was suspended a Mexican olla swathed in burlap wrappings. The burlap was kept damp, and the water in the jar retained a delicious coolness far more healthful for drinking purposes than the iced drinks of city dwellers.

That was many years ago. Little did I suspect that this simple cooler system, devised on the deserts of the old world long before it was brought to America, would emerge later as a new American industry of billion dollar potentialities.

While the early Mexican pioneer of the Southwest, and possibly the desert Indian before him, was using the evaporative principle for cooling purposes, it was not until the lure of precious metals and the fertility of the river valleys attracted Americans to the arid region that serious thought was given to the improvement of cooling devices.

There are at least three ways to cool air, and make a house comfortable in the region of high temperatures.

First there is mechanical refrigeration, operated on the same principle as your electric or gas refrigerator. This calls for rather expensive installation from the viewpoint of the small home owner.

Second, by the radiation principle, air is conducted through an elaborate system of baffles and running water to cool it. This also calls for apparatus and power, as well as something desert people may have to use carefully—water.

The third way is the simple evaporative system with some refinements and greatly increased efficiency. It comes within the budget of desert dwellers who may

The old bogey man—summer heat on the desert—is losing his grip. Today the average home and workshop on the desert are more comfortable places in June and July and August than the dwellings in milder zones where air-cooling has not yet been accepted as an essential. Within a period of five years engineers and manufacturers not only have developed air-cooling apparatus to a high stage of efficiency, but they have brought the cost within the limit of the man of moderate means. In the accompanying article James H. Collins gives a brief summary of the progress made to date in this comparatively new field of industry.

feel that they can not afford the more elaborate systems.

Scarcely five years have passed since engineers began developing evaporative cooling to its present high stage of effectiveness. They have designed apparatus to meet the needs and the pocketbooks of many thousands of people in the Southwest — and the time already has come when desert people regard air-cooling as one of the essentials of every home.

Anybody can make an evaporative cooling apparatus, and for a while everybody did. And then the trained minds of the engineers were applied to the job. Today the factory designed and built air-cooler bears the same relation to the home-made article that the old crystal and cat's whiskers radio receiver does to the splendidly engineered commercial radio. The old home-made devices are rapidly giving way to the more efficient, and in the long run the less expensive factory product.

This new air-cooling industry—or the evaporative end of it — has developed naturally in our own Southwest, because here was the biggest need for it.

Not many years ago, hardy pioneers went into the deserts to raise dates and melons and early vegetables. Everybody pitied them, and they themselves knew it was a sentence to Devil's Island, but they went because there was money to be made.

With characteristic American initiative

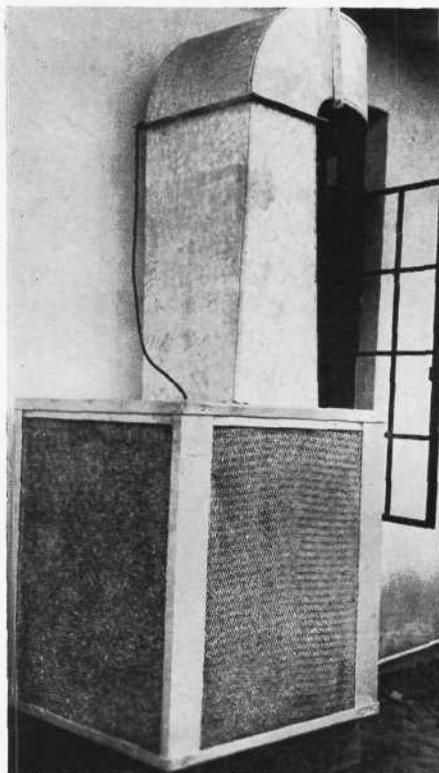
they began finding ways for making the desert more comfortable. And then six years ago when the home-made cooler idea came along and swept across the desert country like an epidemic, some of the new factory industries that had been growing up in Los Angeles and Phoenix and other trade centers serving desert people immediately took notice.

The desert folks were taking an electric fan, a box and a wad of excelsior and making a drip-drip-drip gadget that kept the excelsior wet while a current of air was pulled through it. It was a crude device and the manufacturers put their engineers to work in an effort to improve it.

The home-made apparatus would cool a room, true. But it was a haphazard affair. The cooled air would be too moist, or too dry, and only engineers knew that certain areas of the wet wad of excelsior did most of the cooling, and that other areas did none at all. Evaporative cooling cannot be regulated with the precision of mechanical cooling, except with added apparatus, but the engineered evaporative cooler is a great improvement over the home made model.

The homemade cooler looked like a homemade suit of clothes — it took up space, but was never quite gauged to fit the purpose for which it was intended.

Engineers started with the size of the rooms, and then figured their coolers in cubic feet per minute, and determined



This is a typical illustration of a blower model showing the duct by which air is distributed through the home.

which areas of the cooling pads furnished the actual cooled air that was wanted.

Engineering arrived at ratios like these:

The room is 10 feet wide, 10 feet long, 10 feet high—1,000 cubic feet.

A cooling apparatus furnishing 1,000 cubic feet of conditioned air every minute, or 60,000 cubic feet per hour, can change the air in that room every three minutes. Or where the outside desert heat is not too high it can cool two such rooms or even three.

That's about the smallest size factory cooler, and it is often made portable—to be carried from room to room as needed and plugged into the handiest electric outlet. It is silent, and good-looking—like a piece of furniture.

Most desert dwellers find that a larger cooler is best, one from 2,500 to 3,000 cubic feet capacity, built into a new house, or permanently installed in an old house to do the whole cooling job just as normally and efficiently as a heating system.

And just as the dealer in furnaces is an expert who comes to your house, takes measurements, and determines the size and arrangement of the rooms to be made comfortable in cold weather, and then installs just the type and capacity of heater that will best do the job, so this new cooling industry has developed its dealer experts, who do the same thing for houses in the hot country. The manu-

facturing part of the industry supplies all the sizes and types of apparatus needed for any house, anywhere, or any store, theater, school, church or other building.

Cooling human beings is something more than just getting the thermometer down to the comfort point. The hygrometer has to be consulted.

The hygrometer measures moisture in the air, the well-known humidity, and discomfort in hot weather is a matter of too much moisture as well as too much heat—or in desert country, too little moisture.

Not everybody knows that sunstroke is a matter of balance between temperature and humidity so deadly that the natural cooling system of the human body cannot act, and heat collapse takes place.

Fortunately, this fatal balance occurs rarely, but improper balances of heat and humidity can create all sorts of discomfort for people, even when the thermometer seems to be at a comfort point. Scientific balance between these two factors is an important part in the design of modern evaporative coolers—and practically never enters into the home-made cooler at all.

The commercial cooler has balance, automatically maintained by regulating the amount of moisture supplied to the cooling pad, the capacity and speed of the fans or blowers that circulate the air, the temperature of the outside air.

With all this air being circulated, cooled and correctly moistened, the engineer then did something more—something overlooked by the home-owner who was a handy man, and tinkered his own evaporative cooler together.

He washed the air as well, freeing it from dust, dirt, pollen and other foreign matter, especially from the invisible things that cause hay fever, asthma and other disorders.

I think the first air conditioning system I ever saw was that installed years ago in Marshall Field's big Chicago store. It washed the air with big water sprays, and while an expensive system, it paid for itself over and over by keeping the merchandise clean throughout the huge store, as well as keeping the customers cool and happy.

The superintendent told me that every few weeks they shoveled tons of dirt out of this washing system—"and it smells like a livery stable or worse," he said. That was in the day of the horse.

All air, even the clean air of the desert and forest, contains impurities, and in designing a well-planned cooling system any engineer would get rid of them as part of the job.

Having at his command from 1,000 to 3,000 cubic feet of washed, cooled, mois-



Many coolers are now equipped with louvers designed to hide the evaporative pads. The installations in this picture are on an auto court and show the improved appearance of current models.

ture-balanced air per minute—or as much more as anybody wants for any size building—the engineer asks himself, "Where had it best be delivered?"

A direct current of cool air blowing on people in a house, especially at night while trying to sleep, is neither pleasant nor healthful.

After various experiments, engineers found that the most satisfactory delivery is at the ceiling. This avoids direct drafts, and the cooled air, being heavier than room air, distributes itself naturally by descending.

Quiet was another important engineering factor. In home-made cooling apparatus, with an ordinary electric fan the box often became a sounding board. It was noisy. If people were cooler, they tried to forget the noise.

But when they installed a commercial cooling system, it had to be silent. To achieve silence, engineers did various things. Better fans were designed for smaller cooling units, with blades shaped to drive large volumes of air with the least resistance, and hence the least noise.

For larger cooling units the blower was used instead of the fan, operating on the centrifugal principle. It was especially designed for quiet.

With the home-made cooler, the neighbors generally knew you had air-condit-

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tioning, while with the skilfully installed commercial cooler, you are hardly aware of it yourself. Noise has been reduced almost to the vanishing point. Noise has also been reduced in tone level, so it makes the least impression on human ears.

Last of all, the engineer has figured price and operating cost. This is important because every reduction in the price of an efficient cooling system brings it within the reach of more and more families. It is the old "tin lizzie" problem all over again, and the air-conditioning engineer is changing his price picture faster than Henry Ford changed the automobile price picture thirty years ago.

Today, such are the advances in cooling apparatus for the exacting conditions found in the deserts, you can install one of these systems in an ordinary house for about the cost of an electric refrigerator—and have a smaller unit, for two or three bedrooms, portable if you want it, for the price of a really good ready-made suit of clothes.

Once bought, there is only the expense of electricity and water, with occasional replacement of filters and pads.

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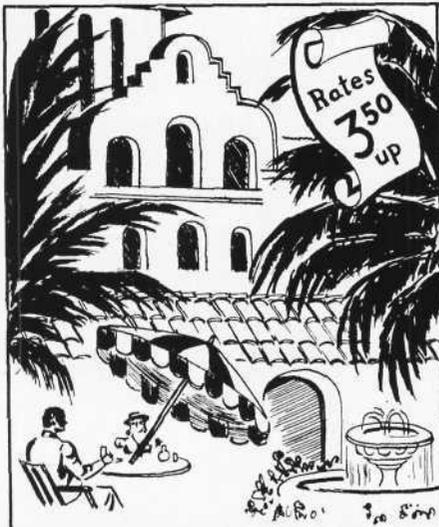
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Desert Place Names

For the historical data contained in this department the Desert Magazine is indebted to the research work done by the late Will C. Barnes, author of "Arizona Place Names;" to Frances Rosser Brown of New Mexico, to Margaret Hussmann of Nevada, to the Federal Writers' Project of Utah, and to James A. Jasper of Los Angeles.

ARIZONA

COCHISE STRONGHOLD Cochise county
Eastern side of Dragoon mountains, on Stronghold canyon. So called because Cochise, Apache leader, used this basin as a hiding place. Forest ranger station located here. General Miles had a heliograph station near here in 1886 during the Geronimo campaign. Bourke says, "While watering his horses in Cochise Stronghold Capt. Gerald Russell, K troop, 3rd U. S. Cavalry, was attacked by Cochise and his band. At the first shot poor Bob Whitney, his guide was killed. Bob was an unusually handsome fellow of great courage and long service against the Apaches." According to Indian Agents Jeffords and Rockfellow, "Cochise died here and was buried at the mouth of the canyon overlooking Sulphur springs valley. After burial the Apaches rode their ponies back and forth over the area about the grave, completely obliterating it." Tucson Star, June 13, 1874; "Cochise died June 8, 1874. He was about 70 years old." Upper end of Stronghold is now an auto park and public camp ground named by U. S. forest service "Cochise Memorial park."

CALIFORNIA

COYOTE WELLS Imperial county
The original water hole was discovered by a coyote, James A. Jasper says in a letter to the Desert Magazine, and the name was given by James Edward Mason. The story, he says, dates back to 1857, when the "Jackass Mail" trail was established between San Antonio, Texas and San Diego, California, by James E. Birch, who was a man of action. Birch got the transcontinental mail contract on June 22, 1857. On July 9th following, the first mail left San Antonio for San Diego in charge of G. H. Geddings and J. C. Woods.

These men started with equipment hastily assembled, with orders to establish stations at convenient places enroute, along a way on which no preparations had been made for them. Birch advertised to carry mail and passengers by stage and wagon to the Colorado river; thence to San Diego, 179 miles, by pack animals—hence the name "jackass mail line."

At Yuma Geddings employed Mason to convoy mail and passengers to San Diego. At Coyote water hole Mason told Geddings how he had seen a coyote dig the water hole. So Geddings established a station there and called it Coyote station. The mail arrived San Diego August 31, 1857, under escort of James E. Mason. At the outbreak of the civil war the line was abandoned and the story of the subsequent development of the present supply comes from the discoverer himself. "Water at the original well was limited," writes Jasper. "Many efforts were made to find more water but without avail." Years later Jasper was hunting gem stones. "I went north from the station about 50 yards and at a depth of two feet struck water which proves that water on the desert (like gold) is where you find it. Then I went to Campo, had a water trough made, bought a pump and lumber, dug a pit, walled it up with stone, installed pump and trough for the traveling public. I watered 43 head of stock there without lowering the water."

NEVADA

LAKE TAHOE

Pronounced as one syllable TAO, broad "a." In the heart of the Sierra Nevada mountains, partly in Nevada, partly in California. Discovered by John Fremont on February 14, 1844, the lake is 23 miles long, 13 miles wide and soundings have recorded a depth of more than 1800 feet. First named Bigler, in honor of a California governor, this name failed to stick and popular sentiment gradually crystallized in favor of the present name, the Washoe Indian word for "Big Water." Here is the Indian legend of Tahoe and Fallen Leaf lake, a short distance away: Long ago, before the whiteman came to Nevada, a good Indian lived in the meadow beyond Glenbrook. This good Indian was plagued by an Evil Spirit, from whom he decided to escape by moving into the valleys of California. But the Evil One was always at hand, ready to trip him whenever the good Indian made a move. Finally the Good Spirit came to the Indian's aid, giving him a leafy branch of magic power. The Indian was told to set out on his journey. If he saw the Evil One coming, he was to drop a bit of the branch and water would immediately spring up. The Evil One could not cross water and when he was delayed by a detour, the Indian would have time to escape. The Indian was well on his way when he looked back and saw the Evil One approaching with great strides. Filled with terror, the Indian tried to pluck a leaf from his magic branch, but it snapped off and he dropped almost the entire branch. To his great delight the waters began to rise and soon Tahoe or "Big Water," lay between him and his enemy. Where Fallen Leaf lake heads, the good Indian turned to reassure himself and fears assailed him when he saw the Evil One advancing in the distance. Of the magic branch only one little twig with a single leaf on it remained. He plucked the leaf and as it touched the earth, waters again began to rise and "Doolagoga"—Fallen Leaf—spread its expanse behind his steps. On its surface the leaf floated, as many leaves float there now in the fall of every year. The Indian sped up the ravine, dropping bits of the magic twig behind him and in his path Lily, Grass and Heather Lakes came up to save him from his pursuer. At last he crossed the mountain and was safe in the Valley of California. Tahoe is one of the world's most beautiful lakes and the entire lake front is occupied by homes of vacationers.

NEW MEXICO

SILVER CITY

Grant county
Founded and named by a Captain Hurlburt in 1870, following discovery of silver at nearby Chloride Flats and Georgetown and in the Burro mountains. Still operates under a special charter granted by territorial legislature (act of 1878) and is the only city or town in New Mexico whose charter is not affected by state laws dealing with municipalities. Promoted by nine men, one of whom was L. B. Maxwell, New Mexico's first millionaire. First telegraph 1876. First railroad 1883. Apaches menaced early settlers. Boyhood home of Billy the Kid. Two famous saloons flourishing here

when Silver City was young were the Red Onion and the Blue Goose. Grant county, created in 1868, was named in honor of Gen. U. S. Grant.

CLOVIS Curry county
 Originated in March 1906 as Santa Fe railway division point. Named by Jarvis Dunn, chief engineer of the Santa Fe, for Clovis I, king of the Franks, usually called founder of the French monarchy. Curry, smallest county in New Mexico, was established February 25, 1909, named in honor of George W. Curry, territorial governor.

HOT SPRINGS Sierra county
 Indians lived near these hot springs before the white man came. For years this was headquarters for Victorio, Apache chief who led a band that terrorized southwestern New Mexico 1879-86. Geronimo and some of his followers were here with Victorio almost a year. The warm mineral waters at Hot Springs led to the establishment of the Carrie Tingley memorial hospital for crippled children. Elephant Butte dam, four miles northeast of Hot Springs on the Rio Grande, impounds the second largest artificial lake in the world, 44 miles long and one to eight miles wide. Sierra county was named for the mountainous area from which it was created in 1884.

• • •
UTAH

FILLMORE Millard county
 Father Escalante and his small party in 1776 were first white men of record to visit the area included in Millard county. Next recorded mention of white visitors occurred in October 1851, when pioneers from Salt Lake city reached the present site of Fillmore, in search of a location for the capital of the territory. Settlement was made by the side of Chalk creek, a stockade was built and later a walled fort. The county was named Millard and the town Fillmore, in honor of President Millard Fillmore. Indians of the region were Pahvants (Utes), who lived in huts, sage brush shelters or wickiups of cedar for midsummer. In winter they wore rabbit skin clothes and in summer a gee-string and a feather. Ruins of walled houses of adobe, found in the vicinity, prove that earlier inhabitants of the region were pueblo people.

CANNONVILLE Garfield county
 George T. Cannon became a Mormon in 1839, accompanying the Parley Pratt party to Salt Lake. In 1849 he went to California with Elder Charles C. Rich, and worked in the mines. In 1862 he went to Washington, D. C., in behalf of a movement to admit Utah to the Union as a state. In 1867 he was editor and publisher of the Deseret News.



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Sez Hard Rock Shorty of ... Death Valley

By LON GARRISON



"Sand storms? Sure. I've seen some of 'em — real dusters, too. They do funny things sometimes—cover up a house, an' at the same time uncover a barn that was covered up forty years ago, an' such like. One o' the funniest though was the time a storm drifted in that new road the state built in from Bullfrog."

Hard Rock Shorty yawned, knocked the sand off his hat, cocked it back at the angle best calculated to keep the sun out of his eyes the longest time without moving it again, and went on with his story.

"The new road was just opened up, an' a whole bunch of dudes was comin' in. Lots o' times there'd be three or four a week. Folks that hadn't ought've been let loose without nursemaids. They'd ride through town, look us over an' say —'Ain't he quaint?' an' 'Just look at that old character!'"

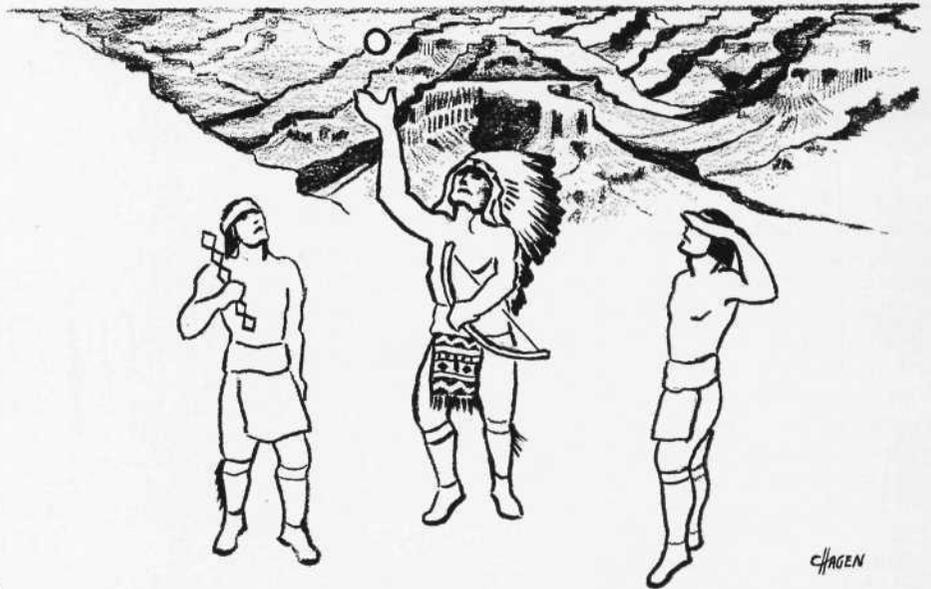
"Character! Hell! I ain't got none! But to get back to them dudes—they wasn't nothin' serious happened 'til this bad sand storm came up. Blowed for three days. Time the storm was over, I was out walkin' along the road an' found these big sand dunes drifted plumb across it lots o' places. Crossin' one o' them dunes, I seen a hat lyin' there on the sand, an' I stooped over to pick it up. When I lifted it, I seen some feller's head under it, an' he looked up at me an' sort o' grinned.

" 'I say, it seems a bit sandy,' he says.

" 'Hell!' I says. 'Damn dumb pilgrims that don't know enough to be scared! You need any help, Mister?'"

" 'Thanks, no,' he comes back. 'I'll make out. I'm on a motorcycle.' "

According to Hopi legend the Indians once lived in the center of the earth, until famine and strife caused them to seek a new home on the surface. The story of migration was told in preceding numbers of the Desert Magazine. And now that the Hopi are established in the Grand Canyon region and have created the sun and the moon, new problems confront them. The following story from the notebook of Harry C. James, who spent many summers in the Hopi villages, is another of the many tales that have been handed down among the tribesmen from generation to generation.



The Evil One that Came up from the Underworld

As told to HARRY C. JAMES
Sketch by Catherine G. Hagen

SHORTLY after the people had climbed up from the underworld, and while they were still living around Sipapu in the Grand Canyon, the half-grown son of one of the great chiefs died from some mysterious cause.

Said the Chief: "Now I know that all the evil ones were not destroyed by the flood that we made in the underworld. One has escaped and has managed to join us here. That evil one is responsible for the death of my son!"

He called the people together and said to them: "We must find this evil person and destroy him before he does us greater injury." He then made a small ball of fine corn meal, explaining as he did so: "I shall throw this ball of sacred corn meal into the air. It has magic powers. It will come down and hit the evil one and thus we may know for sure who he is."

The Chief then tossed the ball of corn meal high in the air and the people watched it ascend almost out of sight. Then it turned and fell rapidly towards

them, finally falling directly upon the head of the Chief's nephew.

"Now we know that you are the dangerous one!" exclaimed the Chief. "We do not want bad people here. I shall throw you back into the underworld!"

"Wait!" cried his nephew. "Before you throw me back through Sipapu I have something to tell you. Your son is not dead! He has journeyed back through Sipapu to join the people who were left behind in the underworld."

He then led the Chief and the rest of the people to the edge of Sipapu and when they looked down they were greatly surprised to see the son of the Chief running about happily, playing games with the other children below. The boy's head was washed and his body prepared as it had been for the ceremonies of death, yet there he played merrily!

Then the Chief knew that when his people died they journeyed back through the canyon to Sipapu to rejoin the villagers of the underworld. He allowed his nephew to remain as he had been.

Writers of the Desert . . .

A welcome contributor to the Desert Magazine this month is NINA PAUL SHUMWAY — who learned about the desert by living on it.

Mrs. Shumway and Steve, her husband, own and operate one of California's most productive date gardens in the Coachella valley, and sell a large part of their output by direct mail to customers all over the world.

Her father was one of the pioneers in the Coachella date industry, and Mrs. Shumway has been through all the adventures of reclaiming an arid desert. Before coming to the land of sand dunes, however, and during an intermission in her desert career she visited many parts of the American continent. Born in Nebraska, her schooling began in Kansas City and ended in Chicago. As a romantic youngster of 15 on a sugar plantation in Mexico she began her writing experience by creating a fanciful story to explain the scar on the cheek of one of the vaqueros. "It was not a promising bit of fiction," she confesses today.

However, since that first effort she has sold manuscripts to Holland's, McClure's, World Traveler, MacFadden publications, Short Stories and others. More recently, she explains, "I have been trying for the 'big slicks' but so far have made

only two of them—Country Gentleman and the Desert Magazine."

JAMES H. COLLINS, whose story of the development of air cooling for desert homes appears in this number of the Desert Magazine, formerly was editor of Southern California Business, published by the Los Angeles chamber of commerce. Since that magazine was discontinued, Collins has been doing freelance writing. His features have appeared in Satevepost and a number of business journals, including Printer's Ink.

ARTHUR WOODWARD, who finds time between his lecture engagements,

archaeological excursions and his duties as curator of history at Los Angeles museum to write for the Desert Magazine, is now preparing a story of old Fort Mojave for a future issue. Few of the outposts on the earlier western frontier have more historical interest than this old army camp in the basin of the Colorado river.

The Desert Magazine is indebted to CHUCK ABBOTT of Palm Springs for the beautiful Palm canyon picture which appears on this month's cover. The figures in the pictures are guests of the Desert Inn on a late afternoon ride in the canyon.

Weather . . .

MARCH REPORT FROM U. S. BUREAU AT PHOENIX

Temperatures—	Degrees
Mean for month	62.4
Normal for March	60.7
High on March 16	91.
Low on March 1	36.
Rain—	Inches
Total for month	0.15
Normal for March	0.68
Weather—	
Days clear	18
Days partly cloudy	6
Days cloudy	7
G. K. GREENING, Meteorologist, FROM YUMA BUREAU	

Temperatures—	Degrees
Mean for month	65.5
Normal for March	64.1
High on March 18	94.
Low on March 11	38.
Rain—	Inches
Total for month	0.01
69-year average for March	0.34
Weather—	
Days clear	25
Days partly cloudy	4
Days cloudy	2
Sunshine 89 percent (332 hours out of possible 372 hours).	

COLORADO RIVER — March discharge at Grand Canyon 820,000 acre feet. Discharge at Parker 658,000 acre feet. Estimated storage April 1 behind Boulder dam 21,325,000 acre feet.

JAMES H. GORDON, Meteorologist.



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Botany Class

This month the Desert Magazine presents for its student botanists the Desert Chicory—*Rafinesquia neomexicana* Gray. This is not one of the most common of desert flowers but it will be easily recognized from the description below. Photo by Charles Webber.



To the passerby, this little Desert Chicory hasn't the earmarks of a sunflower. Most of the flowers of this large family are easily recognized by their daisy-like heads, which we commonly think of as "the flower." The head, however, represents a whole colony of flowers, often of two different kinds. The most familiar members of the sunflower family have center flowers whose corollas are tube-shaped and ray flowers on the outer edge with strap-shaped or ligulate corollas.

This latter type is the only kind of flower possessed by the chicory. In this species there are 15 to 30 flowers in the head, which is 1

to 1½ inches across. The white ligules, about ¾ inch long, often appear to be tinged with pink, an illusion created by the delicate veining on the outside of brown-purple or magenta.

The leaves, which vary in shape from pinnate to merely toothed, are a pale bluish-green, are rather thick in texture and ¾ to 4½ inches long.

Sometimes but a single little stem a few inches high will bear the head of white ligulate flowers. But characteristically it is a widely branching annual and may grow 1½ feet. The stems are rather weak and the plant will

always do its best in the protection of desert shrubs.

During April and May it is commonly found blooming among the bushes in the Lower Sonoran Zone in desert areas roughly between 500 and 2000 feet. It is found in both the Mojave and Colorado deserts and ranges east to Utah and Arizona to the Rio Grande, and south to Lower California. It is typical in the Antelope valley.

This genus of the Chicory tribe was named for C. S. Rafinesque, an American naturalist who lived 1783-1840.

Wildflower Parade

On the lower levels of the desert many of the more delicate annuals among the wildflowers already have passed the peak of their flowering period. But at higher elevations the display is in its most brilliant stage as this issue of the Desert Magazine goes to press. Everywhere, the perennials are coming into bloom and probably will be at their best during the last two weeks in April.

The canyons along the western edge of the Colorado desert are sheltering some of the most notable of the wildflowers—scarlet bugler, blue penstemon, yellow fremontia, scarlet paint-brush, silver lupin, scarlet and buff monkey flowers.

The canyons in the Palm Springs area are offering their brightest colors in the blossoms of the Engelmann and beavertail cacti and the scarlet chuparosa, or humming-bird flower.

In writing of the Joshuas blooming north and east of Palm Springs, June Le Mert Paxton says "It has been several years since there has been such a prodigious display."

In a survey of central and eastern Mojave desert, Mary Beal has singled out several rich fields for wildflower devotees. The stretch between Mojave and east of Barstow and that north of Barstow and into the Calico mountains are both good flower areas. A trip through the west end of the Calicos to Cave Springs "rewards one with splendid sweeps of Mojave asters and hillsides ablaze with scarlet mariposas."

Along U. S. 66, on the way to Essex, is an abundance of desert lilies. Turning off the highway towards Mitchell's Caverns and the Providence mountains will lead one to an area of many unusual and interesting species. Although Miss Beal has found a number apparently peculiar to this region, the most conspicuous May flowers are the blue larkspur, scarlet mariposa, desert star, purple sage, scarlet paint-brush, Mojave aster and cliff rose.

The peak of Antelope valley's flower season will probably be between April 15 and May 15, according to Gordon W. Fuller. The poppy display is exceptional, and may be seen west of Lancaster along State highway 138. There are patches of the little bird's eye gilia and the yellow desert coreopsis throughout the valley. The best fields to see the waxy-stemmed and purple-flowered desert candle, or squaw cabbage, are east of Lancaster in the Hi-Vista area; on the road to Randsburg and the hundreds of acres between Kramer and Atolia. Scattered specimens are found between Barstow and Mojave.

Elmo Proctor, reporting for the Cronese valley, between Barstow and Baker, says:

"The lily season will, I believe, cover a longer period this spring than at any time within my memory. And they give promise of covering all the sandy places profusely, another rare condition. The heavy, luxuriant growth of the octopus like leaves indicates extra large, well shaded flowers."

Mines and Mining . .

Southwestern mining organizations are split again this year on the question of extending the moratorium on mining claim assessment work. Mining association of the Southwest, which has opposed during the past two years further extension, recently voted 4 to 1 in favor of continuing its opposition. Phoenix council, Arizona small mine operators association, on the other hand, wants the moratorium. The Interior Department has filed an adverse report with the senate mines and mining committee on a bill by Senator Murray of Montana to extend the moratorium. The Department has consistently fought proposals to suspend the annual assessment work requirement.

Phoenix, Arizona . . .

Arizona intends to stop theft of equipment from unguarded mines. Governor Jones has signed a bill making it a felony to possess or transport any mining equipment worth more than \$25, without written proof of ownership. Failure to exhibit bill of sale or similar document is prima facie evidence of guilt. The offense is rated a felony. Moreover all officers are required to halt any shipment and take possession of it, if credentials are lacking.

Las Vegas, Nevada . . .

Esmeralda county's chloride of potash mine—the only deposit of its kind in all the world except a small one in Italy—will be operating soon, according to the Goldfield News. Twenty years ago an attempt was made to work this alum mine, but it failed then because producers couldn't turn out alum pure enough to meet market requirements. Chief uses of alum are for baking powder, fertilizer, mixing dyes, making pickles crisp.

Jerome, Arizona . . .

This town will collect \$53,500 damages because the center of its business district is sliding downhill toward Verde valley. Phelps Dodge corporation and United Verde Extension company have agreed to pay this amount in order to settle suits filed by the city for slide damages. Jerome is built on the steep slope of Cleopatra mountain, 2000 feet higher than the valley. When a section of several city blocks started to slide, the town blamed mining operations and heavy blasts. Phelps Dodge and United Verde are Jerome's principal taxpayers and would have to pay major part of cost of repairs, in any case.

Phoenix, Arizona . . .

Governor Jones has appointed the following board for the new state department of mineral resources: Charles Willis, Phoenix; J. Hubert Smith, Kingman; Shelton G. Dowell, Douglas; Norman H. Morrison, Phoenix and A. C. W. Bowen, Winkelman. These appointees will select a director who will be paid \$4,200 a year. Purposes of the department: to promote mining development; study problems of prospectors and operators; help buyers to find sources of supply; list available mining properties; serve as a bureau of mining information.

Rye Patch, Nevada . . .

Only genuine emeralds found in the United States, so far as known, have been taken from a mine near here. A slab of pegmatite shows parts of three emerald inclusions, besides beryl, quartz, orthoclase, scheelite and molybdenum, reports Dr. William Foshag, curator of geology and mineralogy at the Smithsonian institution. The specimen came from the foothills of the Humboldt range. University of Nevada's school of mines professors say the discovery may lead to development of emeralds in commercial quantities.

Tonopah, Nevada . . .

Survey of a lava capped area of nearly 10,000 square miles southeast of Goldfield and east of Beatty, Nevada, might uncover gold and silver orebodies. So says Congressman James Scrugham, in a letter to the director of the U. S. geological survey. Scrugham asks if a small crew could be assigned to this exploration. Prospectors have reported rich gold float in washes from the area, notably Forty Mile canyon.

Mojave, California . . .

Otto & Wright have sold the Gold Prince mining property, 120 acres north of the Cactus mines in the Middle Buttes area near here. Buyer is the Cactus Mines organization. Price said to be between \$150,000 and \$200,000, with more than \$100,000 payment in cash.

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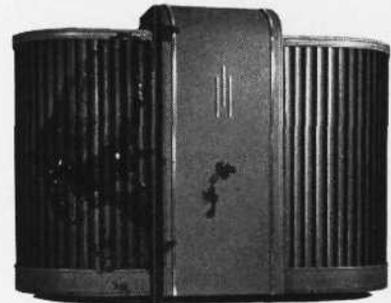


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Here and There ... ON THE DESERT

CALIFORNIA

El Centro . . .

Evan T. Hewes of El Centro has been re-elected president of the Imperial Irrigation district. Hewes was recently elected president of the California irrigation districts' association, which comprises districts with a total area of more than 4 million acres of land, valuation in excess of 1,000 million dollars and a rural population of more than 500 thousand people. He is also chairman of the river board and Colorado river commissioner for California, heading the agency responsible for protection of the state's interests in the waters of the Colorado.

Palm Springs . . .

Talks on desert topics were heard by more than 3200 persons at the Desert Museum here during the season and field trips attracted an increase of 200 per cent in attendance. At the annual meeting of the museum association Carl G. Lykken was re-elected president; Thomas W. Slavin, vice president and Herb Swanson secretary-treasurer. Director of the museum is Don Admiral.

Tehachapi . . .

Technique used by Egyptians 4,000 years ago for making imitation turquoise has been revived. After six years' research, translating ancient mss. in the British museum, this art employs a type of alkali found in Death Valley and the Panamint range. Result is a blue so vivid that a vase made by this method stands out even in a darkened room. Prof. Glen Lukens of USC worked out the secret process of the ancients.

Niland . . .

The desert yielded five different kinds of fish when a reservoir near here was drained. Golden mullet, common mullet, catfish, big scale carp and humpbacks were caught by J. M. Rainey, collector for the Steinhart aquarium in a tank truck. Carp and catfish probably drifted into the pond from the Colorado river, through canals of the Imperial irrigation district. Birds flying from Salton sea are believed to have dropped the mullet into the reservoir.

El Centro . . .

Imperial valley mineralogists and "gemologists" have held a meeting preliminary to organization of a society for which branches are planned in each city of the valley. Dr. Warren Fox, county health officer and enthusiastic collector, is one of the moving spirits. Prof. A. L. Eaton, Holtville, reported a countywide survey indicated possible membership of 100 for the society.

Death Valley . . .

Death Valley Scotty is ready to move on. His castle is for sale. He says: "Death Valley's gone to hell. It's a government park now. They wheel you in there with baby carriages. You can't sit down on a rock without a ranger at your elbow. Tourists swarm like gnats around a burro's tail. Where you uster smell bacon and beans at a prospector's camp, now you smell French cooking and steaming teakettles honk around filled with tinhorn beauties. They've even taught the Indian to use powderpuffs. Whadda I want fer the castle? It cost \$2,-381,000. We gotta see what it's worth to

anybody wants it. That's about 12,000 acres, and a 22-mile \$80,000 fence around the rocks." His partner, Albert Johnson added: "It's true. Whatever Scott says goes."

Desert Center . . .

Corn Springs, desert oasis in the Chuckawallas 65 miles east of Mecca, has been ravaged by fire believed to have been set by vandals. Stately palms and other trees were burned. Petroglyphs prove Corn Springs gave shade and shelter to prehistoric people as well as present day travelers and prospectors.

ARIZONA

Douglas . . .

At a cost of \$150,000, Phelps-Dodge corporation will build a 36-bed hospital here. Adjoining the postoffice, the new building will be of pavilion-type pressed brick, hollow tile backing, roofed with copper. Plans were announced by P-D vice president P. G. Beckett.

Tempe . . .

H. S. Miller of Tempe wears the crown of Arizona cotton king. He harvested an average of 597 pounds of lint from each of 16.2 acres, thus won the championship, awarded at annual meeting of the Pima High Yield club. Miller's net profit was \$37.38 per acre.

Bisbee . . .

Major H. D. Cranston, of Manila and Pasadena, drew a long bow and sent an arrow through the heart of a six-foot mountain lion in Ramsey canyon of the Huachuca mountains. Cranston came to Arizona for this purpose. After a Sunday hunt, Cranston spotted a lion in a pine tree. First shot sent the arrow into the lion's back. Arrow No. 2 went through the heart. Down tumbled the dead lion.

Prescott . . .

Twenty-one candidates elected to membership by the Smoki people will run the gauntlet later this spring, don the fox tails and feathers of the Antelope and Snake clans for the annual ceremonial August 6.

Payson . . .

Rep. John R. Murdock has asked Congress to make a national monument of Tonto natural bridge and to appropriate \$55,000 therefor. Twenty times the size of Virginia's natural bridge, the Tonto structure was formed from lime deposits from Pine creek, which flows into the East Verde river. Top of the bridge is 180 feet above the stream, its arch 140 feet wide. The span is 400 feet across. Fourteen miles northwest of here, it attracts numbers of tourists.

NEVADA

Reno . . .

Nevada ranchers will plant more than 32,000 small forest trees this spring. This is part of the state agricultural conservation plan. Plantings are made for windbreaks, shelterbelts, and woodlots. Varieties available through the university extension service at nominal cost include cedar, pine, spruce, ash, catalpa, walnut, elm, willow, locust, Russian olive.

Reno . . .

Water level in Pyramid lake has been lowered steadily since 1871, according to Harry Dukes, Truckee river water master. In that time the lake has lost exactly 66.02 feet in depth. More than five feet of water evaporate annually from the lake. Inflow is small, average net loss is one foot a year. The lake now covers 124,148 acres, will be dried up, at present rate, in 500 years.

Carson City . . .

Nevada hopes to establish a state museum in the old mint building at Carson City. Assemblyman Peter Amodei is author of a bill offered in the legislature for this purpose. Advocates say the state has lost priceless relics because there has been no centrally managed repository.

Boulder City . . .

Motor tourists to Boulder dam recreational area increased 33.3 per cent first two weeks in March, compared with same period in 1938. From March 1 to 16 this year 11,879 persons visited the area by car. Grand total for the period—including airplane and other methods of travel — was 1,538 persons, an increase of 29.2 per cent.

. . . .

NEW MEXICO

Santa Fe . . .

For distribution to tourists 250,000 official highway maps of New Mexico have been bought by the state tourist bureau. This is an increase of 50,000 over the 1938 supply. Joseph Bursey, tourist bureau director, has asked chambers of commerce to suggest sites for 20 additional markers for points of interest.

Ramah . . .

If rabbits lay Easter eggs—as many children believe—the harvest in El Morro National monument was practically nil this year, due to so many of the bunnies having starved or frozen to death. Scarcity of food, resulting from continued heavy snows, has made surviving hares so thin that they appear to be all ears.

Roswell . . .

Trapped in the area west of Roswell, 95 antelope have been transplanted to various sections of the state by game officials. Twelve went to Taos; 5 to Ghost ranch; 35 west of Hot Springs; 12 west of Las Cruces; seven near Las Vegas; nine to Wood and McKnight ranch; 10 to Espiritu Santo grant and 5 to eastern New Mexico state park.

Carlsbad . . .

Uncle Sam's 50-cent fee for using elevators to enter or leave Carlsbad caverns has been cut in half. Visitors kicked when they had to put up a half dollar to ride, plus \$1.50 for tour of the caves. Spring came to the caves March 27, when myriads of bats living in the underground chambers made their first foraging flight of the season.

Gallup . . .

Alfred Wallenstein, noted conductor, has added an Indian ceremonial drum to the list of symphony orchestra instruments. The drum came from the Cochiti pueblo. "It produces a peculiarly dull, heavy note, a sound that modern percussion units never quite achieve," said the conductor.

Solano . . .

New Mexico's newest town has been named Dioxide. The village gets its name from the fact that it was created by ice made from carbon dioxide—dry ice. This area in Harding county now has two producing wells, the largest 20 million cubic feet of carbon dioxide gas per day. The gas is found at a depth of about 2100 feet in

mixed arkose and shales. Seventeen miles of pipe line have been laid from the wells to the plant of the company, on a new siding of the SP.

UTAH

Salt Lake City . . .

Utah legislature has appropriated \$5,000 toward the \$250,000 monument which will mark the spot where Mormon pioneers first saw Salt Lake valley, heard their leader Brigham Young say, "This is the right place. Drive on." Mahonri Young, descendant of Brigham, has made a model of the 75-foot granite and bronze shaft. Its central figures are Young and two of his counselors. Other figures portrayed include Father Escalante on arrival at Utah lake in 1776, and the Donner party, which broke trail for the Mormon emigrants over the Wasatch mountains.

Vernal . . .

Federal aid highway projects for Utah costing \$5,000,000 are scheduled for fiscal year beginning July 1, 1939, according to the state road commission.

Salt Lake City . . .

For the first time since its dedication 40 years ago, the huge gold and white room of

the Mormon temple here was used for a meeting of 2,000 members of the priesthood during a church conference held in April. The meeting was a feature of the 109th annual conference. Non-members of the church were refused admittance. Sessions held in the Tabernacle across the square from the temple were open to the public.

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DESERT QUIZ ANSWERS

(Questions on page 10)

ANSWERS

- | | |
|-----------------------------------|--------------------------------------|
| 1. Death Valley,
El.—279.6 ft. | 11. Filifera |
| 2. Strange rock
formations | 12. Yuma |
| 3. Arizona | 13. Boundary peak,
El. 13,145 ft. |
| 4. Fouquieria | 14. Reptile |
| 5. River | 15. Kill game |
| 6. Katcinas | 16. Petroglyphs |
| 7. Taos | 17. Utah |
| 8. Tea | 18. Quartz |
| 9. Sand dunes | 19. James |
| 10. Cardenas | 20. Black canyon |

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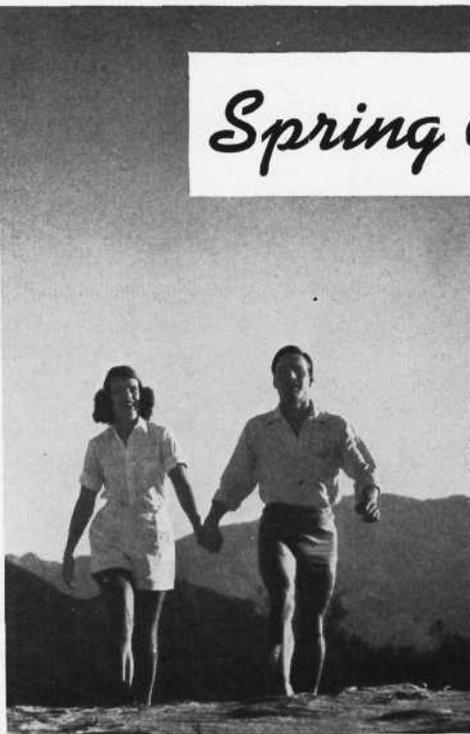
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INN**



TWO BUNCH PALMS

Cabot Yerxa, whose homestead is on the desert northeast of Garnet, California, won the prize offered by the Desert Magazine in March for the best description of the oasis shown in the picture below. Yerxa's story is printed on this page.



Washington and James McDonald to survey Section 32 in which Two Bunch Palms is located. The original corner stones erected by them are still in place. The surrounding desert was not surveyed until 1903, nearly fifty years later.

Following the gold days of 1849 prospectors spread out over California looking for new fields. Two Bunch Palms was a favorite camping spot for them in this locality. Of these the last two were Coolidge and Diebold, the latter known as Dutch Frank, who have long since died.

Desert palms grow very slowly. Some of the larger ones must be over three hundred years old. A few have been injured by careless campers and have blown down, but happily new ones have started. And so they will perpetuate themselves into the dim future just as they have come from the remote past, and be known always as Two Bunch Palms.

To reach Two Bunch Palms, drive to Garnet on highway 99 (this is 4 miles north of Palm Springs).

At Garnet take aqueduct paved road going north 1½ mile, then turn right 3½ miles to old empty wooden school close to pavement. Turn left at this point on good desert road. Two Bunch Palms can now be plainly seen. The road goes straight almost to the hill, then angles left to the palms.

Leaving Two Bunch on return, for variation of scene, continue up wash toward Little San Bernardino mountains for quarter of mile. This road then turns right through Miracle Hill Ranch, old Cahuilla Indian camp ground, Indian walk-in well, hot water wells, and thus encircles Miracle Hill back to Two Bunch Palms and returns to the school. This lengthens the trip about one mile.

Springs at the lower group of palms recently have been walled in with rocks, making an attractive pool, and other improvements are being made by Tom Lipps of Palm Springs who now owns the property.

By CABOT YERXA

THE oasis pictured in the March issue of the Desert Magazine is "Two Bunch Palms" so named because there are two groups of palms. These are referred to locally as the "upper bunch" which shades a shallow well of water, and the "lower bunch" which has a small spring at its base.

Standing with their heads together, like warriors discussing plans for battle, they are on a sandy bench 30 feet above the level desert which was once an ancient sea bed. It is a favorite spot for photographers and artists.

Back of the palms are two or three hills at the base of which water can be obtained easily. Some of this water is hot and reaches temperatures to 160 degrees. In one of these hills there is an ancient Cahuilla Indian well. These old desert Indian water holes were dug so that women could walk down an inclined trench and fill earthen jars by dipping up water at their feet. That Indians lived near Two Bunch Palms for generations is evidenced by the many arrow heads, metates, stone implements, pieces of pottery found here.

The fact that dependable amounts of water could be obtained near the palms was known to early travelers in those stirring days following the discovery of gold in California. In the years of 1855-56, the surveyor general sent Henry

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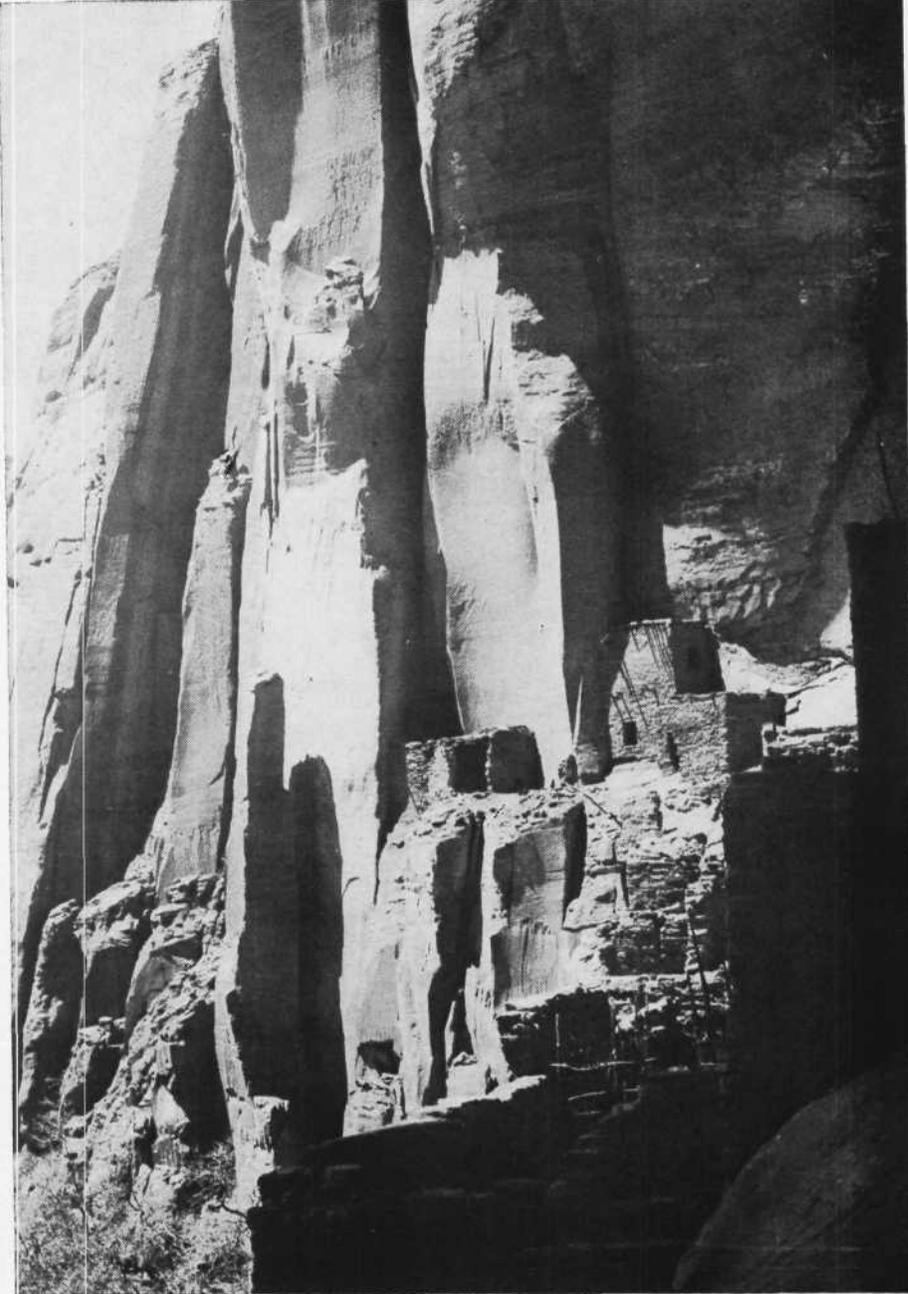
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Prize announcement for May

While the ancient Indians who built their dwellings in this spot were interested primarily in the security afforded by these precipitous cliffs, there is no doubt that they were also attracted — as visitors are today—by the majestic sculpturing which Nature created here.

This is one of the scenic spots in northern Arizona, a place in which prehistoric ruins and natural beauty make a double attraction for the motorist who finds pleasure in exploring the desert country.

Readers of the Desert Magazine will want to know more about these cliff

dwellings, and the scenic area in which they are located and in order to bring out all available information a \$5.00 cash prize is offered for the best manuscript of not over 500 words identifying and describing the place pictured above.

Entries should tell the name, exact location, accessibility by highway or railroad, distance from the nearest paved boulevard, and any historical or legendary information which may be available. In other words, tell everything you would be interested in knowing about this spot if you had never seen it.

Letters should be addressed to Land-

marks department, Desert Magazine, El Centro, California, and the judging will be on April 20. The winning answer will be published in the June number of this magazine.



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To Bed
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BOOKS OF YESTERDAY AND TODAY

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

THERE'S ADVENTURE ALONG THE MEXICAN BORDER

Mary Kidder Rak, in **BORDER PATROL** published in 1938 by Houghton Mifflin company, gives an authentic account of one of the most colorful phases of the Southwest. The Immigration border patrol has been the inspiration for many tales of fiction—many of them little related to truth. Mrs. Rak, using only first-hand information given by the officers themselves, has written a book not only more valuable but much more entertaining than half a dozen pseudo border stories.

The organization of this branch of the U. S. Immigration and Naturalization service, its functions and the experiences of its members in line of duty are told in a series of chapters related only by the central activity of the Immigration officers.

Officially the duty of the Border Patrol is to prevent the illegal entry of aliens and to return those who have already entered. Patrolling the border, however, is a more involved affair than this. There is a constant overlapping of the services. If the alien prisoners have entered with contraband goods, they are turned over to the customs officers. If they possess narcotics, they are under the jurisdiction of the treasury department. Criminal aliens are given into the custody of local peace officers.

Until 1929 there was no legal way to punish aliens who had crossed the line illegally—they could only be returned to their own side. And many of them came back as promptly as they were put out. This easy passage was somewhat allayed by use of a 125-foot tower as a lookout at El Paso, the district headquarters. With the installation of radio broadcasting apparatus the method of apprehending these "trespassers" has been revolutionized. Towers are now being built farther down the Rio Grande. From these lookouts, observers with field glasses can report to headquarters every movement within a radius of two and one-half miles.

The use of radio and fingerprinting has changed patrol technique but none of the interest of the work has been lost. Because the Immigration officers have won the confidence of border people, they frequently find themselves with some very odd jobs to perform—jobs not strictly in line of duty. Rounding up cattle rustlers and tracking down a ghost; rescuing dupes of smuggling rackets and collecting wedding fees — it's all in a day's work for the Border Patrol.

The strict rule of silence keeps much

of the work of the patrol out of ordinary news channels, makes this book especially interesting to those who would like to know more of the under-cover drama of the patrol service. Mrs. Rak so far won the confidence of the officers that she was not only given access to the records at various headquarters in Texas, New Mexico and Arizona, but she enjoyed intimate glimpses into scores of adventures never before printed. Some of the sidelights were surprising even to brother officers.

LUCILE HARRIS.

ON THE TRAIL OF THE LOST DUTCHMAN

Of all the tales of lost treasure which have come out of the Southwest, that of Superstition mountain in central Arizona has perhaps fired the imagination of more men than any other. Innumerable are the plots and subplots woven about the legendary gold mines of old Superstition.

Barry Storm, in a little book **TRAIL OF THE LOST DUTCHMAN** published this spring by Goldwaters of Phoenix, gives his version a setting in Mexico, 1757. The story of the silver-mining Peralta family, from the 18th century to 1931, has been the source of many searches for the eight bonanzas presumably discovered in 1846 by the three grandsons of the first Peralta, who had come to Mexico from Barcelona.

Repeated failure and tragedy are not likely to daunt future lost gold searchers—the legend is too alluring; the clues are too fascinating. Each version makes one feel as if the treasure were within the grasp of his hand.

This sense of reality is heightened by the simple narrative style followed by the author and by his listing of clues which should lead to the mine. These include abandoned prospecting tools and weapons, discarded harness and mule shoes, Indian arrow and lance heads and parts of old trails. The most convincing signs, Mr. Storm says, are the Spanish mining symbols, some of which have been cut into rocks on Superstition. He encourages the adventurous by his final words, "May you be the one to find it!"



FOR PEACE

BY GASPAR B. DARUVARY
Hemet, California

Not what we have, but what we use;
Not what we see, but what we choose—
These are the things that mar or bless
The sum of human happiness.

The things near by, not things afar;
Not what we seem, but what we are—
These are the things that make or break,
That give the heart its joy or break.

Not what seems fair, but what is true;
Not what we dream, but good we do—
These are the things that shine like gems,
Like stars in fortune's diadems.

Not as we take, but as we give,
Not as we pray but as we live—
These are the things that make for peace,
Both now and after Time shall cease.

SAGEBRUSH VERSES

BY ANDREW A. VAN BRUNT
Salt Lake City, Utah

Beneath the moon where sky and desert meet,
I hear again the night-bird's lonely cry;
I see the sagebrush stretching mile on mile,
I note the years unnumbered hasten by;
I see a trail a-winding toward the west,
'Tis lost amidst the shadows of the night,
But I shall walk with perfect confidence,
For God has promised He will be my light.
The trail across the desert is not smooth;
The sand is hot, and many thorns are there;
The bitter sagebrush irritates my throat,
And acrid smell of greasewood fills the air.
The gorgeous bloom of cacti lures me on;
Destruction often lies beside the way;
But God has promised He will be my guide;
I trust in Him for He's my only stay.

VOICE OF THE DESERT

BY MAUDE M. DUFRÉSNE
San Diego, California

The lone and silent desert seems
A mystic place for thought and dreams—
Rugged, rock-bound mountains where silence,
peace abides—
Pools of blue shadows on their tawny sides—
And oft' in wondrous colors only God can
trace—
It's like a smile transfiguring a beloved face.
White arroyos where streams rush down to
thirsting sand
When storm-clouds pour their showers on the
land
And waste of lone, bare sand-dunes lying
white
Against transparent blue of mountain is a
sight
One can't forget. Cruel, perchance, in noonday
sun,
But wondrous when the long, bright day is
done,
And myriad stars effuse their elfin light
Then thro' the clinging silence of the night—
List to the voice of the desert — 'tis only
the *soul* that hears
That haunting, vibrant music like an anthem
to the spheres.

CREED OF THE DESERT

BY JUNE LE MERT PAXTON

Gracious lady of the Yucca tribe
Dwelling there on the mountain
side.

Tell us how it is, you know
Just when to let your candle glow.



Monument Valley, Utah — Photograph by George E. Barrett

And So . . . the Desert!

BY PEARLE R. CASEY
Gunnison, Colorado

Late afternoon . . . the day, the last of Six
MOMENTOUS ONES . . . the Mighty Hand
had grown

Fatigued . . . so much to do with soil and
stone

And water of a world; to surely mix
The colors of a sunset and the sea . . .

HE paused, in retrospect: a mighty heap
Of fragments lay about: so, thriftily,
The WORKER pondered how He best might
keep

His picture perfect, yet make use of these
Discarded hills and clouds and stunted trees.

There were no rivers left, nor lakes . . . but
row

On row of mountains: swiftly then, the HAND
Set juniper and cedar thickly, so
The rocky harshness melted into sand
And made great distances; a purple sheen
Arose to blend with gold and violet . . .

(For shadows now began to fall between
The morning and the evening) . . . and not
yet

Might the Creator rest; the sage . . .
gray-blue . . .

Strange cacti and the yucca closely set
Together seemed to make the vision true
While vast vibrations rose until they grew
Into an element of holy grace.
The night let down her blessing on a place
More silent than all others He had made . . .
A dim expanse, wherein a shadowed Face
Shone through the nuances of light and
shade . . .

Then, lest it be thought desolate, He drew
Up from the deep His priceless gift of peace
And spread it like a benediction there,
That, in THE DESERT, souls might find
release
And burdened hearts new impulses for
prayer.

LAMENT FOR THE "GOOD OLD DAYS"

BY ROBERTA CHILDERS
Goldfield, Nevada

Ol' rattlesnake woefully shook his head
And his poor, thin voice did quaver,
"These dudes shore dress like old cowpokes—
But I'm durned if they've got the right flavor."

LUGGAGE FOR HEAVEN

BY DOROTHY L. PILLSBURY
Albuquerque, New Mexico

I packed my bag with piety as my Father
told me to,

With psalm and prayer and litany
And sonorous words. Ah pity me!
Part way to Heaven I opened the bag:
It felt stone-heavy on my shoulder's sag.
All that was there was a trace of mold
Waving dank fingers in the musty cold.

I packed my bag with duty done as my
Mother told me to,

With work and wan-faced charity
And sacrifice. Ah misery!
Half way to Heaven I opened the bag:
It felt world-heavy on my shoulder's sag.
All that was there was a little fine dust,
White as a bone and dry as a crust.

I packed my bag with beauty as my spirit
told me to,

With star and pigment and symphony
Of space directed winds. Ah ecstasy!
Almost in Heaven I opened the bag:
It felt like wings on my shoulder's sag.
Seraphs in silver on a desert blue throne
Smile at my treasure and point to their own.

ARIZONA NIGHTS

BY MRS. E. A. KENT

I love the land of the desert—
From sorrow it gave me release;
I went there once with a burdened soul
And its solitude brought me peace.
I went there once with an aching heart
For a love that existed in vain;
And I found the bud of a blossoming hope
That smiled through the cloud and the rain.

No nights there are, like the desert nights
With the moon on lowly clod;
I gazed with awe on those tranquil stars—
For in the desert, I found God.

DESERT ALCHEMY

BY NELLIE MAY DORAN
San Diego, California

Regretfully I bid adieu
To winding trails through desert sand.
I had a loan of care-free days
And spent them in this sun-drenched land.
Today I ride away again
To my own home out by the sea,
My little house awaits me there,
With cherished things I long to see.

And yet I know I soon shall yearn
To see this desert home again
When from accustomed tasks I turn,
From city streets, from fog and rain.
The beauty of the tranquil days,
The peace that comes with starlit nights,
The Desert in mysterious ways
Alone can set my soul at rights.



By RANDALL HENDERSON

SOME of the folks in the City of San Diego have worked themselves into quite an emotional frenzy over the plans of the California Park commission for including the Vallecito and Carrizo desert areas in the new Anza Desert State park.

Opponents of the park program assert there are many thousands of acres of agricultural and mineral lands within the proposed park reserve which would be lost to private development if the state acquires title to the federal land in this area.

Having tramped over that sector of the desert more or less for the last 18 years I am puzzled to know just where all these farm lands and mineral acres are located. And even if they existed I would not regard it as a serious crime to withhold them from exploitation for a few years at least. I have a feeling that future generations of Americans are going to direct some rather bitter criticism toward their forbears for the greed with which the natural resources of the soil were consumed during the present and previous periods in United States history.

The truth is that the proposed Anza park region for the most part is a desert wilderness whose only assets are its historical background, its scientific interest, and its scenic wealth—and unless steps are taken very soon for the protection of these resources they will cease to have any value to anyone.

* * *

For those who are interested in knowing what progress is being made by the Department of Interior toward opening new desert lands under the Izac Five-Acre-Tract law, I can only quote from the following letter received from Congressman Izac this week:

"Periodically I have been pressuring the Department to speed up rules and regulations on the Five-Acre-Tract law but they say it is a tremendous task and are going ahead with it as fast as they can."

* * *

What can we do to protect the desert oases against careless and ignorant humans? Word has just come to me that fire has swept through the little palm oasis at Corn Springs in the Chuckawalla mountains of Southern California.

I would not dare print what I think of the idiots who were responsible for that. I know there are many other Desert Magazine readers who love that spot as I do, and who feel the same way about it.

For many years my old prospector friend Gus Lederer was the self-appointed guardian of Corn Springs. He built a

fence around the main group of palms and made a little park of it. But Gus has gone on his last prospecting trip—his grave is out among the cacti and greasewood not far from the springs—and now the ancient petroglyphs on the rocks there are daubed with paint, and the palms are burned.

I wish the Riverside county supervisors would become interested in the protection of their desert landmarks—or else turn them back to the Indians. The Cahuillas have done an excellent job of keeping the vandals under control in Palm Canyon.

* * *

I wanted to get away from the typewriter and the telephone and the jittery humans who worry about high taxes and the New Deal and the insanity of Mr. Hitler—and so I threw my packsack in the car and headed for Palm canyon.

The paradox of Palm canyon is that it is the best known and one of the least known of all the mountain gorges in the Southern California desert. Thousands of people park their cars on Hermit's Beach every season and follow the winding stream through the jungle of Washingtonias which grow in the lower canyon. But few of these visitors know the beauty of that spot seven miles beyond where this stream of water plunges over an 80-foot precipice and veils the walls of the cliff with a snow-white spray as it dashes against the boulders below.

No trail leads to these falls—and as far as I am concerned none need ever be built. It is good for folks to go far away from lodges and cookstoves and radios and automobiles—and trails—occasionally to find if they can live alone with themselves for a few hours without being bored. The falls in Palm canyon should be preserved for just such pilgrimages as this.

My concert that night was the music of clear mountain water rippling over the rocks in the stream bed, and I slept on a little sandbar with a canopy of palm fronds overhead.

Those palm fronds will be swaying serenely in the clear desert air and that water will be tumbling down along its boulder-strewn course long after the despots who are strutting across the world stage today have passed from the scene.

And this is a comforting thought. The real things—the beauty and truth of this earth go on and on. Man in his ignorance may destroy temporarily—but fortunately there is no permanence to the evil he brings to this world.

These are some of the things that passed through my mind as I lounged in the shade of those palms last weekend.

Secluded desert canyons—and there are at least a hundred thousand of them in the southwestern part of the United States—are great tonic for that human ailment commonly known as the jitters.