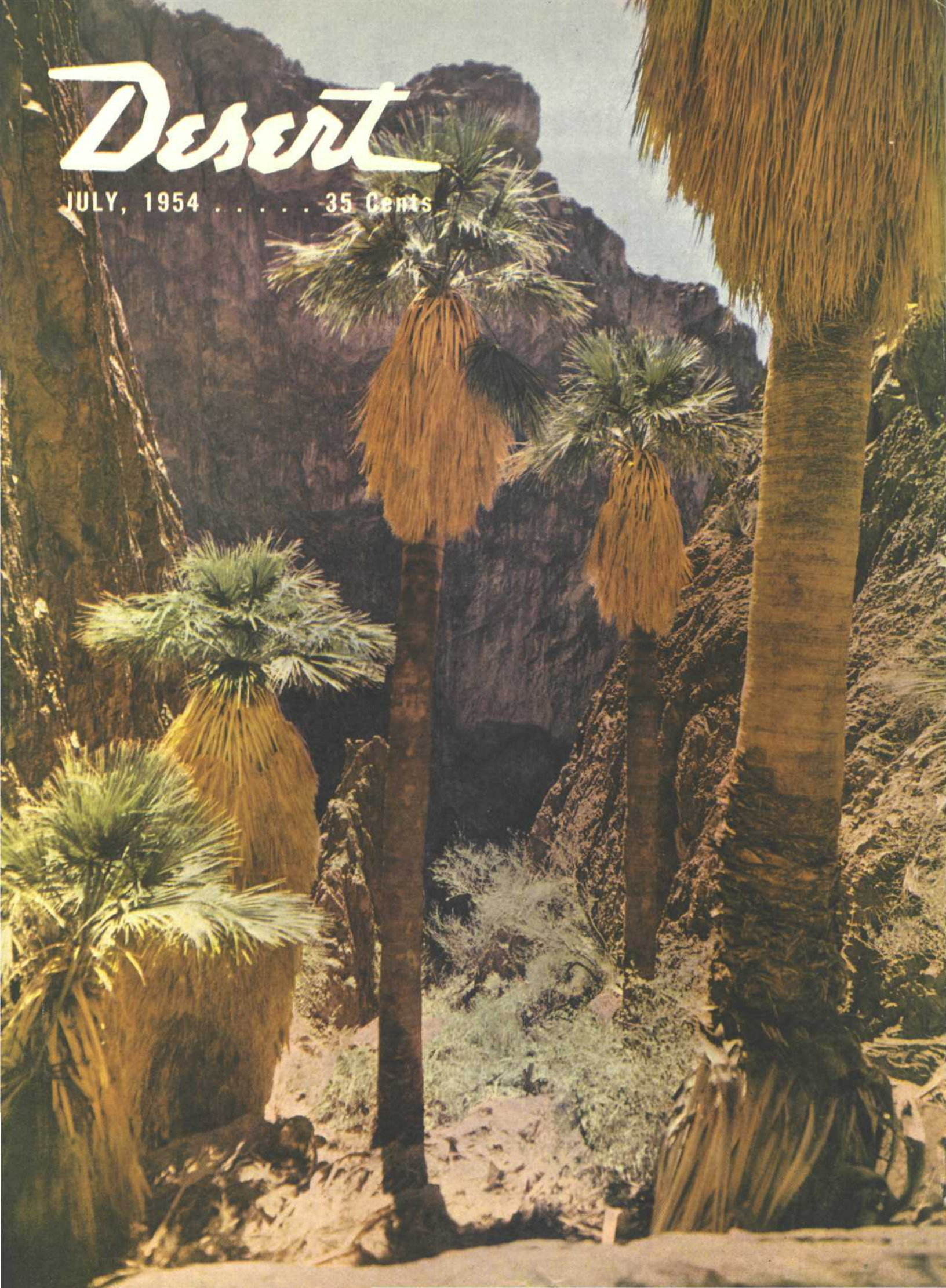


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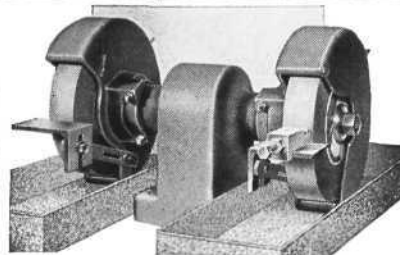
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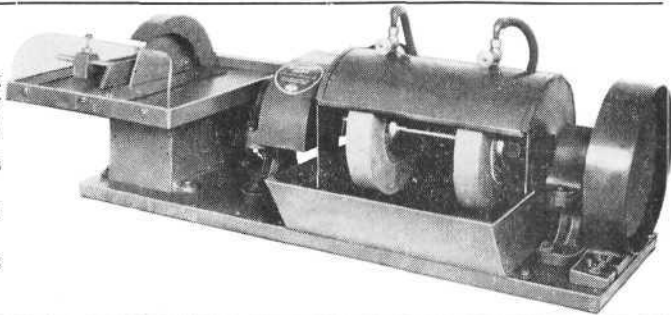
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DESERT CALENDAR

June 21-July 2—Fourth Annual Conference of Southwestern Writers and Writers' Workshop. Arizona State College, Flagstaff.

July 1-31—Special Exhibit, new acquisitions of Indian pottery, predominantly from Mexico. Southwest Museum, Los Angeles, Calif.

July 2-4 — Southwestern All-Indian Pow-Wow, Flagstaff, Arizona.

July 2-4—Apache Fiesta and Devil Dance, Mescalero Reservation, New Mexico.

July 2-5—Rodeo, Orem, Utah.

July 2-5—21st Annual Hopi Craftsmen Exhibition. Pottery, basketry, weaving, embroidery and silver work. Indian demonstrators. Museum of Northern Arizona, Flagstaff.

July 3, 4—Annual Damboree, Boulder City, Nevada.

July 3-5—Fiesta and Santa Fe Railroad Pageant, Las Vegas, New Mexico.

July 3-5—Fiesta and Gadsden Purchase Centennial Celebration, La Mesilla, New Mexico.

July 3-5—Frontier Days Rodeo, Prescott, Arizona.

July 3-5—Fourth of July Celebration and Rodeo, Tooele, Utah.

July 3-5 — Desert Peaks Section, Southern California Chapter Sierra Club climb of Mt. DuBois (13,545 feet), Montgomery Peak, California (13,442 feet), and Boundary Peak, Nevada (13,145 feet). Rendezvous at Dyer, Nevada.

July 3-5—Rodeo, Reno, Nevada.

July 4—Fireworks at White Sands National Monument, near Alamogordo, New Mexico.

July 4 — Rodeo, Silver City, New Mexico.

July 4—Rodeo, Cimarron, New Mexico.

July 8-10 — Ute Stampede, Nephi, Utah.

July 8-11—Rodeo de Santa Fe, Santa Fe, New Mexico.

July 10-31 — "The Navajo Today," craft exhibition and outline of his way of life and history. Museum of Northern Arizona, Flagstaff.

July 20-24—"Days of '47" Pioneer Celebration and Rodeo. Salt Lake City, Utah.

July 24—Pioneer Day, Mesa, Arizona.

July 24—Pioneer Days Celebration, Tooele, Utah.

July 25-26—Corn Dance, Taos Pueblo, New Mexico.



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JULY, 1954

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Address Correspondence to Desert Magazine, Palm Desert, California

We Built for Summer Comfort

One can enjoy the desert summers, even when the temperatures go to 115 degrees or higher, if the home-builder plans well and takes advantage of the most effective insulating and air-cooling devices now available. And it can be done without excessive cost. Cyria and Randall Henderson spent two years planning their home for summer comfort—and back of that were many years of desert living. Here are some of the answers for those who are planning to buy or build on the desert.

By RANDALL HENDERSON
Floor plan sketch by Margaret Gerke

7HIS IS the first week in June, and Cyria and I have been living in our new desert home nearly six months. Already this season we have seen the outside thermometer rise to 104 degrees — and we were comfortable, even with our cooling system operating at only half capacity.

High ceilings and good air circulation are two important factors in this home—built for summer comfort on the desert. Floor space, figuring outside slab work at one-half footage, is 1777 square feet, and the cost within a few cents of \$10 a square foot.

We built for summer comfort, and we believe now that we have attained what we wanted—a light, airy home where, through the torrid months of July, August and September we can work and study and play indoors, unharassed by the 110 to 116-degree heat waves outside our walls.

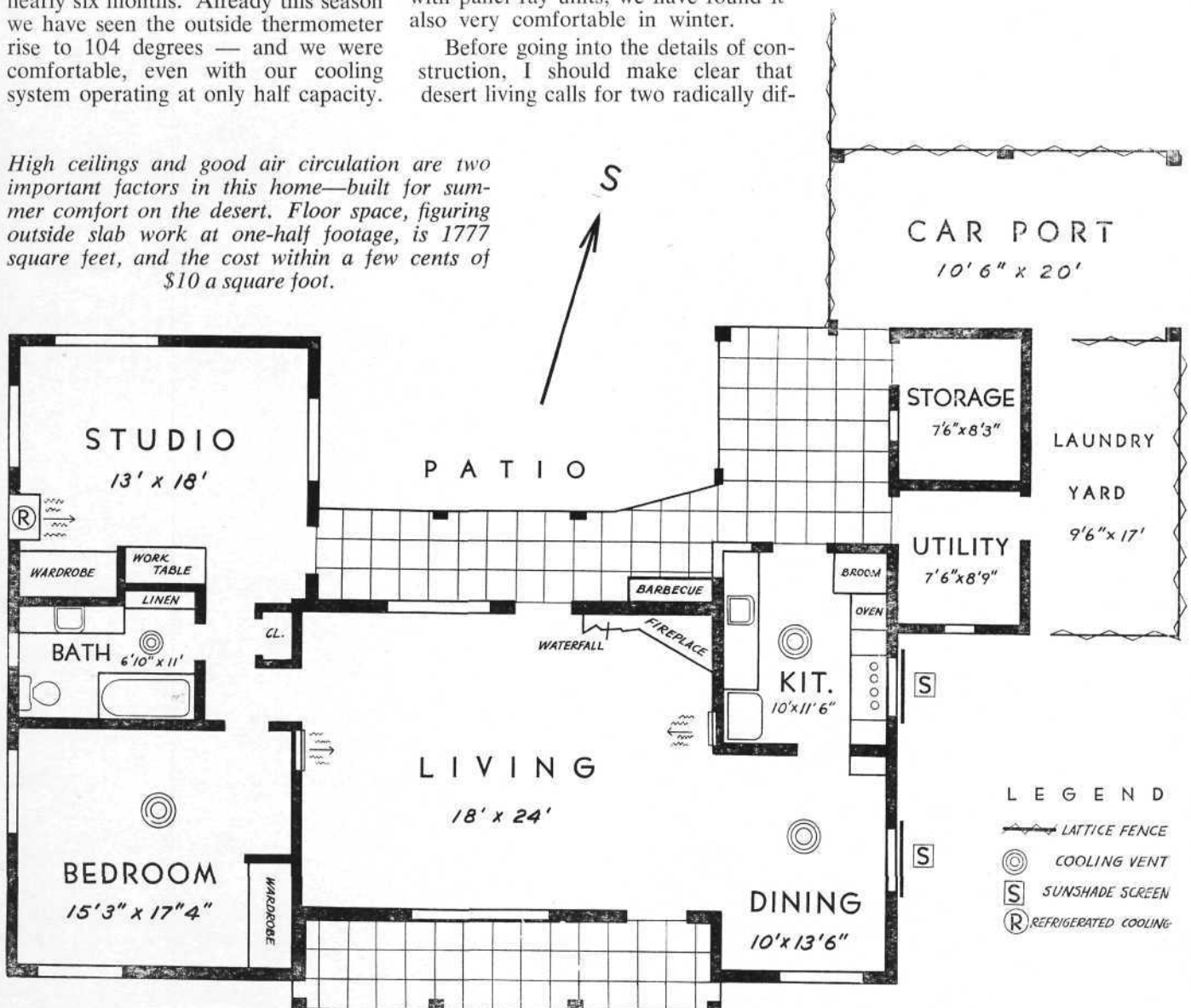
Ours is an unpretentious two bedroom home built on the sandy floor of the Coachella Valley in California on a site 350 feet above sea level. The extra bedroom will serve most of the time as a studio and library.

In general, we followed a modified rancho type of architecture. We omitted all the modernistic architectural frills. Its arrangement follows conventional patterns. We built with summer comfort as the primary objective. Style was secondary. But, heated with panel ray units, we have found it also very comfortable in winter.

Before going into the details of construction, I should make clear that desert living calls for two radically dif-

ferent types of planning. Some of our neighbors down the street are retired folks who spend only their winters on the desert. When summer comes they go to the beaches or mountains. They want big glass windows which will let in a generous share of winter sunshine. Insulation and cooling are not important because they are away when the summer sun is pouring in through the highly-conductive glass of those expansive windows.

The kind of home that serves them best would be unbearable to us—because with the exception of a short summer vacation, we spend the entire year in our desert home. Our problem is to keep the summer sunshine out. It is more important to us to keep the direct and reflected rays of the sun out





Front view, from the northwest, looking toward the Santa Rosa Mountains in the background. The young shade trees were spaced to protect windows from the late afternoon sun. The power pole doesn't add to the view in that direction—but it is not a total loss, for a mocking bird sits on the cross-arms and gives us a concert nearly every morning.

during the summer than to let them in during the winter—and since no one has yet perfected a type of glass which will absorb the sun's rays at one season of the year and deflect them at an-

other season, we had to arrive at some kind of a compromise.

We gave the problem a great deal of study. For two years we kept a drawing board in the apartment we

were occupying, sketching and erasing, observing the shadows at different seasons and at varying times of day. We noted the direction and velocity of the winds. We observed that through

Rear view, from the southeast, with patio (in process of landscaping) and porch which will serve as an outdoor dining room. The three cooling units may be seen in this picture. On the east wall is the evaporative cooler under the cornice, and the refrigeration unit in the studio wall lower down. The second evaporative unit on the porch is not visible from the front of the house.



the summer months a gentle northeast breeze would cool our bedroom at night if provided the proper outlets for circulation. Also, that our sandstorms generally blew in from a westerly direction.

The obvious conclusion was to put the bedrooms on the east side of the house with windows at bed level and doors where the best movement of the air would be insured; and, since both the sand and the most potent sunshine come from the west, to erect as effective a barrier as was practicable against these invaders.

I am sure that the building of a home calls for at least 10,000 decisions. One of the most important in the early days of planning is whether to employ an architect or a draftsman. The answer to that depends very largely on how many of those decisions you are willing to make yourself, and how well qualified you are to make them.

There is considerable economy in retaining a draftsman to make your plans—but don't do it unless you know exactly what you want, and are adept enough at reading plans and specifications to know what you are getting when the sheets are spread out before you. Structural changes and extras after work has been started will add up to more than an architect's fee, if there are many of them.

An architect will make most of the decisions for you—but do not assume that because he has a fine reputation in his profession he knows how to build a home for summer living on the desert. Planning for comfort in a 115-degree desert with 350 days of sunshine a year is a highly specialized job, and I can show you hundreds of homes in the Coachella Valley resort area—planned by reputable architects—which are glowing examples of how NOT to build a desert home for summer occupancy.

My main criticism of the architects is that, like the engineers and designers of some of today's automobiles, they too often are so eager to achieve something new and different—they call it modernism—they lose sight of the basic functional purposes of the home as a place for comfortable and convenient living.

For real summer comfort, no one has yet made much improvement on the basic ideas of California's first white settlers, the padres from Spain and Mexico, and the Pueblo Indians who were designing desert homes before the padres came. They had only mud for insulation, but they used it generously both in the walls and roof, and they achieved a remarkable degree of comfort in their dwellings.

There is a current fad among architects for bedroom windows that are shoulder high. It makes for privacy, they say. What they say is true—it does make for privacy, but the price you pay, as a summer dweller on the desert, is too high. You either swelter in a breathless room, or keep the coolers going all night, which is worse, from the standpoint of your health.

You can get all the privacy you want with drapes and window shades. If you want to sleep in comfort, then insist that the windows be at bed level. After you turn out the lights at night you can roll back the drapes and open the windows wide and let the night air surge in and through your bedroom.

Our home is on a corner lot with streets on the north and west sides of us. The house faces north, with a 15-degree swing to the west. We had it turned at an angle because our most attractive view for eight months of the year is the snow-capped peaks of San Jacinto and San Geronio to the northwest.

In these days when it is the accepted procedure to build at any angle you wish, and the backyard may be a prettier landscape than the frontyard, it doesn't make much difference which way your lot fronts. But it is very important that you keep the sun and wind directions always in mind in planning both the house and the patio that go on the lot.

We had a problem of drainage to consider before construction was started on the house. Our location is a desert cove with mountains close by on three sides. Twice in the last 30 years I have seen cloudburst storms send a sheet of water down over the floor of the cove—water that would do serious damage to a structure if proper drainage had not been provided. Our solution was simple. We built a 3-foot wall of native stone along the south or uphill side of our site.

For wall construction we selected pumice blocks, 4x8x16. They are a little more expensive than cement, and our contractor estimated he could have saved \$800 by using frame and stucco. But we wanted insulation, and pumice seemed the simplest and most effective way to get it. The walls were left unplastered, but two coats of oyster-white waterproofing were applied to the outside.

We provided eaves and cornices all around the house three feet wide. Obviously, the wider they are the better protection there is for the walls. I believe three feet is the minimum that should be used for desert construction in this type of home.

From the standpoint of interior

cooling, high ceilings are better than low ceilings. With this in mind we specified a beam ceiling for the living room, and 8 foot 6 inch ceilings elsewhere with plaster finish. The plastered rooms have a double layer of aluminum foil between the ceiling joists. I am not sure this is more effective than rock wool or some of the other composition insulating material, but I have had considerable experience with aluminum and know it does its job well. The cost is approximately the same.

To provide roof insulation in the living room we specified 2-inch tongue and groove sheathing, with a half inch of composition board on top of that and a white composition paper and gravel roof over the entire house.

It is possible to secure more effective roof insulation than we specified, either by putting on a double roof or by using perlite or some of the thick composition shingles of insulating material. But the formula we chose is effective enough and it serves well for folks of moderate income.

We built on a plain slab floor and then applied acid stain to get the coloring we wanted. For our desert climate, reinforced concrete is economical and effective, and is good insurance against termites.

Volumes could be written about air-cooling. Building for summer comfort, the owner has to make a choice between two, or possibly three cooling systems. He may select evaporative, refrigeration, or radiant cooling from pipes laid in the cement slab. Very little of the radiant cooling has been done to my knowledge, and I am not qualified to comment except to say that it is the most costly of the three methods for it involves a central water cooling plant.

I resided on the desert many years when our only cooling was the blast from a floor, table or ceiling fan. In 1922 one of my neighbors in Calexico was experimenting with a homemade contraption in which he mounted a fan to blow through a screen of wet burlap. That was one of the forerunners of today's evaporative cooling systems. I have had one in my home since they first came on the market. During the last six years I have worked in an office with refrigeration. Thus I have had an opportunity to compare the strong and weak points of both evaporation and refrigeration.

Most of the time I prefer evaporative cooling, although it has its disadvantages. According to generally accepted engineering standards an evaporative cooler should change the air in a room every two minutes. On that

basis, a house with 12,000 cubic feet of interior space should have an evaporative unit of 6,000 CFMs (cubic feet per minute.)

When we contracted with Cliff Gentry of Indio to engineer and install our cooling system we told him to make it over-size. Actually, he put in two 3500 CFM units, with over-size ducts and grills. Theoretically that is cooling capacity for a house of 14,000 cubic feet.

Since our interior measures only 10,500 cubic feet we are getting a change of air every 1½ minutes. Our units operate independently and are wired to operate on fan only, or at low and high speeds, with convenient push buttons inside for control. Most units these days are equipped with circulating pumps so very little water is required.

Cliff did a good job for us. Already this season we have had several days over 100 degrees and so far we have used only one of the units, and much of the time on low speed.

One unit, located on the back porch roof, serves the kitchen and dining room with round diffusion grills in the ceilings and a wall register high up in one end of the living room. The other unit, located under the east cornice, serves bedroom and bath and also has a wall register in the living room. Thus both units bring cool air to our living room, and our home has some degree of insurance against those occasional failures which occur in evaporative coolers.

As long as the atmosphere is dry the evaporative coolers serve well. But those desert dwellers whose homes are in or near large irrigation projects have some days of humid weather, especially in the late summer. When humidity is high the evaporative units bring in excessive moisture—too much moisture for comfort.

Cyria and I have made provision for those humid days by installing in our studio a three-quarter ton one-room refrigeration unit. It is built into the wall and probably will be used only occasionally because normally we find that by opening the right windows and doors we can divert a comfortable air current into the room from our evaporative coolers. But it is there, and when the barometer mounts too high we will retreat to the comfort of refrigerated air—which is always dry air.

Under normal atmospheric conditions we find that we are just as comfortable in 80 to 84 degrees of evaporative cooling as we are at 72 to 74 degrees of refrigerated cooling. The movement of the air makes the difference—more rapid evaporation of perspiration.



Fireplace of native quartz rock, with waterfall that provides refreshing music indoors when the thermometer outside is 115 degrees.

We like the gentle movement of the fresh air which comes from the evaporative units. With refrigeration, the windows and doors are kept closed, and while enough new air is brought in through the unit to make a complete change every 10 minutes, we prefer the air that changes every 1½ minutes, even though it gets a little sticky on humid days.

Although I have been living with evaporative cooling units for many years, I always shut them down before I go to sleep at night. If I failed to do so I found myself chilled and uncomfortable before morning. On hot nights we keep the coolers running until bedtime, so the room is well cooled when we turn in.

Over most of the desert area there is a cooling breeze after nine in the evening. If the bedrooms are situated to get the benefit of this breeze, with low windows and ample circulation through windows and doors, night cooling is unnecessary and actually harmful from the standpoint of health.

An alternative is to have a sleeping deck on the roof. It is surprising how much cooler the night air is at 12 to 15 feet above the ground level. The only drawback is that unless there is protection from sun and early morning insects one's day starts at four or five in the morning. Cyria and I discussed the sleeping deck idea for our home, and passed it up because of the limits on our building budget.

The exposure of glass—doors and windows—to the direct rays of the sun is a factor of tremendous importance in planning a home on the desert. For winter living the big windows are

fine, but when summer comes those big panes of glass, exposed to the direct rays of the sun or the reflected rays from veranda or patio paving, bring in all the heat of hades. Drapes may protect persons inside from the sun's rays—but they don't keep the heat out of the room. Once it seeps through the glass you have to live with it—or over-work your cooling system to neutralize it.

Cyria and I carried on a friendly feud for many months before we arrived at a compromise as to the width of the verandas which protect our south and northwest view windows from direct sun glare. I wanted windows that would never be touched by the sun. She said that would make our living room too gloomy in the wintertime when the sunshine is a welcome visitor inside as well as outside.

Our compromise was a 5-foot veranda on both the north and the south exposures of our living room, with an additional foot of roof overhang. In winter, we get a bit of early morning sun in the room, and in summer the late afternoon sun seeps in from the northwest. We have planted a shade tree which eventually will keep out that afternoon sun.

We have only two windows on the west exposure of the house. In April, we covered these, on the outside, with Koolshade screens. These screens are one of the blessings that the inventive genius of America has created for desert dwellers. The composition of these is somewhat similar to that of ordinary fine wire screening. One can see through them. But instead of fine wire, the horizontal threads are tiny flat

louvers set at an angle to deflect the sun's rays. Until late afternoon when the sun is low the Koolshade screens cast as black a shadow in the room as if the window was boarded up. About four in the afternoon the sun drops below the angle of the louvers and sunlight begins to filter in. It is another hour before enough sunshine comes through to affect the temperature inside the room. In the fall we will take the Koolshades off and let in the warmth that is welcome in winter months.

Our desert sandstorms come from the west. Between April and February we may have one or two and, in exceptional years, four or five of those

sand blizzards which every housewife dreads. Since they are usually from a westerly direction we insured ourselves against dust seepage on that side of the house by sealing the windows in. Also, we put our service porch, storeroom and carport on the west side. We have an effective barrier against our two enemies from the west—the sun and the sand.

The desert is a place for outdoor living—both summer and winter. A patio is a delightful retreat for summer evenings—and equally pleasant for winter days. We even went so far in our construction as to roof over part of the patio—just outside the kitchen door—as an outdoor dining

room. With a hostess cart and no threshold under the door, it is just as easy to serve meals on the porch as in the dining room inside. We solved the problem of insect pests by installing a two-speed ceiling fan in the porch.

Our fireplace is of quartz rock which Cyria and I have gathered from the desert at various times. We brought in enough for both the fireplace and a barbecue in the patio, and also for a little waterfall adjoining the fireplace. We built the waterfall ourselves after the masons had completed their contract.

The sound of running water is pleasing music to most people, and this is especially true on the desert where water is at a premium. The little cascade with two 10-inch drops into a couple of miniature pools adds a bit of refreshment to our living room. It doesn't require much water to create a merry tinkle in one corner of the room—and the water drains off to irrigate the flowers in the patio.

We were fortunate in our selection of a contractor. Henry Colglazier and his son, Walter, of Cathedral City, California, make a very efficient team. Henry does the buying and keeps the work of the sub-contractors coordinated while Walter is working foreman on the job. Good workmanship and complete integrity saved us many of the headaches which sometimes accompany the building of a new home. This is one house built without extras. We made a few changes as we went along but the credits offset the extra charges.

Our plans added up to a total of 1494 square feet of interior floor space, plus 566 feet of outside slab—porch, verandas and carport. By the rule-of-thumb used by builders, outside slab is figured at one-half the cost of interior construction. On this basis our house totals 1777 square feet, and the cost was within a few cents of \$10.00 a square foot.

For vines and additional shade we built 414 square feet of lattice work—and Cyria and I did this job ourselves.

Hardly was the stain dry on the overhead vegas of our back veranda when a pair of California linnets moved in and began building their nest among the rafters. They've hatched one brood of baby linnets, and we suspect from the chirping that is going on around the back yard another brood is in prospect.

And so, the four of us—Cyria and I and Mr. and Mrs. Linnet have found our summer home on the desert a very convenient and comfortable place in which to live.

TRUE OR FALSE

If you know the answers to 14 of these questions and are lucky enough to guess four more, you will have an exceedingly good score. The average person, not versed in the history and geography and lore of the desert will do well to get 12 of them right. Regular readers of *Desert Magazine* will do much better because all the answers have appeared in this magazine at one time or another. Twelve to 14 is fair, 15 to 17 is good, 18 or better is exceptional. The answers are on page 31.

- 1—If you were at Furnace Creek Inn in Death Valley you would see the sun go down behind the Funeral Mountains. True..... False.....
- 2—A Gila Monster has fangs like a rattlesnake. True..... False.....
- 3—Casa Grande is the name of an old Indian pueblo ruin in Arizona. True..... False.....
- 4—Director of the National Park Service is Conrad Wirth. True..... False.....
- 5—Tinajas Altas is the name of a historic waterhole in Southern Arizona. True..... False.....
- 6—Ganado Mission school on the Navajo reservation is a Presbyterian institution. True..... False.....
- 7—Ripe fruit of the Saguaro cactus is red. True..... False.....
- 8—Tahquitz is one of the gods of the Papago Indians. True..... False.....
- 9—Only male members of the tribe dance with snakes in the Hopi Snake Ceremonial. True..... False.....
- 10—The plumes of the Salt Cedar are yellow. True..... False.....
- 11—Mining is forbidden in the Death Valley National Monument. True..... False.....
- 12—The roadrunner is a songbird. True..... False.....
- 13—The Indians living in Monument Valley are mostly Paiutes. True..... False.....
- 14—Screwbean mesquite derives its name from the spiral form of its trunk. True..... False.....
- 15—The famous Bird Cage Theater is located at Virginia City, Nevada. True..... False.....
- 16—Date palm trees were growing wild on the Southern California desert when the white men first came to this region. True..... False.....
- 17—Cochiti is the name of an Indian Pueblo in New Mexico. True..... False.....
- 18—Prescott was once the territorial capital of Arizona. True..... False.....
- 19—Talcum powder originally comes from mines. True..... False.....
- 20—The junction of the Green and Colorado Rivers is in Utah. True..... False.....

Indians' Choice in Washington

The Indians are a patient people, but they are weary of living on reservations, of seeing their children go unschooled, of subsisting on the barest economy. So when the time came for the Eisenhower administration to select a new Commissioner of Indian Affairs, tribesmen throughout the country — and particularly the Navajos—demanded to be heard. They named Glenn L. Emmons of New Mexico as the man who best could aid them in the slow journey toward full fellowship with their white American brothers, and it was largely upon their recommendation to Washington that he was appointed. Dama Langley introduces the new commissioner to Desert Magazine readers and outlines some of the plans he has for solving the Indian problem.

By DAMA LANGLEY

Photos courtesy U. S. Indian Service



Glenn L. Emmons of New Mexico,
Commissioner of Indian Affairs.

"**W**E WANT Glenn Emmons of New Mexico!"

The cry spread from tribe to tribe, from the Southwest's Hopis and Apaches, Navajos and Utes to reservations in Florida and Minnesota, in South Dakota and Alaska.

"He knows Indian needs and knows what to do about them," explained Navajos in New Mexico and Arizona. With full-page newspaper statements they campaigned for the quiet-spoken Gallup banker. The powerful 78-member Navajo Tribal Council sent petitions to Congress and to President Eisenhower saying their 60,000 people would be satisfied with no other commissioner. Educators and business leaders throughout the country added their voices to the plea.

So it was that Glenn L. Emmons became the 38th Commissioner of the U.S. Bureau of Indian Affairs, the choice of the 400,000 Indians in the United States and Alaska whose destiny he will help direct.

I had often seen Glenn Emmons in the Gallup State Bank, but when I called on him recently, it was in the Bureau of Indian Affairs office in the Department of Interior in Washington.

The decor of the Bureau's offices is definitely Indian. Navajo rugs brighten the floors and Southwestern baskets and pottery are on display. The walls are decorated with paintings by gifted Indian artists and here and there are carved ivory pieces from Alaskan craftsmen. Even the cuff-links worn

by Mr. Emmons were turquoise inlay made by Zuni silversmiths. My appointment with the Commissioner had been made through a charming and alert secretary, an Indian girl.

"I'm very happy to see you in this office, Mr. Emmons, but you doubtless know it's a thankless job. I'm wondering why you left your bank, and the lovely home and friends you and Mrs. Emmons had in the Southwest."

The new Commissioner is a big quiet man, and he carefully weighed his answer. "I accepted this responsibility because it is a challenge. I feel that someone has to bring this 'ward of the government' business to a successful close, and when I say successful, I mean from both the government and Indian viewpoint!" Then and there I decided that if dogged determination and integrity count, the right man is in the right job.

Glenn L. Emmons was born in Alabama almost 60 years ago of pioneer American stock. His forefathers were English dissenters who settled in America in 1666. Glenn grew up in a household where education and wholesome Christian living were stressed. The family moved to Albuquerque when he was a child, and his entire schooling was in that growing western town.

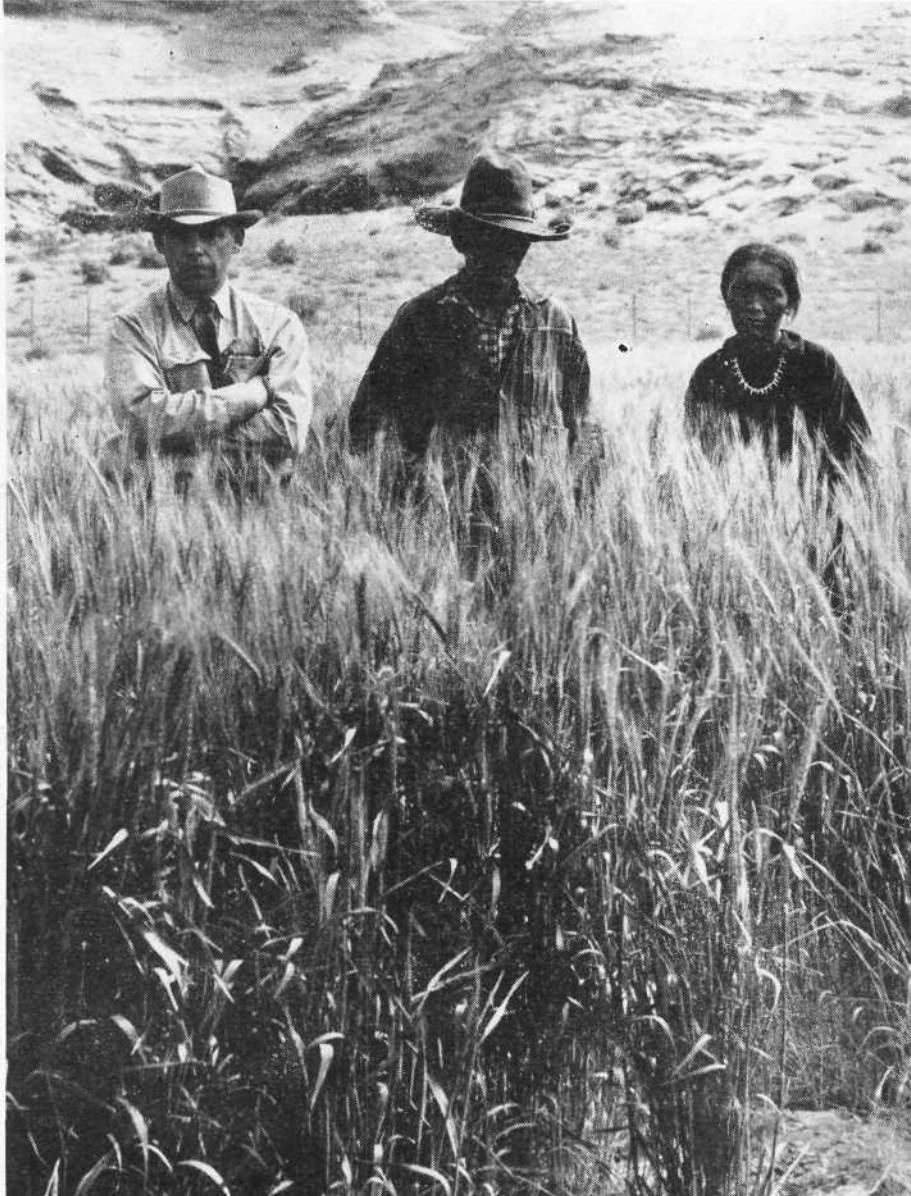
Young Glenn was a practical lad, and while he attended grade school he didn't pass up any chances to gain experience and add to his bank account. He operated a hotel elevator

and clerked in a bookstore before he was high school age. During his four years in high school he played a little football but spent most of his week-ends and vacations working as a ranch hand or riding the Santa Fe passenger trains as a "news butcher."

He entered the University of New Mexico in Albuquerque and was elected president of the freshman class. His second year he played football and was elected president of the sophomore class. The third year he was business manager of the college annual *The Mirage* and was elected president of the junior class. He declined the latter honor because all his spare time was taken up by an extra-curricular job. The American Lumber Company was logging the big yellow pines in Zuni Reservation forests, and it was Glenn who fired the log train locomotive. Before finishing his senior year in college, a call came from Uncle Sam. After army service in World War I, Glenn came back to New Mexico with the rank of lieutenant, and without a job.

The Gallup State Bank offered him a position as transit clerk. He accepted it, and took up residence in the little city known as The Indian Capital.

Fifteen years after Glenn started to work at the bank he was its president, a position he has held ever since. He worked his way methodically to the top—teller, assistant cashier, cashier,



Navajo farmer and his wife pose with Navajo Service agriculture expert in a bumper wheat crop at Rock Point Irrigation Project, 1939. The government has had good success with agricultural relocation projects, but there isn't enough farming land to go around. Glenn Emmons believes the answer to the Indians' economic problem lies in industry, not agriculture.

vice-president, then president. He is National Treasurer of the American Bankers Association.

"I know your bank has loaned thousands of dollars to Indians in time of need. Did you find them good risks, and ready to repay their debts?" I asked.

"Yes, an Indian's word means something. When the Navajos had big flocks of sheep they lived almost entirely on wool and lamb sales. They only had cash in the spring after shearing time and again in the fall when the lambs were shipped. Between times they always needed money for operating expenses.

"We extended credit over and over during the year and had no trouble about repayment. It's something I've never been able to figure out, just how a Navajo knew the day his note was due. Only about two percent of the Navajos can read or write English, and only five percent can speak it. Most of the notes were signed with a thumb

print. But no matter what odd day of the week or month the note was due, the Indian was there to take care of it. I have found Navajos waiting at the bank door with the money early on the morning they promised to pay.

"The Indian brain is just as flexible and intelligent as that of white business men, and I have complete faith that Indians will eventually take their place along with whites in everyday American life. Both races will benefit from the association."

"Have you spent much time with other than Southwestern Indian Tribes?" I wondered.

"Yes. President Eisenhower asked me to visit all the major Indian areas and stay long enough to get together with the tribal leaders and the local business and educational men. I have made two such tours, and visited and studied many of the 200 tribes and recognized Indian groups under the Indian Bureau administration."

"With the first hand knowledge you

acquired have you developed any plan to end the Indian problem?"

Mr. Emmons laughed. "You are as bad as somebody knowing nothing about Indians. The Indian problem can't be rolled up in one package and labeled as such. There are as many sets of troubles as there are tribes. What concerns drouth stricken Plains Indians doesn't worry the Seminoles in their Everglade swamps; and the Alaskans depending on fish, furs and seals are not troubled by boll weevil destruction of Pima cotton.

"There are a few basic needs of all—education, health and economic security. These we must provide and without forgetting the vital thing, the human equation. You asked me a while ago what I consider the most important thing lacking in our efforts to place the Indian population on a par with white citizens. I would say without qualification, education. Health, social and religious development, industrial training, everything depends upon the ability to know what is going on. And how can one know when words spoken are in a strange tongue, if a printed page reveals nothing and if thoughts and desires cannot be expressed?"

"I never quite so fully realized how helpless a non-educated Indian is until I served as chairman of the McKinley County Selective Service Board in New Mexico. Our Indian draftees had no idea what was required of them. Most of them didn't even know there had been any war since Kit Carson rounded up the Navajos 90 years ago. We were sending Indians to fight and perhaps to die in countries they didn't know existed."

It was after a hard day's work trying to untangle Navajo grunts and hisses that Mr. Emmons made the wry remark, "If the War Department just used Navajos in the Signal Corps there'd be no leaks. Nobody, not even a Jap could decode their lingo!" A few weeks later there came a call for 50 Navajo draftees to serve with the Signal Corps.

Perhaps more Navajos will learn English if recommendations of a survey team appointed last October are carried out. Secretary of Interior McKay asked a group of business and industrial men to study organization and operation of the Bureau of Indian Affairs and report on their findings. Among other things, the team suggested that the building of high-priced boarding schools on the Navajo Reservation be suspended, temporarily at least. Instead of such schools built and operated at a cost of \$6,000 per pupil, they suggested that more small schools be located all over the reservation, thus giving opportunity for all 28,000

school age children to secure schooling instead of the 14,000 now provided for. This newer system would cost about \$600 per child.

We talked of over-population on the Navajo Reservation, where 60,000 people are trying to live on land insufficient for half that number, and of decline in sale of Indian handicrafts.

"It has been proved that factory imitations have about killed the market for genuine Indian crafts," Glenn Emmons told me, "and outside of such tribes as the Florida Seminoles and maybe the Cherokees in the Great Smoky National Park area, few families now are supported by that means. A few Indians in skilled trades find employment near their home reservation, of course, but that's only a drop in the bucket. Laborers' jobs give employment to some men along irrigation projects and on railroads, but their families must either remain on the reservations or live in slum areas on account of social and financial limitations.

"The relocation projects developed within the past decades are excellent for those lucky enough to be chosen. Unfortunately, there just isn't enough suitable land to accommodate all of the Indians wanting to farm. And those who raise cattle need all available rangeland for grazing purposes. It is imperative that industry furnish



A Navajo boy registers for the Selective Service Act at Fort Defiance, Arizona, in 1942. Navajos have proved their ability as fighters in the Army and Marine Corps. U. S. Indian Service photo by Milton Snow.

the solution to Indian employment and readjustment."

"What do you mean?" I asked.

"I believe the future of the Indian people depends upon training every able bodied adult to fit into the industrial picture, and at the same

time teaching the children to grow up equipped for economic security. Those possessing outstanding talents in professional lines will find their own goal.

"In general, there is a defeatist attitude toward assimilation of Indians into white life. However, I have found

The Bureau of Indian Affairs is responsible not only for the Indians of the Southwest but for tribes throughout the country and in Alaska. The problems of these Seminole school children, for instance, and their families in the swamplands of Florida are quite different from those of their Hopi brothers in arid Arizona.





Young Indian priest, Pueblo de Taos, New Mexico. One of the problems of assimilating the Indians into white culture is that their religious beliefs and way of life are so different from those of other Americans.

that many research groups and foundations are intensely interested in minority groups and are anxious to delve into Indian possibilities. Stanford Research Institute, for instance, proposes thoroughly to study one particular Indian Reservation in respect to its industrial possibilities. They will check the population, birth and death rate, health conditions and average age of the tribal members. They will even go into such matters as religious ceremonies and social taboos. There will be soil and water analyses and checks of weather conditions—extremes of heat and cold, rainfall, sand storms, winter snows, etc.

"Availability of construction material will be considered and the source and volume of water supply. Distances from railroads or trucking highways will be computed and surveys made of raw materials available for any proposed manufacturing plant. Marketing experts will follow studies of supply and demand and marketing opportunities for the output of the industrial concern located in that area. We hope to have a number of research and foundation groups making such investigations at no cost to the government.

"With all that information collected and weighed, the investigators could decide what type of business should be invited to locate at any indicated Indian reservation. One locality might be favorable to tanning operations and saddle and harness manufacture; another to food processing either by canning or freezing. There would be a need for plants producing cotton goods

or paper cups and towels, maybe plastic baby pants. Nearly everything we use is manufactured, and if a suitable location is offered where Indian labor is plentiful, the government could well offer inducements to the producer.

"It is my hope and belief that when we can go before Congress with tangible plans backed by accredited research, the government will furnish money for roads and power and water development essential to industry.

"Industrial plants which locate near Indian communities will be obligated to employ Indians for every job they can fill and to carry on full time instruction, teaching them to become skilled workers in all trades involved in the factory. Safety and health rules and working conditions will come under industrial law.

"Accompanying this means of eliminating poverty on the reservations will be a stepped-up program of education and health improvement. Between the industrial interests and the government would be an agreement whereby both would share in development of higher standards of living and in saving or investing money earned. The Indians must learn not only how to earn money, they must know how to spend it to good advantage."

"I assume that you favor abolishment of the reservations just as quickly as possible?" I said.

"Just as quickly as is compatible with Indian welfare," the commissioner answered. "There are a few tribes prepared right now to take their rightful place in white communities. These

are Indians who have lived and dealt with their white neighbors over a long period of time. California tribes fall in this category, and a few others. But arbitrarily to close down reservations and push the Indians out to shift for themselves without the proper training to compete would be criminal negligence. No, I am afraid the government will be in the Indian business for a long time yet.

"I think they should be conditioned to live and work the same as other men. It does something to a human being's pride to know he is not allowed to sell his land, or buy a glass of beer or vote without special permission. I want Indians to be full free citizens."

I was convinced that the Indians had chosen wisely in their search for a champion.

THE *Desert* MAGAZINE CLOSE-UPS

A young man who has scuffed his shoes on desert rocks and left foot prints in desert sand through most of his 28 years, recently joined the editorial staff of *Desert Magazine*.

He is Robert P. (Bob) Crompton, who has hung his hat at Mina and Tenabo, Nevada and Tremonton and Brigham City, Utah long enough to call them home.

Crompton is a graduate of Utah State College, Logan, Utah, where he majored in journalism. Since completing school in 1949 he has been associated with the *Box Elder News and Journal*, Brigham City, Utah, and the *Orange Daily News*, Orange, California, as managing editor on both papers.

He spent his first years in the mining town of Mina, Nevada, where his father was active in trucking and mining circles.

In 1939 he moved with the family to Tenabo, Nevada, where a large placer dredge and scores of individuals were turning a pair of gold-rich gulches into heaps of tailings.

During his teens Crompton was something of a mine operator himself in Tenabo—with help from his father and friendly miners—when he staked off a plot of pay-dirt for lease. Financial remuneration for his efforts with a dry washer were small, but they left delightful memories.

Crompton was a member of the U. S. Air Force during World War II and is still a member of the reserve.

He and his wife, Erma, native of Ogden, Utah, have a 21-month-old son, Kim. They are now making their home in Palm Desert, California.

ON DESERT TRAILS WITH A NATURALIST-IV

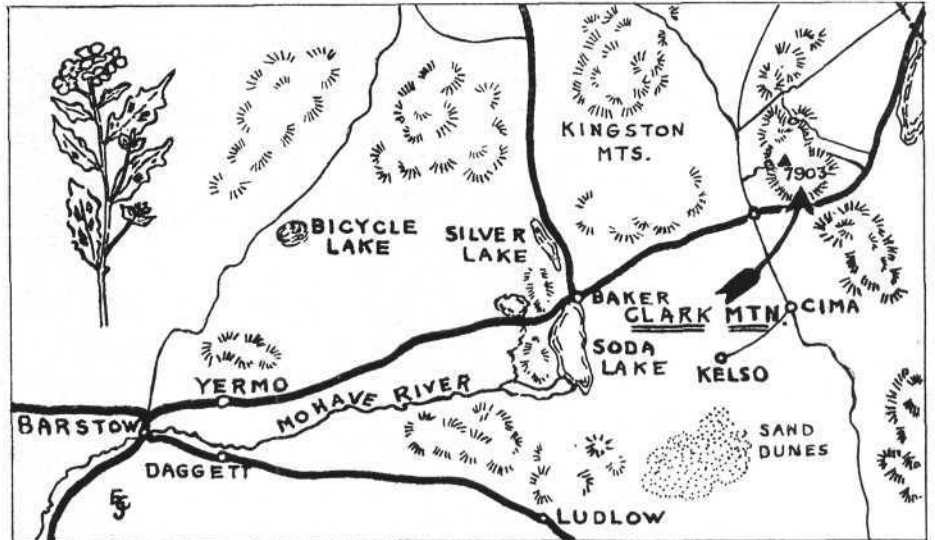
Clark Mountain Wonderland

On his first trip to Clark Mountain, in 1922, Edmund Jaeger discovered two plants unknown to botanists until then, and a new species of land snail. There are other wonders on this rarely-explored limestone peak in the Mojave Desert—broad-tailed hummingbirds with bell-like song, pygmy century plants and fragrant pentstemon gardens. Desert readers are invited on another trek on desert trails with a naturalist.

By EDMUND JAEGER

Photos courtesy Rancho Santa Ana Botanic Garden

Map by the Author



FAR AWAY toward the Mojave Desert's northeastern borders lies a picturesque steep-sided mountain of somber gray, banded limestone. Clark Mountain rises majestically almost a mile above the desert floor and in winter sometimes carries on its summit a cap of whitest snow. Until a few years ago it was known intimately only to the few surveyors, miners and prospectors who climbed up the bottoms of its tortuous, precipitous canyons or probed its rough rocky sides for minerals—gold, copper, zinc and tungsten.

This massive mountain rising so precipitously from the desert floor and crowned with a forest of dwarf conifers intrigued me the very first time I saw it. A search of records convinced me that it must be practically unknown to botanists and zoologists; its very isolation pointed to its being a place where all sorts of interesting natural history discoveries might be made. Mountains of limestone almost always harbor peculiar species of both plants and animals; that I had learned by first hand experience when in 1912 I botanized and hunted birds and mollusks in the high, picturesque Spring Mountain Range, 25 miles northwest of Las Vegas, Nevada. I longed to be the first naturalist who should explore and bring home plant and animal treasures from Clark Mountain.

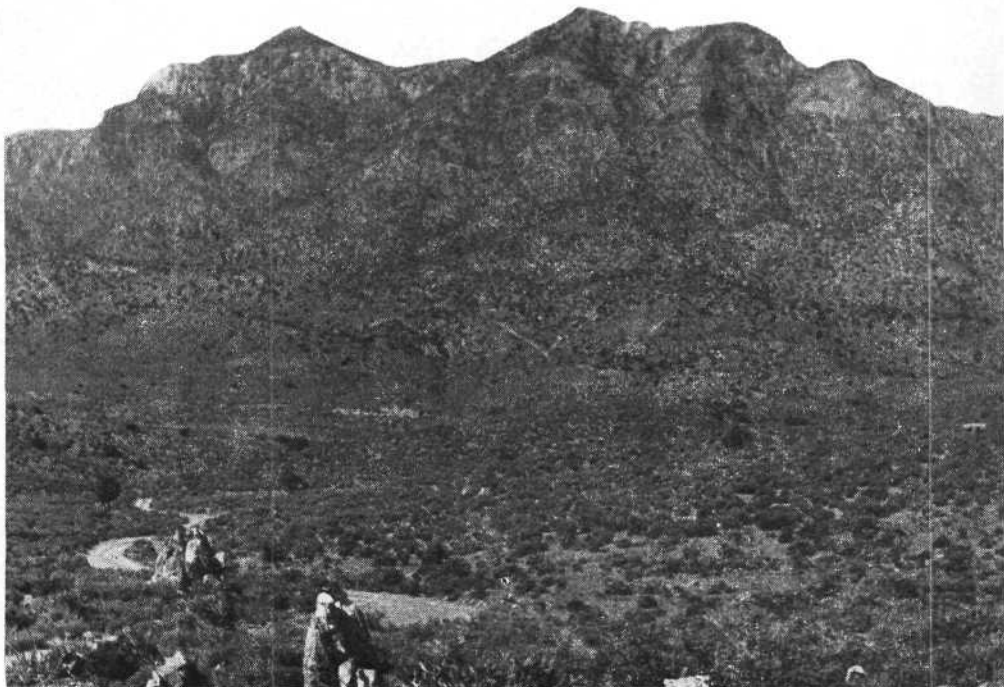
I made my first ascent in the late spring of 1922. Not knowing a better way of attack I approached this strange desert highland from Pachalka Spring (5000 feet elevation) on its steep west side. I learned later that there is a better way to go up on the eastern slope. It was a long tough climb

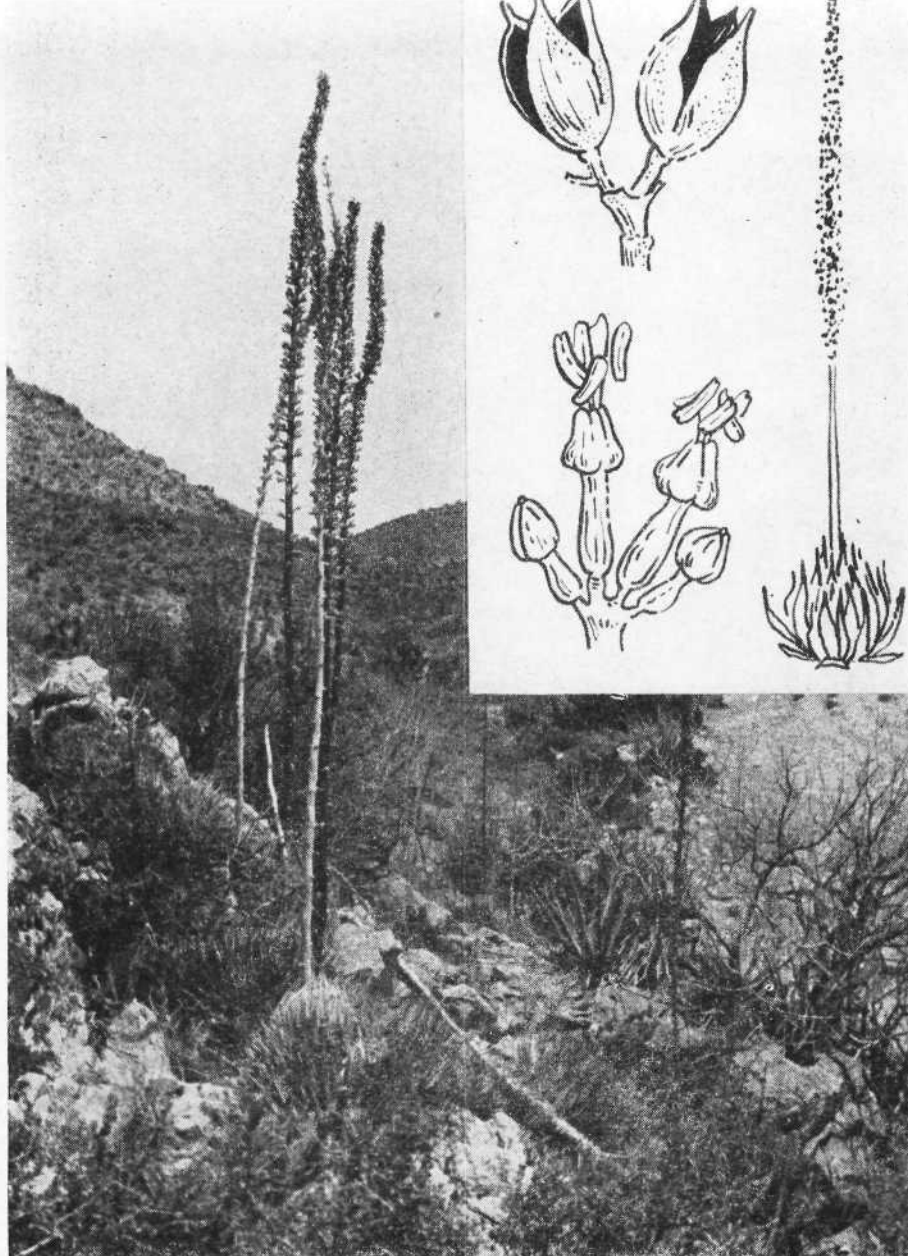
through a canyon that seemed to go almost straight up. It abounded in high, dry water falls and rock-choked channels. I took two husky students with me, and we struggled on foot and at times on all fours like bears, sometimes on hands and knees, for four long hours before we reached the summit. The climb was made more difficult because we had to carry cameras and botanical collecting cans and press in addition to water and food.

But what a rewarding climb it was! And how wonderful was the superb view our summit position afforded of the broad, shrub-dotted, mysterious surrounding desert; how rich in gleanings of flora and fauna new to the world of science.

The top-most point of Clark Mountain is a small pile of rough rocks; yet in that limited area of not more than a hundred square feet at the crest, I collected that day in a matter of a few

Clark Mountain rises above the Mojave Desert northeast of Baker, California—a challenge to climbers and a wonderland of strange plants and animals for the student of Nature.





Beautiful specimens of the rare pygmy century plant, *Agave utahensis nevadensis*, grow on Clark Mountain's slopes.

minutes two never - before - described plants and a new land mollusk. The finding of the land snail was the most exciting experience. I had predicted to my snail-specialist friend, Dr. S. Stillman Berry of Redlands, that if I could find fir trees growing on limestone atop Clark Mountain I would bring him a brand new snail to describe and name. This fir tree-limestone partnership was a good-luck combination I had learned while collecting in the mountains of southern Nevada.

As I neared the crest I found my firs—and they were growing on limestone! I was elated! The trees were small and there were but a few of them, but under the bed of fallen needles was my long-hoped-for snail. This mollusk proved to be of unusual interest for it was the first of its genus ever to be found on the mainland of California. The specimens I took that day now repose in collections under the euphonious scientific name of *Helminthoglypta californica*.

The two new plants I found were later described and named by Dr. Philip A. Munz of Pomona College.

We saw other interesting things that day. Feeding on wine-colored flowers was the broad-tailed hummingbird heretofore unknown in southeastern California. It is a hummingbird peculiar because of its large size, broad tail and tinkling, bell-like notes. We saw beautiful specimens of the rare, locally distributed pygmy century plant (*Agave utahensis* var. *nevadensis*) and beautiful gardens of Palmer's penstemon, celebrated for its delicate shades of lavender pinks and sweet apple-blossom-like fragrance.

We observed where the yellow belied porcupine, little known, seldom seen in desert California, had left its sign in bark girdled trees. On our way down the mountain we discovered the only specimen of a hackberry tree known to the Mojave Desert. By what means the seed was brought there nobody knows.

A day of wonders it had truly been. After my successes in collecting became known other naturalists soon began to explore this mountain so rich in natural history. Dr. Alden Miller and students of the University of California Museum of Vertebrate Zoology studied it and made a report on its bird, mammal and reptile fauna. Dr. Philip Munz, now of Rancho Santa Ana Botanic Gardens, and others, eagerly examined further its varied flora, and today other botanists as well as students of zoology and historical geology are climbing over Clark Mountain's rough terrain of carboniferous limestones to learn new things about this grand old mountain of the still largely unspoiled, lonely Mojave Desert.

To Clark Mountain's top there are no roads and on its steep juniper-dotted sides there are few trails. It is no place for the novice or for him who seeks easy holiday ramblings; a good mountain it is for those who like strenuous climbing and the chance to be far away from the haunts and works of man.

While there is no direct proof, there is every reason to believe that Clark Mountain was named for the Clark Mining District and this in turn after Senator William Andrew Clark of Montana, famed for his copper mines and well known in eastern Nevada during the years between 1900-1915 as builder, not only of the San Pedro, Los Angeles and Salt Lake Railroad (now the Union Pacific) but also of the Clark Line, which once carried ore between Tonopah, Goldfield, Beatty and waypoints to Las Vegas and Salt Lake City. The official title of this rail line was the Las Vegas and Tonopah Railroad, Clark County in nearby Nevada was also named after Senator Clark.

On maps published in the Death Valley Report of 1891, Clark Mountain is called "Clark Peak." Clark Mining District is first mentioned on page 180 in the "Second Report of the State Mineralogist" published by the California State Mining Bureau, December 1, 1880.

The gray face of Clark Mountain is scarred with numerous prospectors' diggings. At a few places may be found actual mine shafts and tunnels. Some mines long ago were worked out and abandoned, others are new workings where loads of pay ore are now being taken out. It is my guess that there are 20 "doodle-bug holes" to every opening that shows signs of any active mining.

Most of the mines are on the south end near the Barstow-Las Vegas road

and on the mountain's northeast extremity where the Coliseum Mine once flourished. This was one of the largest mines opened and operated. Although now abandoned, there is plenty of evidence of past large-scale promotion. All about the properties are seen many weathered half-wrecked miner's shacks, a collapsed commissary, pump house, blacksmith shop and ball mill and numerous radiating roads — a ghost town in miniature. The country all around has been denuded of pinyon trees, curl-leaf mahoganys and junipers to furnish fuel for winter heat for miners' cabins and boilers.

The general barrenness and litter of camp refuse at the mine headquarters has a depressing effect on the mind of persons who are pained to see the destruction of natural beauty.

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JUDGES AWARD PRIZES TO BIRD CONTEST WINNERS

At Gold Rock Ranch in California's Cargo Muchacho Mountains, Dad and Margaret Walker are constantly entertaining. Their banquet board is perpetually spread with food and drink for guests who drop in at any hour of the day or night.

The Walkers' guests are birds. And they number many, for winged visitors know that at Gold Rock they will find refreshment and kindness. Some stop briefly to eat and run; other have become permanent residents, constantly entertaining their hosts with antics and song. They know their welcome will never wear out.

Desert readers will learn more of the Walkers and their feathered friends in the August issue of *Desert Magazine*. Cap and Olga Smith of Des Moines, Iowa, tell the story, first prize winner in *Desert's* recent writing contest asking entrants' experiences attracting desert birds.

The Smiths received a cash prize of \$25. *Desert* readers will agree the selection was a good one, although a number of acceptable stories were received among the 23 entries in the contest.

Second prize and a cash award of \$15 went to Myriam and Elsie Toles of Portal, Arizona, for their story of the birds which enjoy the hospitality of their ranch deep in the Chiricahua Mountains of Arizona.

Winners of honorable mention were Cecelia Foulkes of Mecca, California, L. W. Morgan of Tucson and Florence E. Cain of Glendale, California. Their stories will appear in future months, offering good reading as well as suggestions to others who would attract desert birds to their homes and gardens.



—Photo by Valdis Avots

INDIAN POW-WOW AT FLAGSTAFF

Indians from tribes throughout the Southwest, from Oklahoma and South Dakota, home of the smiling Sioux above, will travel to Flagstaff, Arizona, again this year for the annual All-Indian Pow-Wow July 2 to 4. Nearly 10,000 Indians, representing a score or more tribes, and thousands of white spectators are expected at the 1954 fete.

The colorful celebration features daily street parades, afternoon rodeos—the rough-and-tumble Indian variety is completely different from the average Western show—and evening programs in which tribesmen, garbed in ceremonial finery, perform ancient dances and rituals by the light of huge council fires. The program is held at the Pow-Wow grounds in Flagstaff City Park and is followed by midnight-to-dawn squaw dances which white visitors are invited to join. The squaw dance, now the outstanding Indian social affair, originated as a war dance and has religious significance. Whites who take part are asked to behave with propriety. Only Indians may participate in the competitive Pow-Wow activities.

Indians have been coming to Flagstaff for Fourth of July celebrations since 1886 when a band of California-bound pioneers celebrated the nation's centennial by lopping off the branches of a tall pine tree and nailing the stars and stripes to its top. Indians, attracted by the noise, joined the celebration. The pine flagpole gave the city its name.

The Pow-Wow offers an unusual opportunity to photographers, both amateur and professional, and visitors are urged to bring their cameras and ample film supplies.

The 'Other People' Who Come to the Waterholes

By EDNA PRICE

An old Indian will seldom camp at a spring, but packs his water some distance before stopping for the night. For at night the "Other People"—wild creatures small and large—come to drink, and the desert's rare waterholes belong to them. Edna Price's Death Valley story of the compassion shown by Shoshone Johnny, Shorty Harris and other old-timers for the animals of dune, canyon and mountain slope carries a lesson for all desert travelers.

NEARLY every visitor to Death Valley has seen Johnny Shoshone, the aged Indian who loitered about Furnace Creek Ranch and accepted gratuities for having his picture taken. Johnny died last October 20.

Twenty-two years ago Johnny was our neighbor. My husband, Bill, and I were making our home in a cabin perched on a cliff at Wild Rose Spring on the western slope of the Panamints. Johnny and his family had a wickiup of tin and boards on the spot where the Park Service now has its summer quarters.

Every day Johnny came riding down the canyon on his bony old horse with the gargoyle face, and he and Bill would squat on their heels in the sand and wait for me to cook lunch.

It wasn't food that drew Johnny to our place. He ate very little. "Old

Johnny Shoshone, late patriarch of Death Valley Indians, told Edna and Bill Price the legend of the waterholes — how the Big One had created springs in a dry desert land so The People could drink.

man no need much," he explained. "Save 'em for young man so he get strong."

To Johnny, the world's harvest was like his own crop of mesquite beans and pine nuts—barely enough for the young and strong, none to spare for the old and weak. Times had always been lean for Johnny. As a little boy he had learned to trap wood rats and field mice and to set dead-falls for coyotes.

"Pretty tough," he commented, "but you eat if you get hungry."

Mountain sheep were difficult to stalk on the craggy peaks at close enough range for the three-foot juniper bow and greasewood tipped arrows of the Panamint Indians. In years of drouth when grass seeds failed, and in the off years of the pine nut harvest, Johnny's people found little to eat. Then they gathered grass, weeds, anything green. "Boil 'em three times, throw away water, they no hurt you then," Johnny said. He claimed he could find many such edible plants in the Death Valley barrens.

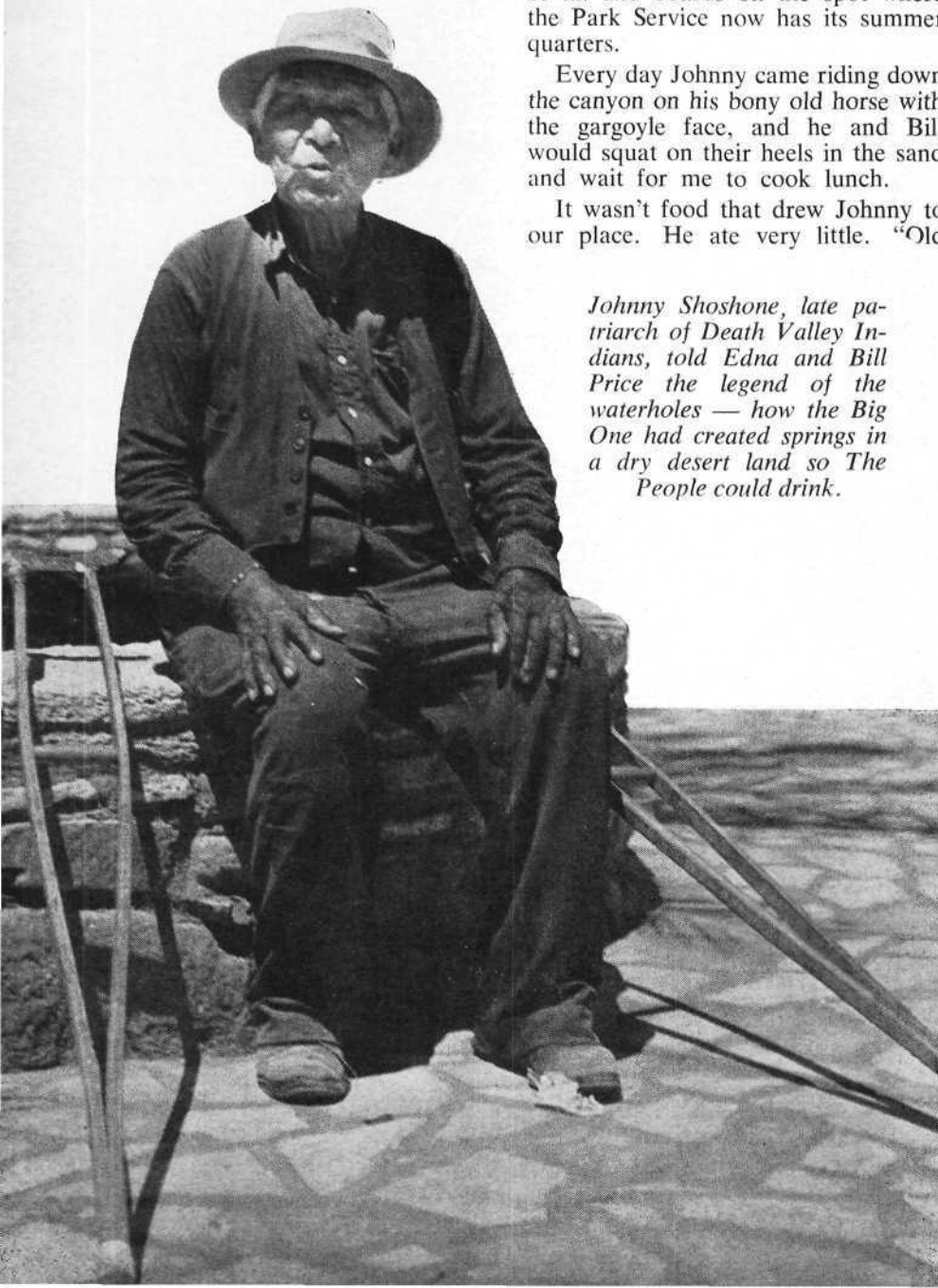
In 1930 Johnny had a rifle, but he was too old to climb the ragged crests where *Tucki*, the sheep, lived. He was the poorest of all the Death Valley Indians. On his ancestral domain there was left no tillable patch of land at any waterhole. White men had taken up water claims for their mines, and the ancient wintering place of his people had become the property of the Pacific Coast Borax company.

To the north, John Hunter had an isolated garden in Cottonwood Canyon. To the south lay Hungry Bill's ranch, accessible only by rough pack trail. Johnny's waterholes had been too easy to reach, too close to valuable ore deposits.

Because he was the only man in his camp of women and children, Johnny liked to spend long hours with Bill, sometimes talking, sometimes just silently sitting. It was on one of these visits that he told us the legend of the waterholes — those precious little springs, often hidden in rugged canyons, to which Death Valley Indians had migrated each winter and summer for countless generations.

"Like this," the old man reflected,

DESERT MAGAZINE



squatting a little more comfortably and tracing a stick through the sand. "Long time ago, my people, my old people's people all dying. No water. My old people's people call a big pow-wow, ask fastest runners how soon can they go to Big Water at edge of Setting Sun and bring back water?"

"Runners all shake heads—no can do. Everybody die before they get back. Then they ask the Big One—how soon can he go? He say yes, he can do. So the Big One take water basket, tie around head. He go very fast to Big Water at edge of Setting Sun. He fill basket, put 'em on head. He take big steps, from top of one mountain to top of next mountain."

"When the Big One get to Argus Range, he very tired. He sit down on rock to rest. He loaded heavy, so he leave big print where he sit, and hole where he rest elbow. When he get up, he tired, not walk so steady. Some-time he spill a little drop. Every time drop fall, water come up through ground there. Ever since are springs in this country."

Johnny's voice trailed into a silence broken only by the gurgle of Wild Rose spring in its cement-walled prison. His expressive brown hand went out in a slight gesture toward the sound.

"See," he repeated quietly, "always water now for all the People."

By the People, Johnny did not mean just the humans of his world. He meant every living creature, from Lizard, Wood Rat, Mesquite Bug (whom no one must ever harm), to Wolf, first of all the People, his brother Coyote, and *Tucki*, the sheep. He meant the ants, the birds and Water-Bug, who once carried Wolf on his back over the waters.

To the Indians and all those who live close to nature, all creatures are important. Old-time prospectors often dug their waterholes at an angle, so the smallest of bugs could crawl to water without falling in. They filled containers, as Shorty Harris, the "short man" of the bandy legs and compassionate heart, did once on a trip through Death Valley with us.

At Bradbury Well, Shorty filled a tub and several tin cans with water, after carefully writing on them in his aged hand, "Water. Keep filled for birds and animals, please." At Bennett's Well, we found two dead rats in the water. "Some one dug the hole too straight," muttered Shorty. "But just strain it through your teeth." He chuckled. "That's what God give you teeth for, to strain your drinkin' water."

Later, in 1933, Bill and I were camped at Bennett's Well. We lived

in a brush wickiup like the Indians, and like them we lived largely from the land—we bought only flour and grease and honey.

The clumps of sacaton grass around Bennett's Well housed hundreds of cottontail rabbits. Wild ducks came to the marshes of Eagle Borax. Drove of wild burros ran at will, and small bands of mountain sheep wintered low in Hanapaugh Canyon.

Another Indian was now our neighbor. Tom Wilson came almost daily afoot from his camp at Eagle Borax mill, two and one-half miles away. He, too, spent long hours with Bill, exchanging stories, beliefs, opinions. Once Bill asked, "Tom, why do Indians so often camp a mile or two from a waterhole, and pack their water supply?"

Tom gave Bill a long searching look, as if to explore a mind which must be told an obvious truth. Then he answered, simply: "At night the Other People come to water." Like Johnny Shoshone, Tom was referring to the wildlife of the region.

Then, in the early 'thirties, after Death Valley had been made a National Monument, the CCC boys came in to build roads and trails, and houses for the Park Service men and the Indians. They enclosed the waterholes with rocks and equipped the cemented cisterns with pumps. This was more sanitary for humans—but it robbed the wildlife of its watering places.

On our return last winter we found the animal-proof wells at Surveyor's, Stovepipe, Bennett's, Mesquite, and Shorty's Wells. That desert wonder, Hole-in-the-Rock Springs, was gone, as though lost in a blasting effort.

No bold desert foxes came to our camp last winter. Even the rat dunes looked deserted. Around Bennett's Well, we found no coyote tracks, no prints of wild burro hooves, no tracks of the cottontails which once burrowed beneath the sheltering sacatone. We asked one of the younger Indians, "What has happened to all the animals that used to be here?"

"Died," he said. "No water now. Just roads."

Shorty Harris, who lies buried in the "single blanket" climate of Death Valley, loved that land, not for its harshness, but for its life-saving waterholes, unfenced, free to every living thing. We never saw Shorty eat without putting out something for the animals, birds and insects that he knew would visit the water after him. Once we watched him make his last cupful of flour into a pancake for a hungry stray burro.



Shorty Harris, beloved Death Valley prospector, always dug his waterholes at an angle, so the smallest creature could crawl to water without danger of falling in. He once used his last cupful of flour to make a pancake for a hungry stray burro.

"He's old and his teeth are gone—like me," Shorty twinkled.

Shorty knew hunger and thirst as few men today have known them. It taught him to remember that wild creatures have those same needs. Shorty would turn in his rocky crypt today, to know that his old waterholes are sealed against them. The knowledge of the disappearance of Hole-in-the-Rock spring, would surely cause him to pick up his single blanket and walk forth again, to demand what some of us only meekly ask—that desert waterholes never be sealed up without adequate provision being made for the needs of desert birds and animals.



Beyond the near rise, Limestone Gulch cuts its way to the San Francisco River, flowing south to join the Gila. Agate and jasper are found along its slopes.

Jasper in Limestone Gulch . . .

Blood-red and deep purple jasper delicately veined with white or splotted with yellow flowers and swirls—there is good cutting material in Arizona's Limestone Gulch. Fenton Taylor explored this tributary canyon of the San Francisco River last fall, after enroute stops at the giant Morenci open pit copper mine near Clifton and the adjacent ghost town of Metcalf. Here is a one-day field trip combining mineralogy, mining and Western history.

By FENTON TAYLOR
Photos by the Author
Map by Norton Allen

JUST A MILE above Clifton, Arizona, a canyon slashes its way westward from a jumble of hills and purple mountains to join the San Francisco River, flowing south toward its confluence with the Gila. Some folks call it Limestone Gulch; more formally, it is Limestone Canyon.

Rex Layton, rockhound, lapidary and silversmith hobbyist of Thatcher, Arizona, asked my son Terrell and me if we would like to hunt agate and

jasper with him up this gorge. We eagerly accepted the invitation.

Once before I had hiked up the boulder-strewn course of Limestone Gulch and had carried out blood-red jasper beautifully patterned with streaks of white agate. I remembered how impressed I was by the vastness of the hunting area. Rex's proposal was the opportunity to take the return trip I long had promised myself.

"Let's make a full day of it," he

suggested. "We'll drive up to Morenci first and see the open pit mine." He referred to the multi-million dollar copper project of the Phelps Dodge Corporation six miles west of Clifton.

"Why not visit the site of old Metcalf, too?" I added. "I've heard that the ore dumps still yield occasional malachite and azurite specimens."

So it was agreed, and an early fall morning found us in Rex's station wagon traveling Highway 666 toward Phelps Dodge's tall smelter chimney overlooking the entire Clifton-Morenci territory. Its white smoke plume puffed and spread in the clear blue sky.

The paved ribbon of road bridged the steep twisting chasms, gulches and washes of a multitude of sedimentary hills. We tried to identify the larger cuts on our map and found "Rattlesnake Canyon" "Gold Canyon" and other descriptive names. This broken

region made early travel to Clifton tortuously difficult. Early-day shipping costs and supply prices were sky-high.

At last we rounded the final steep cut and coasted down into the canyon of the San Francisco River. Old mining equipment and ruins of buildings scarred the landscape to our left. Ahead, light green tailing dumps stretched down from the hills. The town of Clifton snuggled between the red rhyolite walls, occupying all available space on both sides of the river.

We drove through Clifton, following the paved way up the mountainside past the rows of modern homes built by Phelps Dodge for miners and their families. We passed the smelter and climbed toward the heart of Morenci, a cluster of houses clinging precariously to the steep slopes.

Not many years ago, paths angled steeply to the mountainside residences, making many of them difficult to reach. Morenci was known then as "the town without a wheeled vehicle." Deliveries were made to the homes on foot or by muleback. But modern development and automobile transportation eventually made a system of roads imperative—and possible. Narrow streets now lace the town.

Reports say that Henry Clifton, a mine recorder, first noted the mineral resources of this region. His findings were further substantiated by members of Colonel Carleton's California Volunteers who followed renegade Apache



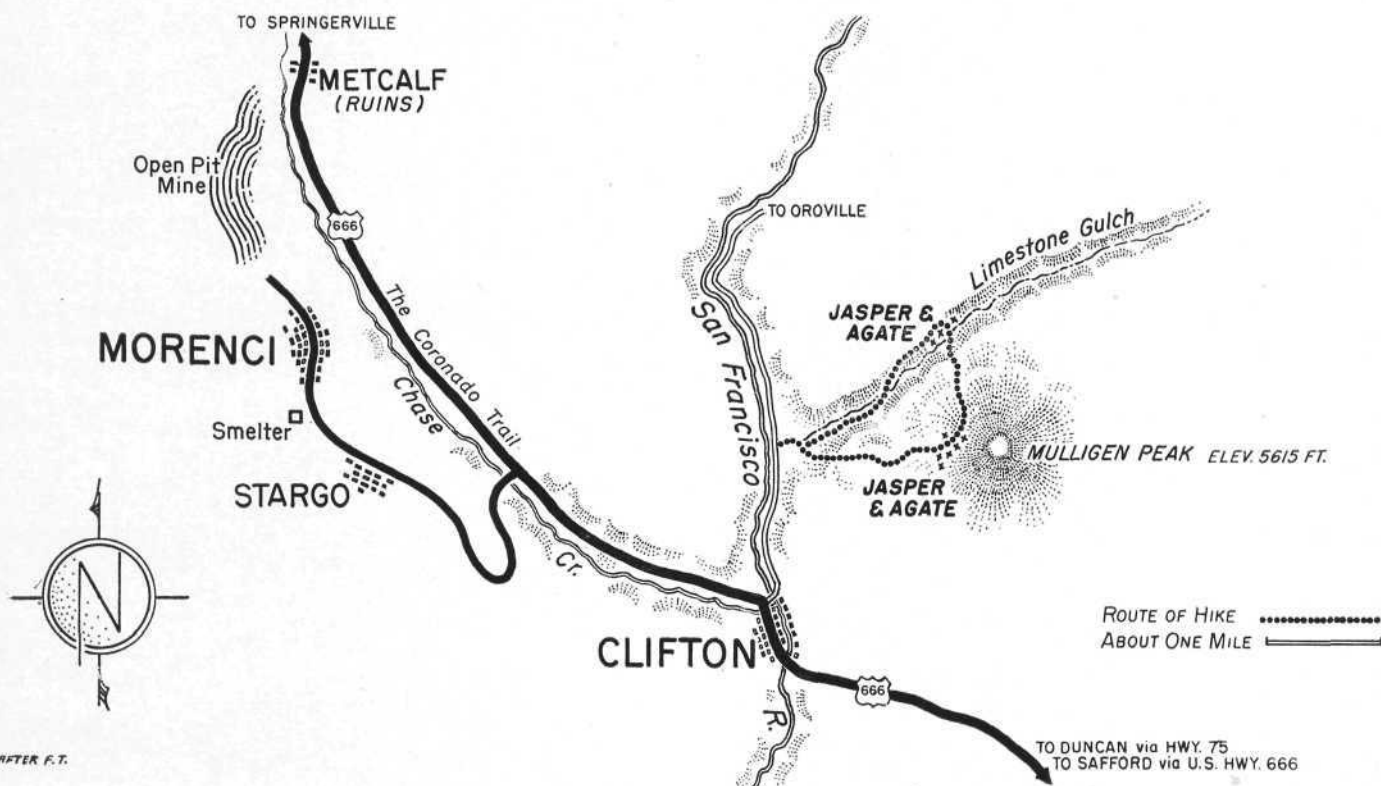
Morenci open pit copper mine, giant Phelps-Dodge Corporation project six miles west of Clifton. It is the largest operation of its kind in Arizona.

warriors into the area a short time later.

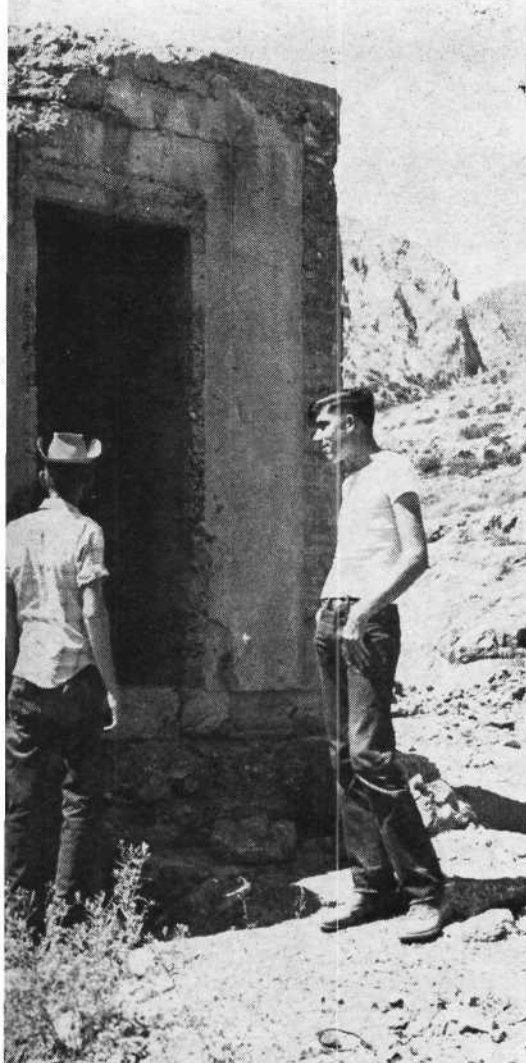
Robert Metcalf, an army scout, discovered rich outcroppings on what is now Chase Creek. Joy's Camp was the name he chose for the small settlement which sprang up soon after the strike. This label remained until William Church purchased a number

of the claims and renamed the camp Morenci in honor of a mining town in his native state of Michigan.

The early miners drove tunnels without regard for safety. Cave-ins took more lives than the few attacks by roving Apache bands. Since muscle power was the only kind available to move ore and accidents took a heavy



AFTER F.T.



Bruce Farley and Terrell Taylor examine the stout block that once served as vault in Metcalf's bank.

toll, jobs were always open. Many of the laborers were Chinese.

Scarcity of water constantly hampered operations. Peddlers sold cooking and drinking water to housewives, hauling it in earthen jars on muleback up the steep path we now were easily negotiating in our automobile.

We passed the new high school building and entered the business heart of Morenci. On the other side of town, we paused at a lookout point and had our first view of Arizona's largest open pit mine.

Huge terraces 50 feet wide and about as deep form giant steps from the bottom of the pit to the top, about 1800 feet above. They follow the contour of the mountain in a great curve more than a mile long.

Silver gray and olive green colors mark the richer ore in the center of the operation. These light tints shade off to the brownish-red rock above and to the sides, low grade ore and barren rock stained by iron oxide. A mixture of these two ores is made to keep the richer ore to the correct low percentage mark for which the plant was designed.

Distance dwarfed to the size of children's toys the huge shovels and

trains occupying the benches of the pit. Immediately below us were the repair shops, neat piles of supplies, tracks, ore cars and, off to one side, a power plant.

Plans for this vast operation were begun immediately after Phelps Dodge Corporation acquired virtually the entire Morenci district in 1921, including the town and public utilities.

Miners long had known of the existence of this deposit of low-grade copper ore. Someone called it the Clay Orebody. A few years of investigation and research convinced the company that open pit mining would prove the most economical recovery method over a long period of years.

For such an undertaking, they decided everything would have to be built anew—the ore crushing plant, the mill, smelter and power plant. Housing units were erected south of Morenci in a district named Stargo to provide homes for hundreds of added employees.

Work on the pit began with the stripping of 50,000,000 tons of overburden rock from the orebody, creating the huge amphitheater and making accessible 275,000,000 tons of ore.

At this point in the project, World War II broke out, creating an urgent demand for copper. The government requested Phelps Dodge to enlarge the entire project. The company went to work, and in a short time the plant was producing 1,000,000 pounds of copper a day.

By the end of the war, Phelps Dodge had spent \$42,000,000, supplemented by \$26,000,000 from the government's Department of Defense, in the creation of this tremendous mining effort.

Activity is almost continuous at the mine these days. Every evening as the sun sinks behind the mountains, the pit has lost 50,000 tons of waste material, and 50,000 tons of ore have been sent to the crusher to yield 20 pounds of metal per ton.

Electric locomotives haul eight ore cars along the terraces after a round of blasting. The huge cups of the shovels spill more than seven tons of material into the cars at each bite. The broken rock is carried to the primary crushing plant where a car dumps 80 tons of ore into the chute every 62½ seconds.

This first process ends with the drawing off of copper-laden froth which is thickened and dried. Addition of fluxing agents prepare this for the smelter, from which copper emerges in 700-pound plates called anodes. These are shipped to the El Paso refining plant for final removal of impurities.

One glance at the rapidly rising sun

made us realize we had overstayed our budgeted time at the pit. On the road again, we wound back down to Chase Creek, turning left on the Coronado for a brief visit to Metcalf.

Chase Creek was a rusty stream, its trickle of water staining the banks and rocks a dirty brown. We later learned the color was caused by leaching plants located farther up the creek. Piles of tin cans are placed in the water to capture the copper it carries through a process of replacement. Above the plants the stream became a beautiful clear brook flowing between blue rock banks.

Waste rock from the open pit is pushed down the western slopes of the creek, in some places filling it. Blue faces reflected from so much of the rock that we decided to investigate. We found thin veneers of chrysocolla to be responsible for the color.

Soon we saw the foundation lines of Metcalf. The buildings themselves had been carried away a few years ago. The solidly built bank vault still stands by the side of the road, a symbol of strength even though its steel door is missing.

Metcalf mushroomed following a gold strike in Gold Gulch, a mile north of the town site, in 1872. Arizona's first railroad was built between Metcalf and Clifton, nine miles of narrow gauge track to carry ore to the smelter. At first mules provided the power to move the cars. Later a lightweight locomotive—four men could lift it back on the tracks if it jumped—replaced the mules. This engine is now on display at the Arizona Museum in Phoenix.

A group of mine dumps to the north invited our inspection, but our watches told us it was time to get on to Limestone Gulch if we intended to gather any agate today.

We drove back to Clifton, crossed the San Francisco River on the bridge north of the depot and passed along the narrow street with houses so close we could almost touch them.

Limestone Gulch was easily identified. It is the first large canyon to the right, about a mile out of town. Its rock-strewn mouth widens to meet the river. An attractive cottage and stock corral are built on the south bank.

Parking close to the north side of the gulch, we secured our canteens to our belts, slung knapsacks over our shoulders. Immediately behind the corral a trail winds up the slope leading to the base of the conical landmark known as Mulligan Peak. This was our first hunting site.

I had been told that those who have ignored the trail and prowled the hills and gullies have found fine fortifica-

tion agate. However, as we wanted to reach the upper hunting region as quickly as possible, we stayed with the trail.

Up the hill a short way I observed an outcropping of chocolate brown rhyolite with seams of chalcedony weathering out. I stopped long enough to pick loose a chalcedony rose with smooth yellowish green swirls.

A hot sun beat on us relentlessly that afternoon, making the hike more tiring than it would have been on a cooler day. We began to wish we had done our collecting first and our sight-seeing afterward. But the distance of the hike was only about two miles, and in an hour we were approaching the top of the climb.

Along the way straggly mesquite and catsclaw held firm roots in the white soil. Greasewood added its pungent odor to the air. An occasional bedraggled Spanish Dagger and Yucca bristled with protective green blades.

Suddenly one of the boys yelled, "Gold!" and excitedly held up a rock. From its face the sun glanced in a yellow flash. He indicated a tiny yellow fleck which I examined under the magnifying glass. It was a perfect six-sided plate that could be nothing but a tiny crystal of muscovite mica. From then on, rocks along the trail kept shooting provocative flashes at us as though trying to distract us from our purpose.

Seams of calcite showed across the trail. I took some fragments along to test for fluorescence under the short wave light and was rewarded when they exhibited a pale pink glow.

Near the top we came upon a scrub cedar that offered enough shade to justify a few minutes' rest. Far to the west Morenci's open pit was a small white scar.

We had only about 200 yards farther to go, and the trail leveled out, making walking easy for a change. We came to a claim sign marked "No Trespassing." Although there was no evidence of recent working in the area, we passed it by for the hillsides beyond.

Both jasper and agate were scattered among the dark rocks. Color varied from lavender to red in the jasper, and some of it contained some swirls and lines of agate. It was undoubtedly vein material, but we did not try to locate the source as we were not prepared to dig.

Ahead of us reared Mulligan Peak. We hunted along its north side, then descended toward a water course that led northward to Limestone Gulch. Small agates were widely scattered along the way.



Buildings of the ghost town of Metcalf were carried away a few years ago, and only the foundations remain. Huge tailing dump in the background.

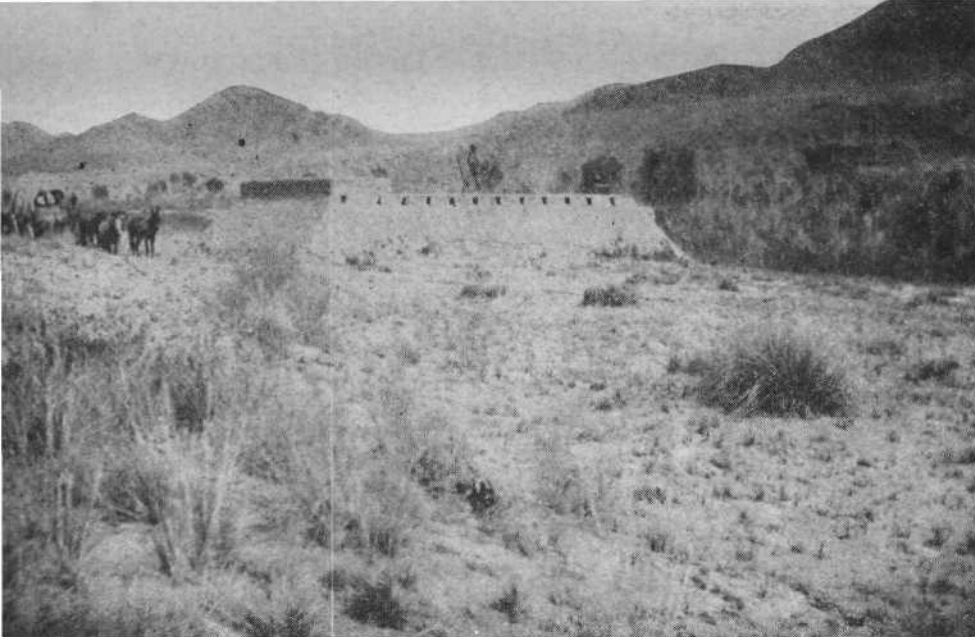
It is a steep drop into the gulch, but on the north side is the red jasper location. Here is material for brilliantly colored bookends and large showy cabochons. I found one deep purple specimen veined with red and white. Another piece was deep brown accented by yellow "flowers." A slab from one rock contained an almost perfect picture of a jackrabbit. Slabbing another small agate revealed brown tree-like moss caused, a collector later told me, by a small gold content.

Gray rhyolite outcrops often contained agate. I noticed one as big as a softball half imbedded in the rock. Careful picking loosened it, and I plucked it from its bed. When cut, it

showed a crystalline center of quartz and calcite.

On the return hike to the car, we noticed a large jasper boulder protruding from the bank. Molten magma, as thick as tar, must have oozed from a crevice in the hillside and hardened into the brownish mass. We passed two manganese workings with their dark-mouthed tunnels extending into the bank.

When we reached the car, the sun was almost gone. Fatigue quieted the wish that it would rise again another thirty degrees and afford a few hours more of daylight collecting time. This was a good gem area, the afternoon had assured us, and another day soon would find us again tapping Nature's buried treasures in Limestone Gulch.



Old photo showing fort at Camp Cady, California.

DESERT SHADOWS

By KAYE JONES
Fontana, California

I watch the evening sun go down
While standing by the door;
And gaze as the purple shadows creep
Across the desert floor,
At the eerie shapes
Each shrub then takes
As the light fades more and more.

The Yucca is a warrior bold,
In his eyes a savage glow.
I dare not make a single move
Lest the arrow leave his bow.
What fearful shapes
Silly fancy makes
Of things I so well know!

Ah there, the moon is rising high,
Its light the darkness chases.
The desert floor has changed again
As the shadows trade their places.
The warrior is gone
To the land Beyond
And leaves behind no traces.

RAINBOW'S END

By HELEN BURBANK
San Bernardino, California

I lived in city canyons
With walls so gray and steep.
My soul was starved for beauty
As I played in the city street.

In the depths of those dark canyons,
All the glory that I knew
Was the ribbon of blue at the canyon rim
Where the stars came peeping through.

Above for one short glistening hour
The sun swept by at noon.
I watched in breathless wonder
For the tiny crescent moon.

I longed for purple vistas
With arching dome of blue.
I dreamed of painted canyons
Aflame with rainbow hues.

Out west I've found God's canyons
Far flung on desert sands,
All purple gold and crimson
Untouched by mortal hands.

A big wide world of flaming hues,
Of vistas without end,
Each tinted from the pot of gold
That I found at the rainbow's end.

DEATH VALLEY BONES

By LOLA BEALL GRAHAM
Santa Cruz, California

Monument to progress—
"Lost in action"—bare
Trail of bones lies bleaching,
Marking miles out where
Wagons in slow motion
Struggled, westward bound,
Drawn by beasts of burden.
Now bones on the ground;
Trail that led ambition
To her golden quest,
Bones that led to Glory
Conquering the West!

SECRETS

By SARAH PHILLIPS SALINGER
Santa Barbara, California

Wise Nature holds her secrets
Close to her Mother's heart;
So close, each bud is destined
To live its mystic part,
True to the age old pattern,
True to the life force urge,
When sap and life are ready
From winter's sleep to surge.

Each has its sacred mission
To fulfill the mystery
Of how an oak remains an oak,
And how a Joshua tree
So gaunt and bare, yet Joshua-wise,
Redeems the barren ground
By wearing a halo of beauty
Like a glorified flower crown.

SONNETT OF THE SOUTHWEST

By WINNIE C. SAUNDERS
Tucson, Arizona

Do patio walls hold special charm for you?
Where cool green shadows vie with fragrant
flowers,
Where sun and stars gleam from your patch
of blue,
Do you rejoice in quiet lazy hours?
Or does the plaza with its teeming life
Where sundry wares are bartered in the heat,
Call you on fleetest sandals to the strife
Where all the world is jostling on one street?

Which do you choose? Seclusion's peaceful
way,
Without resistance surely growing old,
Or, on the plaza tread the world's highway
And bargain gaily for your share of gold?
Men of all creeds and colors elbow there,
But youth and joy dwell on the thoroughfare.

Desert Fort

By GLADYS L. SAVAGE
Denver, Colorado

Old adobe fort,
Built of the very earth on which you stand,
Like a solid monument to the land
You fought for and hold dear.

Your rafters still are staunch and straight,
As was the man who built you
A hundred years ago,
To serve the men and officers
And derelicts of fate,
Who followed new wagon trails
And were not content to go
Over the beaten paths that were secure,
Where danger did not lurk
And food was sure.

I stand on your old threshold with a smile,
There is deep respect within me,
But no reverence or guile.
I know from whence this groove was worn
A century ago,
The polished boots of soldiers,
Ranchers' heels and spurs,
The soft soles of Indians
And trappers with their furs.
I add my own foot prints to the time worn
wood
And stand here with a smile of pride
Where the others stood.

LITTLE JEFF

By PAUL WILHELM
Thousand Palms, California

Upon a blanket next to earth I lie,
A cricket sings, around me sails a bee,
In blue above I see the clouds pass by
And wonder: has mother forgotten me?
Now lightning strikes the sand from one
black cloud,
Afraid I close my eyes; I want to cry
But thunder shakes the earth and roars
aloud;
I'd not be heard if mother was close by.
I roll; I crawl upon my hands and feet
To safer places beneath a cottonwood tree;
The thunder drums, and march of rain is
fleet
As chickens running from the fox. I see
The kitchen scree: door open; mother comes
And picks me up and carries me into
My crib, and as she lays me down she hums
And sings, "The rain will make the world
anew."

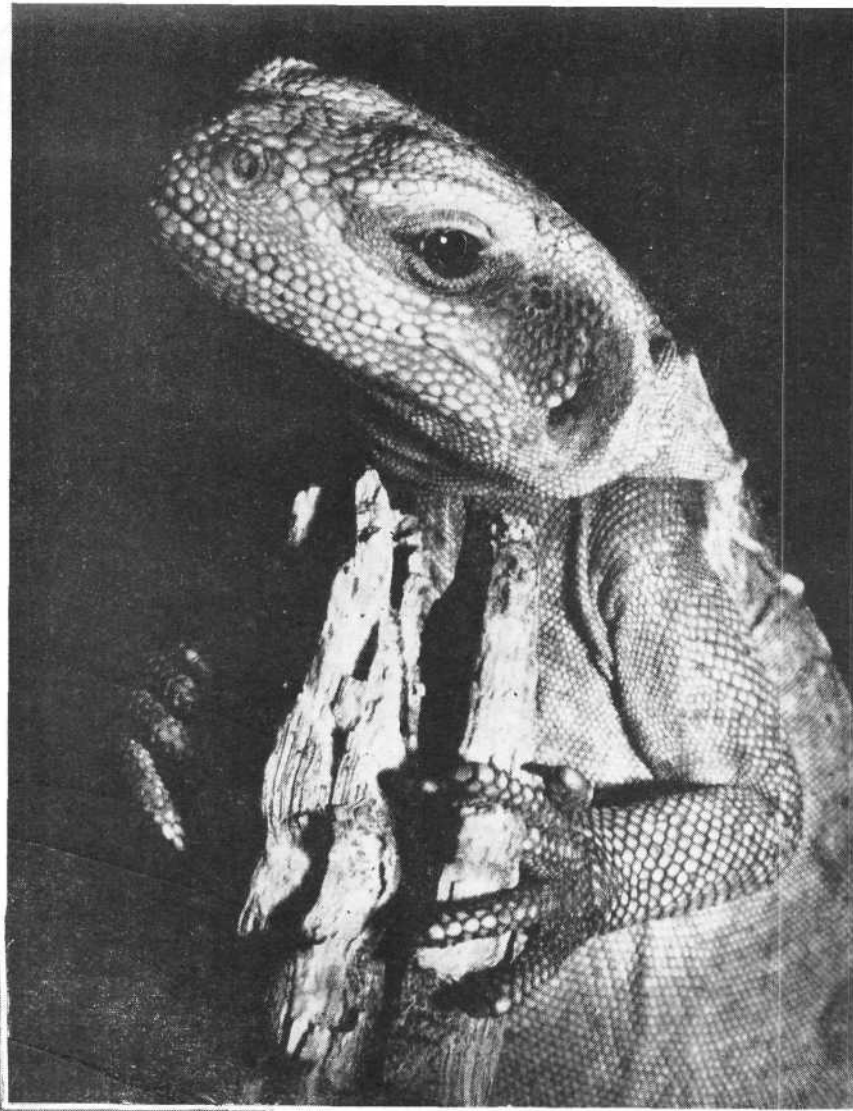
DESERT SANDS

By KATE ROCKWELL VAN DUREN
Sweet Home, Oregon

The sands of the desert are drifting,
I see them again in my dreams,
They cover the trail that you followed,
Through the same golden sunset beams,
And I hear your dear voice in the distance
As you rode and you sang, soft and low,
As you followed the path that led, dear,
From your homestead to mine—long ago!

Like the ghost of a memory from dreamland
You came once again to my side,
And the smell of the sagebrush is mingling
With the sweat of the pony you ride.
The low of the cattle I'm hearing,
On the bunch grass they graze, fat and sleek
When the roundup is over, you'll come, dear,
To me where I wait by the creek.
Life's sand and the sands of the desert
Drift on, and I wake with a start.
And all that's left to me now, dear,
Is the memory of you, in my heart.

PICTURES of the MONTH

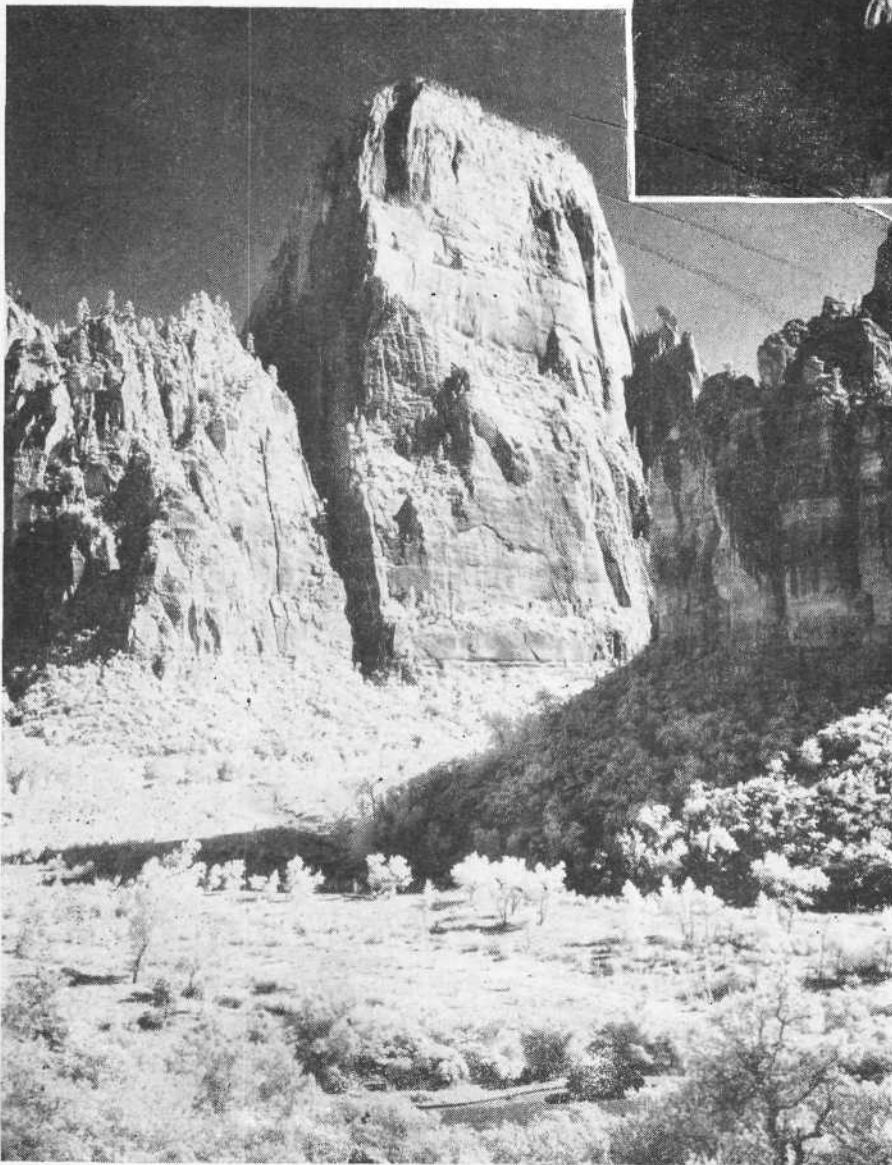


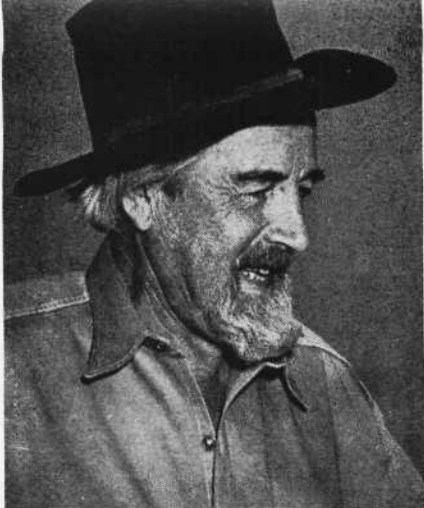
Chuckawalla Pal . .

Clinton L. Hoffman of Arcadia, California, hated to part with this friendly chuckawalla after taking his picture near Whitewater, California. The lizard would have made an interesting pet. Hoffman's photograph, taken with a 4x5 Speed Graphic camera, 1/200 second at f. 32 with flash fill, won first prize in Desert Magazine's May Picture-of-the-Month contest.

Great White Throne

Second prize in the May photo contest went to Willard Luce of Provo, Utah, for this landscape showing the Great White Throne landmark in Zion Canyon National Park. He used a 4x5 Speed Graphic camera, 127 mm. Ektar lens, Infrared film and red filter, 1 second at f. 22.





120° in the Shade . . . By HARRY OLIVER

(and there ain't no shade)

The summer sun is beating down these days on old Fort Oliver at Thousand Palms, California, where Harry Oliver publishes his 5-page newspaper, the Desert Rat Scrap Book. Harry sits in the breeze of a wheezy old fan and pecks at his ancient typewriter—and this is what he has been writing:

¶ This summer Harry Marrel of Rancho Vaquero got so mad at the heat he turned the face of his thermometer to the wall.

* * *

¶ Outside the lizards are hanging by their tails on the shady side of the cacti to keep their tummies from getting blistered on the ground.

* * *

¶ Got so dry one summer the fish in Salton Sea began kicking up dust. Had to call out the Mecca fire department to wet the place down.

* * *

¶ Too hot to go any place and not much to do so for a month I have been trying to teach my dog Whiskers to play checkers. He will make about two moves, then lie down on the cool floor. Slows up the game somethin' awful, so I locked him up in the room with a double jump right in front of him and told him it was his move. After a while I peeked through the keyhole and there he was sittin' on my desk usin' the checkerboard to fan himself. "Hot dog," he exclaimed.

* * *

¶ Last year about this time a rain came—but it all turned to steam before it hit the ground.

* * *

¶ Did you know the Mojave lizards travel in pairs during the summer. One rides the other piggy-back 'til he gets his feet cooled off. Then they trade off.

* * *

¶ My dog Whiskers' nose is so hot he burned a hole in the back door.

* * *

¶ Old-timer McRae who lives west of Fort Oliver always carries a saucer when he goes to the faucet to get a drink—has to blow on the water a spell before it's cool enough to swallow.

* * *

¶ Something ought to be done about thermometers. At least about the ones they make for the desert. Louise Eaton says hers only register up to 120 degrees—and when she got home from her mid-summer vacation they were floating in the air up next to the ceiling. Got so hot the mercury just shoved the whole thermometer up there and she had to get a step ladder to bring 'em down.

* * *

¶ Time for my bath. I've had the electric fan setting in the bathroom window trying to suck in that mirage out there to fill the bathtub. Only trouble is I've never known a mirage to bring soap and towel.

* * *

¶ Yes, we had a six-inch rain one year in August at old Fort Oliver—only a six-inch rain here means drops six inches apart.

¶ Some people don't like our desert. I saw an old-timer loading everything he had on an old jalopy that was headed east. "This would be a fine country if we just had water," I said. "Yes, and so would hell," he answered.

* * *

¶ They tell a story about Dry Camp Blackie. He's been prospecting around here for years. One day a drop of rainwater hit him on the forehead and they had to throw two buckets of sand in his face to bring him to.

* * *

¶ Sometimes it doesn't rain out here for years. I remember an old homesteader over in Borrego Valley. He had his family with him and he told me: "I hope it'll rain before the kids grow up. They ain't never seen none."

* * *

¶ Yesterday two city real estate men in blue serge suits called at the Fort. They got into a jeep and started across the sand dunes. When the jeep finally reached the other side the two blue serge suits got out and started off across the desert. The men had melted out of 'em.

* * *

¶ Here at old Fort Oliver I can look farther and see less than anywhere else on earth. Just picked up my old telescope to take a look over Boiling Flats way—an' believe it or not, even the jumpin' cactus are trying to get into the shade of the big rocks. But they've lost their jump—they are just wiggling along on the ground.

* * *

¶ Needles, California, and Yuma, Arizona, have been feudin' for years over the question of which place is hottest. The Needles chamber of commerce sent out word that their flagpole had just melted to the ground. The Yuma secretary answered: "That's nothing, when our flagpole melted down three months ago it burned a hole in the ground all the way down to hades—and when that first blast of air from hell came up out of that hole we all had to wear overcoats."

* * *

¶ Gets so hot over in Arizona the woodpeckers drilling holes in those big cactuses carry umbrellas so they can work in the shade.

* * *

¶ Ol' Blue Mountain Hard Rock says: When you see a dog running around over the burning desert sand holding up one paw, you know it's pretty warm—but when you see him running around with two paws up to keep them from getting burnt you know it's gosh-awful hot.

* * *

¶ And Dry Camp Blackie is in a bad humor today because his breakfast eggs was hard-boiled. He likes 'em soft. But I can't help it—the hens laid 'em that way. This heat does some awful things.

LIFE ON THE DESERT

By CARITA SELVAS

The author's staid New England parents worried at first about the "evil influences" their children would encounter in the rough mining camp of Calico, California. But evil hadn't much chance in the great outdoor playground of the Mojave Desert—and a family life filled with love, learning and a never-ending curiosity about Nature.

FATHER, A Dartmouth graduate and product of many generations of stern New England training, had left a theological seminary to become a teacher in California. A rigid code of ethics demanded that he preach morality and denounce the evils of drink and tobacco to his pupils, and we wondered how he would weather the new teaching job in the rough and ready mining camp of Calico.

Previously Father had held the principalship of a large school, where his sound education and strict moral attitudes were appreciated, when he was struck by a near-fatal attack of typhoid pneumonia. "He must have absolute rest and a change of climate," the doctor told mother when the crisis was past. "Health is more important than your salary," he added when Father wondered how he and his family would manage.

Mother determined to help. She passed a California teacher's examination and secured a position in a little country school. Father compromised with the doctor's prescription and accepted a teaching job in the wide open mining town of Calico, on the Mojave Desert. After several months in the hot dry air of the desert, he seemed completely cured.

He returned home looking strong and hearty again, with wondrous tales to tell of the vast Mojave—the gorgeous purple, red and gold tints of the ore-rich Calico Mountains, the multi-colored carpets of spring wildflowers, the glorious sunshine and pure dry air. Even the occasional rain storms were more refreshing than any he had experienced before. It was a rough life, he admitted, but more satisfying than any he had ever known. He had cast off many New England inhibitions and fairly glowed with health and enthusiasm.

Mother sighed at those Calico tales and said sadly, "I'm afraid you have strayed far from the things you used to believe."

"No, Mary Ellen, I have not changed one iota," Father assured her. "Life is just different in Calico." How different he did not say.

"What do you do on Saturday?" I asked eagerly, for Saturday had always been our big day with him.

"I take my prospector's hammer and wander over the Calico Hills,

studying their geology. Some day I may uncover a gold or silver mine!" And he would laugh as though gold and silver didn't mean very much to him — and I don't believe they did.

"On the cold rainy nights, what do you do, Daddy?" my sister asked.

"Well . . ." Father hesitated. "Well —there is no place to go at night, and one can't sleep forever, nor be cooped up in the little room where I live. So I often wander into the saloons and dance halls and watch the crowds."

"Oh no, Charles, not you!" Mother exclaimed horrified. "Not you—loafing in a saloon?"

"It's warm and bright in there and I am learning much that will help me to teach the California boys and girls right living. Isn't that a worthwhile goal?" he countered.

And then he told us, as he did so many times afterward that it became a standard family joke, about the rough old Calico miner who would come into the saloon each night and order a large glass of the strongest whiskey.

"Then, stepping up to the bar," Father would say slowly and impressively, while we waited in high glee, "he would stir into it three or four heaping teaspoonsful of cayenne pepper. Could anything better illustrate how strong drink will eventually burn out the stomach and produce death?"

At last he sprang his great surprise upon us all. He had secured the little school at Daggett for Mother if she would only accept it. It would be much easier for her and we could all be together again, he argued.

"But Charles," Mother protested, "how can we take these children into a place where there are no churches and so many evil influences?"

"There are evil influences everywhere," defended Father, "and I believe if we do our part at home, evil influences will never touch our children."

Thus prevailed upon by the whole family, to whom Father had presented such a glowing account of life on the desert, but with many misgivings, Mother consented to go.

As the Santa Fe train climbed slowly over Cajon Pass and out into the open desert we could all sense, though she said nothing about it, that Mother's courage was sinking lower and lower. When the train finally stopped at the Daggett depot, she

looked as if she had reached the limit of her endurance. But Dad and we children were thrilled beyond expression. Never before had we seen such unlimited space in which to exercise our unbounded high spirits.

We also enthusiastically approved of the house to which Father proudly led us—a large old adobe with a wide veranda and a row of cottonwoods shading it on two sides.

After a few days on the desert, Mother lost her woe-begone look and seemed happier than ever. We frequently saw her sniff the delightful air and gratefully fill her lungs with it. She spoke often of the clear blue desert sky and the gorgeous colors of the Calico Hills. As for us children, our delight in this new land was unbounded.

Gradually we met our nearest neighbors and found them interesting and charming people. On our left was the small unpainted house of an official of the borax company. Farther down lived the superintendent of the borax mine, and beyond was the fine home of a wealthy official who, we heard, had once attempted unsuccessfully to lay wooden tracks across the desert.

Then there were the station agent, the express agent and other people of importance in the town. They were wonderful friends and neighbors. Like our little family, they loved the freedom of this new land and hoped to prosper here.

So Father, strong, carefree, and happy again, taught his rather large classes at Calico, and Mother, her little one-room school at Daggett.

Highlight of our week was Friday night when Father returned by stage to spend Saturday and Sunday with us. He knew so many ways of entertaining us for which Mother rarely had the time. He played croquet with us on the ground, which he had laboriously leveled and tamped. He sang his rollicking college songs and romped with us until it was time to come in at night.

Dinner over, we all would gather around the coal oil lamps while he read us stories which were too old for us but which we thoroughly enjoyed—Dickens, Scott, Thackeray's *Vanity Fair* and some of Cooper's Leatherstocking tales.

In those after-dinner evenings on the desert, Father gave us a love for

great literature which has persisted throughout our lives.

Later, Mother played her organ and we all sang the hymns they both loved so well. Father, who sang by note, was very meticulous about the rhythm of the music and beat time constantly to keep us all on the right track.

And the "evil influences" which Mother had so feared did not seem to touch our lives. With a father and mother like ours, the unbounded desert in which to play and new wonders to be discovered daily, they didn't have a chance.

Father resolved that we should keep the Sabbath as he and his stern forebears had done for generations in far away New England. So on Sundays, our swings, croquet balls and mallets, even our dolls, were put away for the day. But Father also understood the danger that such rigid rules could create in us a hatred for the Sabbath. So on Sunday afternoons he compensated for all the strict measures by taking us for long walks, usually along the Santa Fe Railroad toward Barstow, nine miles to the west. It would not hurt us, he reasoned, to learn about the world that God had created.

Walks with my father were wonderful lessons in Nature. Someone once had laughingly dubbed him the Animated Encyclopedia, a cognomen which he rather resented, but a fitting one.

As we walked beside him down the railroad track, he taught us many things we never forgot. He demonstrated that law of physics which states that cold contracts and heat expands by calling our attention to the space allowed when the rails had been riveted to the ties. If this were not done, he explained, the rails would expand in the desert heat until they would buckle up and wreck the trains.

He told us why our desert was so hot and dry, and how the Coast Range which we could see in the western distance held back from us most of the moisture from the Pacific, spreading it instead along the California Coast.

We learned why desert plants, like the greasewood and sage, had such small leaves and how cactus leaves had thickened through the ages so as to retain more moisture. He did not call this transpiration but we got the idea.

Sometimes we would look for and study the different cactus forms we found along the railroad. He never attempted to teach their botanical names, but gave them names we could remember. We knew them all—the

cholla, the hedgehog, the barrel, the lady fingers and the prickly pear—and we knew how to treat them gently and respectfully. We learned to love their beautiful blossoms and their fruit.

On other Sabbath afternoons, Father taught us about the different minerals which abound on the Mojave. We learned to distinguish silver, copper, lead, iron, gold, fool's gold, borax, mica and many others. He helped us to gather and label collections of these minerals.

We had our lessons too, about the poisonous insects and reptiles and how to be on guard against them. We were allowed to bring home the harmless little sand colored horned toads, which we staked out by long cords in a box of sand on the window ledge. We watched them catch flies and gnats as they crawled over the window screen, and they became our cherished pets.

Then there were the birds. Our favorites were the comical road runners. Unbirdlike, they seemed to enjoy running far better than flying. Their exceedingly long legs and tails balanced their bodies perfectly, and how they could cover the ground! Joking, Father said we might catch one if we could put salt on its tail. Perseveringly, we pursued them down the rough, sandy wagon road which ran beside the tracks, always expecting to bag one, but never quite succeeding.

We shuddered when we saw the evil looking turkey buzzards, circling low about the sky. Although we hated them, we remembered the time the thirst-crazed old prospector was lost on the desert and was discovered and rescued just in time because of these hideous circling creatures, and we grudgingly gave them some credit.

Then there were the desert animals—the pack rat, the jack rabbits, the tiny cottontails, the cunning coyotes and patient tortoises. The names and habits of all these strange creatures Father painstakingly taught us.

There was always something new to see and learn. The Mojave Desert was never tiresome and dull.

However, life on the Mojave had its hardships too. One afternoon of a cold windy winter, the first desert sand storm we had ever experienced descended in fury upon Daggett. The wind blew "as would blawn its last," as Bobby Burns would say it, and there was an icy chill in the air. The blood red sun nearing the western horizon was almost completely obscured. Flying sand and pebbles cut our faces if we dared venture forth.

It was again brave Mother who must

cross the railroad and the wide sandy street for the groceries we needed for the evening meal. We children could not stand up against the heavy blasts of wind and sand.

She started out bravely enough, propelled by the fierce gale, and was soon lost to our view behind the thick veil of sand and dust.

Much later she returned, firmly grasping her cherished provisions but with a look of deepest humiliation upon her face.

"Oh, what will people think?" she gasped, when she could catch her breath. "I could not see a thing! I thought I was opening the grocery door. But I walked right into the saloon next door! It was full of men drinking and carousing. What will people think of me, the school teacher?"

Her discomforture was as great as had been her struggle with the violent elements. For in those days no respectable woman in Daggett would have entered a saloon, much less a staid New England school teacher.

We were not to remain forever in this vast alluring playground. Father had always been an exponent of Duty with a capital D. "Always do what is expected of you, Daughter," he would gravely admonish me. He practiced what he preached.

His own father was growing old and needed care and companionship, and Father felt he must return to New England. Mother agreed, although she also had grown to love the desert and our home there.

We did not remain long in Daggett after Father left. I can still see the look on Mother's face as, heavy-hearted, we stood on the rear platform of the Pullman, sadly bidding goodbye to all these desert wonders.

Poor old yellow dog Prince, our guardian friend and companion, followed the train until he no longer could match its speed. We waved until he became a small yellow spot and then faded from our sight.

"Won't we ever come back to the desert, Mother?" we asked, tears streaming down our faces.

"I hope so," Mother answered. "I've never before had so little and yet been so carefree and contented."

We never did return to the desert. Our paths, later divided, led to far different and far tamer places. Father continued to stand on his principles wherever he lived and worked, and Mother, while she sometimes doubted the wisdom of some of his moves, patiently followed him.

LETTERS

Golden Ghost of Nevada . . .

San Bernardino, California

Desert:

Nell Murbarger's story, "Golden Ghost of the Nevada Hills," in the January issue of *Desert Magazine*, was read and enjoyed with special interest. The tailings from the Bamberger Mine in DeLamar were obtained by my grandfather, M. D. Painter, through a trade many years ago. Upon his death, my father was appointed administrator of the estate. The family considered the tailings a white elephant until the price of gold was raised in 1933.

During the early '30s, I made numerous trips with my dad to visit the property and talked with mining engineers who wanted to work the tailings, which had been assayed at all the way from 30 cents to \$1.25 a ton. The tailings eventually were worked at a good profit by a mining engineer from the San Francisco area who I believe was named Hazen.

At the time of our visits to the property, we had the privilege of visiting with Mrs. Horn (*Desert*, October '51, p. 32) and her sons who were doing some development work in the area. It was my impression at the time that Mrs. Horn had resided in the area from the time DeLamar was first developed.

I regret that I did not have the interest in the Southwest 20 or 25 years ago that I have today. Little do we realize that what is commonplace today may be history tomorrow.

DEAN A. PAINTER

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The Long-Lost Arch . . .

Whittier, California

Desert:

I enjoyed reading Randall Henderson's story of the Sierra Club ascent of Mopah Peak (May *Desert*), but I find in it one serious error. The author intimates (p. 15) that the Lost Arch Mine is in the Turtle Mountains.

Actually, the Lost Arch is in the Whipples. I know where. There are arches all over the desert, but none like the one that gave this lost placer ground its name.

PAUL J. LINSLEY

There is a wide difference of opinion as to whether the Lost Arch placer was in the Turtles, the Old Woman Mountains or the Whipples — and until someone locates the mine, one man's guess is as good as another's.—R.H.

Oddity No Rarity . . .

Vista, California

Desert:

It was of great interest to me to read in the May issue of *Desert Magazine* (p. 31) of Raymond Barnes of Blythe catching and Game Warden George Warden identifying the bony tail as a rare specimen.

When my brothers and I were kids in Needles, California, around 1910, we used to fish the Colorado River and have caught hundreds of these same "rare" fish. They were edible but were full of what seemed like thousands of tiny bones, and it was quite a feat to eat one.

It was about this same time that I remember the last of the paddlewheelers on the river. The old smelter was then in operation and run by a man named Godshall.

It is quite a tame river now, compared to what it was then. We used to watch it in terror as it undercut its banks and swallowed house after house in swollen fury.

ROBERT N. DOYLE

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Beware the Rattler . . .

San Clemente, California

Desert:

I have been following with interest the various comments *Desert* readers have made regarding rattlesnakes on the desert.

I am not retired, but for nearly 40 years I traveled desert areas for the Land Department of Southern Pacific Company. S.P. had been granted almost every odd-numbered section. I don't believe I encountered more than 20 rattlers in 300,000 miles of driving, and probably not more than a dozen in the brush.

It is in the springtime that the snakes come out, looking for food after a long winter's hibernation. Another reptile, the desert tortoise, also ventures forth in the spring, seeking his favorite dish, the thick juicy leaves of the squaw cabbage.

Many times I have noticed rattlesnakes in the brush adjoining a trail, near fresh livestock droppings. Old-timers tell me that field mice and other rodents are attracted by the manure, and the snake lies quietly awaiting a victim. Twice I have found a snake on each side of the trail. Once this happened in Vermilion Valley on Mono Creek, California; the second time, by odd coincidence, in an area of the upper San Gabriel River called Vermilion Bluffs. On this last experience, I never knew what happened to the snakes, as I jumped so high and so far that I landed plumb in the middle of the creek.

FRANK B. RUTLEDGE

Rattlesnake Markets . . .

Blackwell, Oklahoma

Desert:

In reply to Gilman Taylor's letter in the May issue of *Desert*, I would suggest that he write to the International Association of Rattlesnake Hunters, Okeene, Oklahoma. Joe Durham, "Chief Rattler" of the organization, will gladly give him all the information he requires about selling rattlesnakes. The association maintains an international market for zoos and drug houses.

In April, the annual Rattlesnake Roundup was held at Okeene, and 1,576 rattlers were captured alive. Russell Strayhorn, who lives near Watonga, snared the largest snake of the hunt—75½ inches of buzzing, deadly reptile. Strayhorn pocketed \$51.50 auction proceeds for his champion.

These Rattlesnake Roundups in Oklahoma are billed as the world's most unusual sporting event. This year's hunt attracted an estimated 20,000 sportsmen from 26 states.

The snakes captured in the Gyp Hills of Northwestern Oklahoma are diamondback rattlers. 'Tis said that even Texans come up here for their big ones!

MARIE KENNEDY

• • •

With a Mouthful of Snake . . .

Miami, Arizona

Desert:

I feel some comment should be made in reference to a letter in the May issue of *Desert*, signed by Arthur S. Drake. The writer quoted a Hopi friend as follows: "He told me that before the snake dance each participant is given a preparation which he holds in his mouth during the dance."

As one who has seen the snake ceremony 17 times, I think there was a misunderstanding in this quotation. It is highly improbable that a snake dancer can hold a "preparation" either solid or liquid in his mouth while dancing around the plaza with a three or four foot snake in his jaws.

VAL H. SHERMAN

• • •

No Monotony Here . . .

Little Rock, California

Desert:

A mile or so beyond the "Ain't This Monotonous" sign pictured on page 28 of the January issue, is another which answers the first: "Or is it the Peace that Passeth Understanding?"

To a desert lover like myself, there is no such thing as "barren" or "monotonous" desert — just peace, rest, quiet, beauty.

A READER

MINES and MINING

Moab, Utah . . .

Utex Exploration Company has announced an agreement with Salt Lake City interests, including Combined Metals Reduction Company, to build a \$4 million uranium mill at Moab. The mill would employ between 300 and 400 persons. "Negotiations with the Atomic Energy Commission will start immediately," Utex President Charles A. Steen announced at a recent stockholders' meeting, and added that he anticipated no difficulty in obtaining AEC approval of the project. The newly-formed Uranium Reduction Company, a Nevada firm, will construct the concentrator across the river from the town of Moab and adjacent to an ore-sampling operation of the AEC, Steen said. — *Caliente Herald*

Lovelock, Nevada . . .

Discovery of what may be a major deposit of uranium at Lincoln Hill in the Rochester area has been announced in Lovelock. The discovery of autunite ore was made by Ed Bottomley of Lovelock. He said he came across the uranium by chance while prospecting for silver. Samples of the ore have been sent to the Atomic Energy Commission for analysis, and Bottomley hopes a government loan can be obtained for development of the property. — *Humboldt Star*

Moab, Utah . . .

Walter Gramlich of Moab is believed to have marketed the highest priced ton of uranium yet to come off the Colorado Plateau. Gramlich received \$4,021 for ore he delivered in May to the Climax Uranium Company. It came from the Blue Jay Mine in Southwestern Utah. The assay sheet showed it was 24.14 percent uranium and 14.53 percent vanadium. Payment included an Atomic Energy Commission bonus which is paid until 10,000 pounds of uranium has been produced from a new mine. Gramlich has been operating the Blue Jay a little over a year. — *Phoenix Gazette*

Lovelock, Nevada . . .

Desert Queen mining district near Brady's Hot Springs has come back to life. Joe Lang and Jess Robinson, San Francisco mining men, have leased the Desert Queen Mine and already have shipped eight carloads of gold ore to Parrin. Owners of the mine are Karl Olfers and Herman Marker. — *Pioche Record*

Mojave, California . . .

Minard Mining Company was formed and incorporated following the recent tungsten discovery of Bruce Minard and Sam Cuddeback one mile west of Cinco. The scheelite outcrop is about 1000 feet wide and two miles long. The ore is spread over a granite schist and runs as high as 10 percent tungsten in some places. Assays are being made to determine whether the deposit could be worked profitably as an open quarry. — *Mojave Desert News*

Fallon, Nevada . . .

Nevada Scheelite Mine has a better reserve of tungsten ore now than it had three years ago when it became a division of Kennametal, Inc., believes E. M. Colwell, general manager of the mine and mill. Mining is at the 400-foot level now, and diamond drill exploration has shown substantial deposits at 500 feet. "We have raised production from about 2500 units a month to 3000," said Colwell. "The mill, which was handling 90 tons, now takes up to 120 tons a day." The mine and mill are located 54 miles southeast of Fallon in northern Mineral County. — *Fallon Standard*

Winnemucca, Nevada . . .

Winnemucca Mountain Mines Company, which has been developing its gold property near here, recently expanded its operations into the tungsten field through the purchase of the Star tungsten mining property in El Dorado Canyon, Pershing County. The company has revamped its gold mill into a 50-ton tungsten plant and by adding more tables will be able to mill 75 tons of tungsten a day. — *Pioche Record*

Pioche, Nevada . . .

Bristol Silver Mines has announced discovery of highgrade ore on the 500-foot level of its mine 25 miles southwest of here. According to assay reports, the new ore body shows a content of 19 ounces in silver, 13 lead, 14 percent zinc and three percent copper. The vein is 12 feet wide, but the exact extent of the ore will not be known until blocking out operations are completed. Early estimates evaluate the find at \$55 to \$60 per ton, high enough to make shipping profitable. The Bristol Mine has been in operation continuously, except for depression years, since 1875. It is considered one of the richest in the state. — *Territorial Enterprise*

Vernal, Utah . . .

Thirty patented lode mining claims on the Dragon-Rainbow-Pride of the West lodes in the Watson-Dragon area were sold this spring by C. J. Neal of Vernal for \$200,000. Purchaser of the gilsonite property is the American Gilsonite Company, producers and marketers of gilsonite and gilsonite products. — *Vernal Express*

Battle Mountain, Nevada . . .

Magnet Cove Company of Houston, Texas, has leased the Greystone group of barite claims 35 miles south of here. The property has been held for the past few years by George Dyer of Tonopah, Lee Hand and Alvin Layton of Battle Mountain. It is located about three air miles from Mill Creek summit. The company is operating a treatment plant at Beowawe and is in the process of building a road from Beowawe to the Greystone site. The plant is running about 20 tons per hour from two other Magnet properties nearby, and operations will be stepped up when the Greystone begins to produce. — *Mining Record*

Pioche, Nevada . . .

Atlanta Gold and Uranium Company is shipping 100 to 150 tons of ore a day from its Atlanta Mine 40 miles northeast of Pioche in Lincoln County. According to C. E. Collins, chief engineer, the ore is running in the neighborhood of \$12 to \$15 a ton in gold. In addition to the gold, the ore contains a considerable amount of uranium oxide, he said, present assays estimating it at \$11 to \$15 a ton. — *Mining Record*

Carlsbad, New Mexico . . .

Two oil drillers who prospected with a geiger counter in their spare time may be credited with the first uranium strike in Eddy County. A. A. Pitts and Bert Price, Jr., have filed 85 mining claims on a narrow strip of government land running along Rocky Arroyo, approximately 25 miles northwest of Carlsbad. Although a few assays have been made, it has not yet been determined if the ore is of commercial value. To be eligible for AEC bonus, the ore must assay .1 percent uranium on the first five tons mined. — *Eddy County News*

Kingman, Arizona . . .

A lease of ten years' duration with option to purchase has been granted by Triumph Mines, Inc., on their White Chief Mine at Oatman to two Los Angeles mining engineers, R. S. Douglas and John P. Farquahar. The property consists of six unpatented mining claims located 1½ miles southwest of Oatman. — *Mining Record*

Here and There on the Desert...

ARIZONA

Considers Navajo Diet . . .

GANADO — The answer to the mystery of cancer may lie with the Navajo Indians, believes Dr. Clarence Salsbury, commissioner of the Arizona State Department of Public Health. He believes the reason for the low incidence of cancer among Navajos may lie partly in their diet. "It is low in leafy green vegetables, heavy in meat, and their bread comes from corn ground mostly by hand," he pointed out. Routine blood tests performed on patients at Sage Memorial Hospital on the reservation here show that Navajo blood sugars consistently run 20 to 25 points below those of white persons. Does diet cause this difference, and does this in turn affect the incidence of cancer? Dr. Salsbury wonders. He plans further investigation and experimentation in an attempt to find the answer.—*Phoenix Gazette*

Passing of "Supai Mary" . . .

GRAND CANYON—"Supai Mary" Wescogame, oldest member and uncrowned queen of the small Havasupai Indian tribe that resides in the bottom of the Grand Canyon, is dead. She was buried at Drift Fence, Supai graveyard located at the top of beautiful Havasu Canyon in late April. Records in the Indians Affairs office show that she was born in 1866, but her children insist she was 97 "summers" old at her death. She was the daughter of Captain Burro, old-time chief of the tribe under whose direction the Havasupais withstood attacks of the warring Apache tribes.—*Coconino Sun*

Ceremony to Remain Secret . . .

WINDOW ROCK — Chances are slim that the Navajo Tribal Council will publish aged Father Berard Haile's monumental work on the sacred Navajo religious ceremony, the "Blessing Way." Sam Ahkeah, tribal chairman, said the Indian Bureau had vetoed the council's former decision to appropriate \$30,000 for publication of the manuscript. Ahkeah said the council had hoped not only to use the book as a written record of previously unrecorded religious ceremonies, but also to use it in claims before the Indian Claims Commission. He said certain material in it concerning original land boundaries was thought to be useful in the tribe's case. However, he admitted that the tribe's lawyer—and Father Berard himself—had advised the book would make no real difference in the claims.—*New Mexican*

Grand Canyon Museum . . .

WASHINGTON — Senator Carl Hayden (D-Ariz.) has revived the oft-discussed proposal for a museum at Grand Canyon National Park with a request to Conrad Wirth, director of the National Park Service, to submit an estimate of how much money would be needed for the project. Wirth told Hayden the museum "is very high on our priorities" and estimated it would cost about \$500,000 to build the kind of museum-administration headquarters unit the park service wants. No funds for the museum were included in the park service's 1955 budget requests.—*Phoenix Gazette*

Bridge Plans Okay . . .

YUMA — With Arizona Highway Commission approval granted in May, the new Colorado River bridge at Yuma seems assured. The State of Arizona's contribution to the project will amount to nearly a half million dollars. The bridge will be built as an extension of Fourth Avenue. — *Yuma Morning Sun*

New Grand Canyon Chief . . .

GRAND CANYON — Preston P. Patraw has taken over duties as superintendent of Grand Canyon National Park, succeeding Dr. Harold C. Bryant. Patraw was transferred from a position as assistant director for the National Park Service at Santa Fe, New Mexico. He had previously been assistant superintendent here.—*Coconino Sun*

Hopis Protest Liquor Bill . . .

HOTEVILLA—"We have lived a long time without the white man's evil. Without 'crazy water' our religious and traditional way of life has been good," Hotevilla leaders said in a statement issued recently in protest against proposals to be submitted to Arizona voters in November. If passed, they would make it legal for Indians to purchase liquor in the state. The Hotevilla Hopis cling to the ancient tribal way of life which has no place for intoxicants and which sets a pattern of behavior emphasizing kindness, helpfulness and friendliness with strong stress on religion. "We cannot have peace and harmony on our homeland if this bill becomes law in Arizona," the Hopis contended.—*Coconino Sun*

Prizes For Shutterbugs . . .

The low desert in July is too hot for most amateur photographers—but you don't have to suffer heat prostration to get a suitable summer entry for Desert Magazine's July photo contest. Camera subjects also abound in the cool higher altitudes—Oak Creek Canyon, Indians near Taos, shadow studies at Grand Canyon, wildlife high in California's Santa Rosa Mountains, a ghost town ruin in Nevada. Any subject is acceptable to Desert's judges, as long as it comes from the desert Southwest.

Entries for the July contest must be in the Desert Magazine office, Palm Desert, California, by July 20, and the winning prints will appear in the September issue. Pictures which arrive too late for one contest are held over for the next month. First prize is \$10; second prize \$5.00. For non-winning pictures accepted for publication \$3.00 each will be paid.

HERE ARE THE RULES

- 1—Prints for monthly contests must be black and white, 5x7 or larger, printed on glossy paper.
- 2—Each photograph submitted should be fully labeled as to subject, time and place. Also technical data: camera, shutter speed, hour of day, etc.
- 3—PRINTS WILL BE RETURNED WHEN RETURN POSTAGE IS ENCLOSED.
- 4—All entries must be in the Desert Magazine office by the 20th of the contest month.
- 5—Contests are open to both amateur and professional photographers. Desert Magazine requires first publication rights only of prize winning pictures.
- 6—Time and place of photograph are immaterial, except that it must be from the desert Southwest.
- 7—Judges will be selected from Desert's editorial staff, and awards will be made immediately after the close of the contest each month.

Address All Entries to Photo Editor

The Desert Magazine

PALM DESERT, CALIFORNIA

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Shrine of Ages Chapel . . .

GRAND CANYON—Design of the Shrine of the Ages Chapel at Grand Canyon has been given final approval by the National Park Service and the Arizona corporation which will direct its financing, building and operation. The native stone, steel and glass structure is expected to become one of the country's foremost religious shrines. It will be built on the South Rim at the site of the annual Easter Sunrise Services.—*Yuma Daily Sun*

Seek Saguaro Vandals . . .

CASA GRANDE—Casa Grande's weekly *Dispatch* has offered a \$50 reward for information leading to the arrest and conviction of the person or persons who chopped down several saguaros in Casa Grande Mountain Park recently. Its editors pointed out that it is against local law to destroy property in any city park and also against state law to destroy saguaro cactus, so the vandals are subject to double prosecution. — *Casa Grande Dispatch*

Rainmakers, Take Note . . .

TUCSON — A "new method" of producing rain—and not artificially, either — has apparently been discovered by Dr. Charles DiPeso and Barton Wright, Amerind Foundation archaeologists now working on an ancient Indian townsite near Tumacacori Mission south of Tucson. They have noted that every time they dig in a grave area it rains. Five times since September they have worked on burial grounds, and five times it has rained. — *Arizona Daily Star*

JEROME—J. W. Brewer, Jr., director of the Jerome Historical Society, has been given the "superior accomplishment" award of the National Park Service. Brewer, now superintendent of Wupatki National Monument, was cited for his work developing the Mine Museum sponsored by the society.

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CALIFORNIA

Resurrecting a Ghost . . .

VICTORVILLE—The famous old Hesperia Hotel—36 rooms and three stories of memories dating back to 1883—will come to life again. Jack Dempsey, former world's heavyweight boxing champion, M. Penn Phillips and associates have purchased 20,000 acres in Hesperia township and promise to restore the red brick hotel and make it into a desert museum. They also plan to move Hesperia's oldest pioneer home to a lot adjoining the hotel.—*Victor Press*

World's Largest Jeffrey . . .

INYO—For some time, personnel of Inyo National Forest have believed that somewhere in the Inyo-Mono area there existed a larger Jeffrey pine than the 7-foot diameter champion in the San Bernardino Mountains. This spring they found the record-breaker — a large pine along Highway 395 and Rock Creek, two miles south of Tom's Place. It measures 23 feet 2 inches around at chest height, giving it an average diameter of 7 feet 4½ inches. Officially recognized by the American Forestry Association as the champion of its species, the tree is vigorous, sound and fast-growing. Forest Service rangers state it eventually will attain much greater size.—*Inyo Register*

Fresh Water from the Sea . . .

WASHINGTON — Scientists working on the interior department's saline water program have announced they know how to convert sea water into fresh water economically on a mass production basis. Estimated costs range from 30 cents to \$1.00 for each 1000 gallons of converted water. The cheaper method utilizes high temperatures and pressures; the more expensive is based on solar energy. Using these desalting methods, W. B. Bennett of the Bureau of Reclamation has compiled a report showing how 21,000,000 acre-feet of water from the sea could be employed in California and Texas, thereby freeing inland water for use by other Southwestern states.—*Phoenix Gazette*

Solves Fishers' Dilemma . . .

BLYTHE—With the Arizona-California border dependent upon the meanderings of the Colorado River, it has long been a problem to determine from which state a fisherman should purchase a license to angle in river waters. A solution came finally with the announcement of two-dollar special use fishing permits following an interstate agreement May 1. The new permits, on sale at license agencies

in both states, allow boat fishing in Colorado River waters on either side of the state line. In addition, sportsmen will need a regular angling license from their home state. Non-resident angling licenses and a special use permit will be required of anglers from states other than California and Arizona. Sportsmen fishing from the banks of the river will need a license from the state owning the shoreline, but will not need a special use permit.

General Patton Memorial . . .

INDIO—High school students from art classes of Riverside County schools are busy working on designs for a General George Patton Memorial following selection of a 25-acre site near Shaver's Summit. At a meeting in Indio in May, the memorial commission accepted a sub-committee recommendation that the memorial be located on a section along Highway 60-70 near Box Canyon road. The land had been offered by the state highway department. The Metropolitan Water District promised to provide water for the site. A \$100 prize will be awarded the high school student who submits the best and most practical design for the memorial.—*Date Palm*

Leave Nature Its Own . . .

BISHOP—With one swift plunging blow of its sharp hooves, a deer can kill a coyote or a hunting dog. It can also kill a child or seriously injure a grown man. For this reason alone, advises the California Department of Fish and Game, it is foolhardy to take a fawn home from the woods to make a pet of it. Another good reason is the possible fine of \$500 and six

months in jail. The deer is a wild animal, the Department points out, and it never can be completely tamed, even with the wisest care. And the wobbly fawns that soft-hearted people "save" in the woods are usually not orphans at all. If not carried away by some well-meaning vacationist, their mothers soon will come back to raise them into the strong free creatures of the forest that Nature intended.—*Victor Press*

Hard Rock Shorty

of
DEATH
VALLEY



"Sure it gits hot out here in Death Valley," Hard Rock Shorty was saying. "That's the reason ol' Pisgah Bill always let his whiskers grow in summer — to keep the sun from blisterin' his face.

"Remember one summer when we had to put all the tools in the mine tunnel to keep 'em from meltin'. Then the tin roof melted off the shack an' when the sun hit the cook stove inside it melted too.

"Bill said that wuzn't no great calamity cause we could do our cookin' on a hot rock. So he found a nice flat rock an' sure enough the beans an' bacon tasted jest as good cooked on that rock as they did on the old stove which wuz melted.

"Grub got low that summer—too hot to go down to Barstow fer more. All we had left was a lot o' flapjack flour. Worked all right fer breakfast, but when noon came an Bill poured the batter on that rock it burnt them cakes to a crisp quicker'n yu could say Jack Robinson.

"So Bill went to the spring and got a waterbag full o' that cool water an' when he poured it on the rock to cool it off the rock blew all to smithereens and a piece of it set fire to the box with the flapjack flour. An' if there hadn't been a lot of jackrabbits hidin' in the tunnel to keep cool that summer we'd a starved to death."

TRUE OR FALSE ANSWERS

Questions are on page 8

- 1—False. The sun would go down over the Panamints.
- 2—False. The Gila Monster has teeth but no fangs.
- 3—True. 4—True. 5—True.
- 6—True. 7—True.
- 8—False. Tahquitz is a god of the Cahuilla Indians.
- 9—True.
- 10—False. The plumes of Salt Cedar are lavender.
- 11—False. Mining may be done in Death Valley Monument.
- 12—False. The call of the roadrunner is anything but musical.
- 13—False. The Monument Valley Indians are Navajos.
- 14—False. Screwbean gets its name from the shape of the bean.
- 15—False. The Bird Cage theater is at Tombstone.
- 16—False. Date palms are not a native of U.S.A.
- 17—True. 18—True. 19—True.
- 20—True.

NEVADA

Churchill County Historians . . .

FALLON—In the interest of preserving historical landmarks in Churchill County, the Lahontan Survey and Research Club has been organized here. President is Rev. Ed Watson of Holy Trinity Church, who with Mrs. Wendell Wheat was instrumental in forming the society.

Lake at Lowest Ebb . . .

BOULDER CITY — Opening of swimming beaches at Lake Mead was delayed this summer as the lake reached a record low level of 1129 feet in mid-May, approximately seven feet below the lowest edge of the approved swimming beach areas. Previous low was in 1952 when the water was drawn down to 1133; but this occurred in April, and by the opening of the swimming season in May, the

water elevation had returned well up on the swimming beaches. The beaches are not considered safe for public swimming until the water elevation reaches the areas where the beaches have been graded and rocks, brush and other obstructions removed. — *Las Vegas Review-Journal*

Vacationists Like Lake Mojave . . .

BOULDER CITY—It hasn't taken America's touring millions long to discover Lake Mojave. More and more sightseers and fishermen are visiting new resorts on the lake behind Davis Dam. One of the most popular areas is Katherine Wash, according to Robert Burns, National Park Service district ranger there, and facilities are always crowded. Unlike Lake Mead, which fluctuates nearly 80 feet some years and this year is the lowest it has been since it was filled, Lake Mojave's maximum difference in water levels is about 10 feet. — *Las Vegas Review-Journal*

Paiutes Ask Compensation . . .

WASHINGTON — Walter Vorhees of Shurz, Nevada, chairman of the Supreme Council of the Paiute Nation, is seeking government compensation for 6000 fellow Paiute Indians for 50 million acres of land they contend the government took from them illegally. Acreage involved is in four states—Nevada, California, Idaho and Oregon. The Paiutes claim that land occupied by them "from time immemorial" was taken without their consent by railroads and settlers, and that the government was negligent in its guardian role by failing to protect the Indians' fishing and mineral rights. — *Humboldt Star*

Status Quo for Caves . . .

WASHINGTON—Secretary of Interior Douglas McKay has announced that the Interior Department has decided against any move to return Lehman Caves in White Pine County, Nevada's only national monument, to the state. Lehman Caves had been on the list of national monuments proposed to be returned to state control for economy reasons and because many are considered to be purely local in interest. "The department has studied the qualifications of Lehman Caves National Monument and has concluded that there is no reason to question the significance and value of the area," Secretary McKay said.—*Pioche Record*

NEW MEXICO

3 Rs for Navajos . . .

WASHINGTON — Glenn L. Emmons, commissioner of Indian affairs, has developed a program designed to place an additional 7000 Navajo children in schools by next September. "There are nearly 14,000 school-age Navajo children who are now not in school," he told the senate interior appropriations committee to which he submitted a request for \$4,535,425 for Navajo education during the 12 months beginning July 1. He hopes to get half of these currently unschooled youngsters in school by September, and the remainder by the following September.—*Phoenix Gazette*

Ask More Shooting Space . . .

SANTA FE — The New Mexico Cattle Growers Association and state officials are protesting a government plan to purchase approximately 500,000 acres of southwestern New Mexico to enlarge the Ft. Bliss McGregor firing range. A delay in the acquisition has been granted, and public hearings will be held. A Ft. Bliss spokesman said Congress already has approved the planned purchase and that the government has the land under lease. The area in question is northeast of Newman, east of Highway 54. — *New Mexican*

Fewer Goats Lose Coats . . .

ALAMOGORDO — Clipping of fewer New Mexico goats and a lower average weight per clip have resulted in a decrease in mohair production in the state in 1953. Production in the seven principal mohair states in 1953 is estimated at 12,572,000 pounds—four percent larger than the 1952 clip, but 29 percent smaller than the 10-year average. California and New Mexico were the only states to show a decrease in production in 1952 and 1953.—*Alamogordo News*

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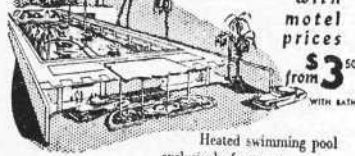
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PALM DESERT, CALIFORNIA

Famed Indian Potter Honored . . .

SANTA FE — Maria Martinez, famed Indian potter of San Ildefonso Pueblo, has been named 1954 winner of the gold medal for outstanding craftsmanship awarded annually by the American Institute of Architects. Maria's black-on-black pottery is displayed in many museums and galleries throughout the country. It was through the late Dr. Edgar L. Hewitt of the Museum of New Mexico that she perfected the unusual ceramic process. Dr. Hewitt asked Maria if she could duplicate the black ware of an ancient civilization which once lived at Bandelier. After long hours of study and trial-and-error experiments, she and her husband, the late Julian Martinez, discovered the ancients' secret. Following Pueblo custom, they later shared their knowledge with other craftsmen at San Ildefonso. Maria and her son, Popovi Da, planned to attend the June 17 AIA luncheon in Boston at which formal presentation of the medal was to be made.—*New Mexican*

United Pueblos Head . . .

ALBUQUERQUE — Secretary of Interior Douglas McKay has announced the appointment of Guy C. Williams as superintendent of the United Pueblos Indian Agency at Albuquerque. The appointment became effective April 1. Since 1950, Williams has been assistant director of the recently discontinued Albuquerque Area Office of the Bureau of Indian Affairs. The Pueblo Agency serves the 19 Indian pueblos of the Rio Grande Valley.

ZUNI — Elbert J. Floyd has been designated administrative officer in charge of a new area field office to be established by the Bureau of Indian Affairs at Zuni. He will be responsible for the Bureau's work on the Zuni reservation and will be under the supervision of Area Director William Wade Head at Gallup. Floyd has been with the Bureau since 1925.

UTAH

Nothing Left But the Hole . . .

LOGAN—"It must have been a whopper," Dr. Lincoln La Paz, director of the University of New Mexico's Institute of Meteorites, commented upon viewing the giant hole two miles west of here. Scientists believe the huge depression might have been caused by a meteorite, although so far jet drilling has failed to find evidence of it. A "streak of light" was observed in the sky May 1, lending credence to the meteorite theory. Dr. La Paz recommended continuing drilling and excavation until the geologists find out what made the hole.—*Salt Lake Tribune*

Error Aids Dam Opponents . . .

WASHINGTON—An error in calculating water evaporation losses for a high Glen Canyon Dam could possibly weaken the case for Echo Park Dam and postpone final congressional decision on the proposed \$1 billion Upper Colorado Storage Project. Undersecretary of Interior Ralph Tudor, in reporting the error, said he had ordered a recalculation of the evaporation factors of all reservoirs proposed under the Upper Colorado program. The error admittedly strengthened the case for a high Glen Canyon Dam, but Tudor said the change in water losses by evaporation was not sufficient to warrant substituting a high Glen Canyon Dam for his recommended low Glen Canyon, Echo Park and Split Mountain dams.—*Salt Lake Tribune*

Urge Dam Study Board . . .

WASHINGTON — Appointment of an "impartial, non-federal board of review" to study construction of dams in Dinosaur National Monument is among suggestions put before a Hoover Commission task force on natural resources and power. The commission is holding hearings to receive from the public suggestions and reactions to the proposed Echo Park dam, controversial unit of the giant Upper Colorado River Storage Project.

WASHINGTON—Robert J. Newell, Boise, Idaho, reclamation engineer, has been named chairman of the Upper Colorado River Commission. He succeeds Harry Bashore who retired last December. Newell was for many years the director of the Boise regional office of the Bureau of Reclamation and is well acquainted with inter-state water operations.—*Salt Lake Tribune*

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Camping on the Yampa . . .

VERNAL — Facilities for three campsites along the Yampa River were installed in May by the National Park Service. Rest rooms, fireplaces, garbage pits, incinerators and picnic tables were placed at Anderson's Hole, Hardings Hole and Boxelder Beach. The camp units were hauled down the river by veteran river runner Bus Hatch of Vernal and set up under the supervision of Park Service Superintendent Jess Lombard. Facilities also have been added to make Split Mountain a ten-unit campsite and Pat's Hole a six-unit camp, Lombard announced, and picnic tables have been placed at two locations along the Harpers Corner road in time for summer use.—*Vernal Express*



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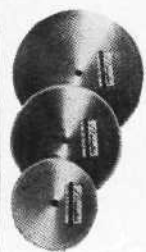
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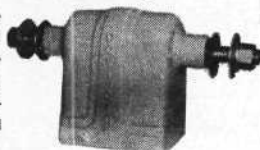
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AMATEUR GEM CUTTER

By LELANDE QUICK, Editor of The Lapidary Journal

It is Fair time. In California it is always Fair time. They begin in February with the opening of the Riverside County Fair and National Date Festival. From June on most of the counties in California hold a Fair, the largest one anywhere being the Los Angeles County Fair in September.

This year will mark the 100th anniversary of the California State Fair and Exposition to be held at Sacramento, September 2 through 12. And it is important to the mineral and gem minded hobbyist to know that since the very first fair held in 1854, minerals, mining and gems have been exhibited. Although commercial mining has been stressed, provision always is made for exhibitors of gems and jewelers' materials. Among the classifications are cut and polished gem materials manufactured in the exhibiting county but found anywhere in California; uncut gem materials mined in the exhibiting county; petrified wood found anywhere in California but polished in the county exhibiting.

Lapidaries planning to exhibit at the State Fair should contact the officials of the county in which they live, for their exhibit must be a part of the county exhibit. In most cases, the County Agricultural Commissioner is charged with the responsibility of the county exhibit. If you wish to show your lapidary work or mineral specimens, see your local County Agricultural Commissioner now at your county seat and arrange for your participation in the 100th Anniversary Exhibit in September. Perhaps your local gem and mineral club may wish to dress up your county exhibit by participation in this plan. You will have to supply your own cases, but provisions for the protection of your display are made by the State Fair.

Premiums are paid by the Fair for various other minerals and mining classifications such as precious metals, California metals and ores, California non-metallic minerals, California salines, petroleum and petroleum products, California building materials and gems and jewelers' materials. A total of \$10,000 is offered in premium money, the largest allocations being made to precious metals and building materials.

We believe that the State should revise its entire program of awards and give more financial recognition to the gem material classes, for it is the rockhound who is uncovering the increasingly rich supplies of gem materials and not the commercial gem miners. It is the rockhound who has found jade in a half dozen places in California. It is the rockhound who has made gem hunting areas, particularly those in the southern counties, meccas for thousands of tourists from all over America.

It seems to us that here is a problem for the California Federation of Mineralogical Societies to work on. With the vast amount of money allotted to prizes in the mineral and gem classifications at the great Los Angeles County Fair, for instance, why should there be a first class prize for a gem exhibit of only \$10.00 while \$100 is offered for a single gold ore specimen? It takes hundreds of hours of preparation in hunting, polishing, grinding, toting and arranging to take an exhibit to Pomona to risk winning only a \$10.00 bill while a mineral collector can go out and spend \$100 for a nice gold specimen, stick it in his pocket

and leave it in a case with a fair chance of winning enough prize money to pay for his specimen.

A study of the fair premium lists that cross our desk certainly indicates that they all need revision and that the officials need some competent advice from authorities, advice which they would no doubt welcome if it were offered. Perhaps a movement can be initiated at the club level and county level to cooperate with officials to remove these inconsistencies.

The reason minerals have been stressed in California is because the state has always been a mining state. People are inclined to think that our mining wealth came mostly in the "old days" but the greatest mining year California ever had was in 1951 when our mineral wealth for one year totaled almost 1¼ billion dollars, of which petroleum products accounted for about two-thirds of the total. San Francisco County is the only county in the state in which minerals are not found in commercial quantities.

Two thousand minerals are found throughout the world but only about 10%, or 200, are of economic importance. Five hundred sixteen identified minerals have been found in California, 39 of which have never been found at any other place.

Readers not living in California who are interested in gems and minerals should make inquiry of their state officials about exhibiting at their own state fairs. All officials consulted report that mineral and gem exhibits lead in popularity. San Diego County particularly emphasizes gems and gem cutting at their Fair in July. They always have a full lapidary shop in continuous operation, manned by the members of the local mineral and gem clubs. Their premiums are highest but are confined to residents of San Diego County—as they should be.

A great deal of the money for the operation of our California fairs comes from the state's share of money bet at race tracks. In 1952 the total wagered was \$356,194,815. Of this amount 86¼ cents of every dollar was returned to winning ticket holders while 5.62 cents of every dollar went to the state. Almost half of this amount went to the support of fairs and expositions (43.4%). In other words every time a bettor goes up to the window and places a \$2.00 bet in California he hands about 6 cents through the wicket for state fairs.

If your local club decides to try to do anything about the prize situation at your local or state fair, we hope you will support a project we have had in mind for a long time and which we have under correspondence now with the state officials. We think that our great number of California gem carvers and sculptors should be encouraged to carve in California materials, and we are urging the state to offer substantial prizes every year to California artists for carvings in native gem materials. This could become one of the most popular exhibits, and it would encourage a great many hobbyists to venture beyond the confining effort of being just cabochon artists. Let them decide later whether the exhibit should be in the art department, the craft department or the mineral department. We are inclined to think at this time that it should be under the art classification and that it should be statewide and not at the level of the county exhibit.

GEMS and MINERALS



Old print showing three primitive gold recovery methods—pan, rocker and arrastre. Used by the '49ers, the gold pan and rocker are still employed today and are easily adapted by the amateur. Ruins of arrastres or drag-stone mills may be found throughout the Southwest. Photo courtesy California State Division of Mines.

Goldpanning for Fun...

Is your mineralogical society looking for a "different" type of field trip? Here is a good idea, endorsed by many groups which have tried it.

DURING THE Depression of the 1930s, hundreds of persons, many with their families, camped along streams or on the desert and earned a meager living panning or dry-washing for gold. By long hours of hard work, the average depression prospector recovered 50 cents to one dollar a day in gold.

Many families today also try their luck with gold pan or home-constructed recovery gadgets at placer locations throughout the Southwest. But today it is a weekend or vacation pastime—an outdoor hobby rather than a struggle for existence.

Gold prospecting as a hobby has become popular for several reasons: economically, one may start with little equipment and almost no capital; psychologically, there is great satisfaction in recovering from the earth actual gold particles; health-wise, it brings families away from the cities for a few days in the great outdoors.

Gem and mineral societies have turned to gold panning for a "different" type of field trip. Some visit streams on their own; others ask the cooperation of mine caretakers who, for a small fee, guide the group over the placer ground and explain and demonstrate the gold panning technique. Last summer, Santa Barbara Mineral Society even brought gold panning entertainment to a picnic meeting. Pans, water and gold-bearing gravel were provided, and members took turns trying their luck. It is a good idea for societies to practice panning in this manner before planning a field trip to a placer site.

Much of the potential placer ground in the Southwest is on private property, and permission to mine or prospect on it must

be obtained from the owner. Most are agreeable to an occasional amateur prospector spending a few hours or a day work-

ing on their land, and most, assured by a society representative of considerate use, would allow an organized group to plan a field trip there. In the April, 1953, issue of *Desert Magazine*, E. C. Thoroman described and Norton Allen's map located 20 Arizona placer sites which might be visited by individuals or society parties.

Most of the gold taken from streams is in the form of "colors," minute particles of gold so small that many of them are not discrete to the unaided eye. Colors range in size from a very fine powder to particles coarse enough to be retained on a screen of 20 mesh to the inch, and in value from 1/1000 of a cent apiece to 1½ cents each. Particles so large as to be retained on a 10-mesh screen may qualify as nuggets, small ones being worth 5 to 10 cents. Of course, there is always the possibility—now statistically remote—that a large nugget may be found. It is this possibility that adds the zest and suspense to placer mining.

Basic tools for the placer miner are few. A long-handled, round-pointed shovel for digging, a gold pan, a hand magnifying glass for inspecting tiny gold particles, a prospecting pick and full-sized pick are recommended.

Main tool for the amateur is the gold pan. It is a shallow pan 15 inches to 18 inches in diameter at the top and 2 to 2½ inches in depth, the sides having a slope of about 30 degrees. It weighs from 2 to 3 pounds, being made of a heavy gauge steel with the rim turned back over a heavy wire for stiffening. A skilled operator can wash half a yard to a yard of detritus in 10 hours, but skill requires years of practice.

The object of panning is to concentrate the heavier materials by washing away the lighter. To do this most efficiently, all material should be of as even a size as possible. The pan is filled about three-quarters full of gravel to be washed, then is submerged in water. The large gravel is first picked out by hand, then the clay is broken up. The operator raises the pan to the edge of the water, inclining it slightly away from him and moving it with a circular motion combined with a slight jerk, thus

(Continued on page 37)

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GET YOUR COPY of "A Mineral Collector's Guide to Wonderful Wyoming." 25c. Gritzner's, Mesa 3, Arizona.

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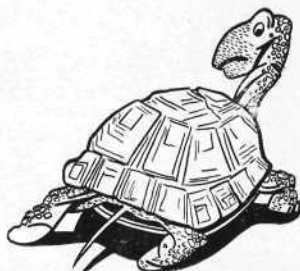
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Although we do them because they're fun, hobbies take a lot of perseverance too. Take gem cutting, for instance. You can't whiz along jackrabbit-style cutting your first cabochon and expect results you can be proud of. It takes practice—and good old tortoise stick-to-itiveness.

Here are books which will make the learning easier. They will teach you the intricacies of lapidary techniques, the proper use of materials and equipment, the handy tricks which make the job less tedious, the hours of practice and work more fun, the final sense of accomplishment more complete.

Gem Cutting, J. Daniel Willems.....	\$3.50
Jewelry, Gem Cutting and Metalcraft, William T. Baxter.....	\$4.50
The Art of the Lapidary, Francis J. Sperisen.....	\$6.50
Cabochon Jewelry Making, Arthur and Lucille Sanger.....	\$3.50
The Art of Gem Cutting, Dr. H. C. Dake.....	\$2.00
The Diamond Saw and Its Operation, Wilfred C. Eyles.....	\$1.20

All books sent postpaid • California buyers add 3% sales tax

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AMONG THE ROCK HUNTERS

A series of colored slides selected from those taken by members of Coachella Valley Mineral Society were shown at a meeting in Indio, California. The pictures showed desert wildlife and mineral locations and places of interest visited by the amateur photographers.

If your canteen bothers you by swinging in front of you whenever you lean over to examine a specimen, try a suggestion from Henry Hart of Compton Gem and Mineral Club, Compton, California. "Instead of one loop at the top, pull an equal loop from each side of the canteen," he advises. "Slip into these loops as though putting on a coat and you will find the canteen riding securely in the middle of your back like a small knapsack—out of your way but there when you need it."

AUSTRALIAN cutting fire opal, specimens, cutting material. H. A. Ivers, 1400 Hacienda Blvd., La Habra, California.

SPECIAL TUMBLERS—assortment of Petrified wood, agate, rose quartz, obsidian, etc., broken to size for tumbling. Beautiful colors, five pounds prepaid for \$8.50. Ten pounds \$15.00 or will include enough of our special abrasive for the first run if you pay express charges. Send 25 cents for a sample baroque gem or five for \$1.00 and you be the judge. Instructions with each order for tumbling materials. Willis Brown, Flagstaff, Ariz.

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

HORSE CANYON AGATE DEPOSIT now closed to the public. Gate locked and range cattle thereon. No trespassers. V. W. Phillips. Tehachapi, California.

10 POUNDS of beautiful mineral specimens, selected \$6.00. Ask for list. Jack The Rockhound, P.O. Box 245, Carbondale, Colorado.

URANIUM SAMPLES in quartz, agatized jasper, petrified wood, onyx, opalite, wonder rock, high grade gold, galena, beautiful copper, complete set \$1.50, 5 lb. bags. J. S. Wisdom, Dyer, Nevada.

PRIVATE COLLECTION for sale. Over 250 fine specimens. See this at 548 Nevada Hwy, Boulder City, Nevada. Lewis M. Jones.

FIFTY MINERAL Specimens, $\frac{3}{4}$ -in. or over, boxed, identified, described, mounted. Postpaid \$4.00. Old Prospector, Box 729, Lodi, California.

GEMS A-PLenty: Beautiful baroque gems, large variety, tumble polished all over, \$10.00 for one pound (about 100 stones). 10 lbs. of top grade gemstone prepaid for \$7.00. Wholesale price to dealers on baroque gems and gemstone in the rough. Satisfaction guaranteed on every sale. San Fernando Valley Rock Shop, 6329 Lindley Ave., Reseda, Calif.

Goldpanning...

(Continued from page 35)

stirring up the mud and light sand and allowing it to float off.

This is continued until only the heavier materials remain, such as gold, black sand and other substances having a high specific gravity. These heavier materials, called concentrates, are saved until a large quantity accumulates. The large particles of gold may be extracted by hand, the smaller amalgamated with quicksilver, preferably in a copper-bottomed pan.

Panning may best be learned by watching an old-timer or experienced operator at work, learning certain tricks of the trade from him. A clean 6- or 8-inch frying pan makes an excellent prospecting or clean-up pan.

More elaborate than the gold pan are the rocker, sluice-box and dip-box which are more effective but which also require time, effort and some expense to construct. However, a society may want to undertake, as a group project prior to a placer mining field trip, the construction of one or two pieces of more complex equipment. These machines are easily built on the general principle of a declining trough or sluice with riffles—obstacles like slats, iron screen, poles or metal strips or rough materials like burlap, blanket, carpet, rubber mat, etc.—placed along its bottom to catch the gold.

Directions for the construction of several models are given in the Mineral Information Service bulletin, Vol. 6, No. 8, August 1, 1953, of the California Division of Mines. The bulletin is distributed free of charge by the Division of Mines, Ferry Building, San Francisco 11, California.

URANIUM ORES, CAMEOS AMONG SPECIAL EXHIBITS

A complete display of high-grade uranium ores is being sent by the Atomic Energy Commission for the Lapidary Association's gem show August 13 to 15 in Los Angeles' Shrine Convention Hall. Other feature exhibits will be rare gems owned by the Kazanjian Brothers of Los Angeles; Hugh Barnes' collection of oriental carvings and Raymond Addison's cameo carvings.

Jewelry designed by Willy Petersen-Fagerstam for the motion pictures "Anna and the King of Siam," "Cleopatra" and "Elizabeth the Queen," the latter exact replicas of England's crown jewels, also will be shown. Loren Rogers will exhibit outstanding stones, including a flawless 386-carat blue topaz, a 150-carat white topaz, 125-carat smoky quartz round brilliant cut and other stones of exceptional quality.

Two hundred amateur exhibits are expected from members of the 11 clubs in the Lapidary Association. Working exhibits will operate continuously.

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SPECIAL EXHIBITS PLANNED AT COMPTON'S JULY SHOW

The "Surprise Tree" is one of the feature attractions planned at the fifth annual show of Compton Gem and Mineral Club, to be held July 17 and 18 in the Compton, California, Veterans of Foreign Wars Hall. The "tree" will be decorated with "surprise" packages containing knick-knacks, kitchen gadgets, slabs, rocks, jewelry, cabochons and other items, explains Sal Strohmeyer, chairman. Lida Wilson is planning a snack bar. There will be guest displays, working exhibits, junior exhibits and collection of gems and flowers of the months. Velye and Jim Carnahan are arranging for special displays; Bob Bird is handling members' displays, and Jim and Irene Arnold are in charge of dealer space.

GEM AND JEWELRY SHOW

Hollywood Lapidary and Mineral Society will hold its seventh annual Gem and Jewelry Show October 9 and 10 in Plummer Park, 7377 Santa Monica Boulevard, Hollywood, California.

COMPTON GEM & MINERAL CLUB

invites you to its FIFTH ANNUAL

GEM & MINERAL SHOW

JULY 17-18

10 a.m.—9 p.m. Saturday

10 a.m.—7 p.m. Sunday

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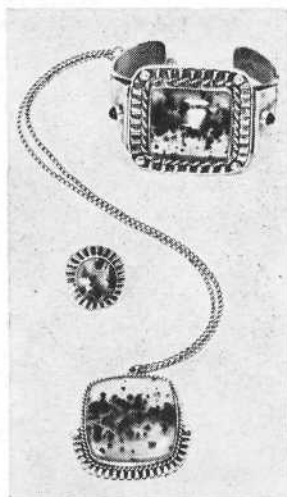
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Real rockhounds saws favored for their big capacity and lifetime construction. "Magic-Brain" automatic feed for above \$46.35

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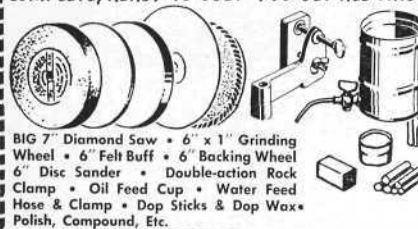
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"LAPIDARY IN ACTION" WHITTIER SHOW THEME

"Lapidary in Action" is the theme chosen by Whittier Gem and Mineral Society of Whittier, California, for its fifth annual show. Committees are already at work on plans for the fall show, which will be held October 23 and 24 in the city's Smith Memorial Hall.

HUMBOLDT SHOW IN FALL

Humboldt Gem and Mineral Society, Eureka, California, will hold its 1954 show October 2 and 3 in the Carson Memorial Building, Harris and J streets, Eureka. Hours will be from 10 a.m. to 10 p.m. Saturday and 10 a.m. to 7 p.m. Sunday.

Elmer Peck, instructor in earth science at Riverside Junior College, spoke at a meeting of Riverside County Chamber of Mines. He discussed meteors and meteorites, their appearance, occurrence and how and where to look for them.

Opal deposits at Black Canyon, California, were visited recently by rockhounds from San Fernando Valley Mineral and Gem Society, North Hollywood, California.

George Montrose, Frank Glass and Bill Winters of Fresno, California, Gem and Mineral Society are feeding small gem chunks and slabs to tumbling mills built after Emil Mueller's designs, published in the March issue of *Desert Magazine*. Montrose wants to run his machine overtime without affecting his electricity bill and plans to power it by harnessing a four-foot waterfall in one of the irrigation ditches on his property.

"BONEHOUND" FINDS RARE SPECIMEN; ABANDONS DIG

W. D. Kelley, amateur paleontologist member of the Earth Science Club of Northern Illinois, calls himself a "bonehound." In the Club's May bulletin he describes one of his recent field trips to a gravel pit on the east bank of the Fox River.

In the side of the pit, he relates, about eight feet down from the top, he and his companions noticed a bone protrusion. Working with picks, trowels and brushes, they worked to free the specimen, and large hindleg bones, pelvis and vertebrae soon were laid out in order on the quarry floor. The vertebrae had large spines that increased in height as the diggers worked forward. "This must be a bison that roamed the area thousands of years ago," they thought.

The group worked as quickly as they dared, hoping to reach the head and identify the find before dark. Identification, however, was finally made by the foot. Examined by flashlight, careful scrutiny revealed attached to the hoof an iron object in advanced state of oxidation.

"I had placed all the bones carefully in the back seat of the car," Kelly recalls. "On further thought, however, I decided not to lug a carload of bones back home, and kept the horseshoe alone as a souvenir."

The NUCLIOMETER Model DR-290

A super-sensitive instrument unaffected by desert heat, excellent for making "grid-map" surveys, for uranium deposits, and locating distant ore bodies. Tested and proven to be the most sensitive and efficient portable radiation detector made. It is rugged, stable, with a three scale sensitivity, calibrated in counts-per-second, low operation cost.

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New Model DS-234 Scintillatron—The latest scintillation counter on the market. Superior sensitivity performance and calibration. Low Price...\$467.00 F.O.B. Compton, California

Geiger Counters—The Prospectors Pal Model DG-2 with three scale sensitivity meter.....\$98.50

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Model DG-7—same as above with separate, detached probe.....\$135.00

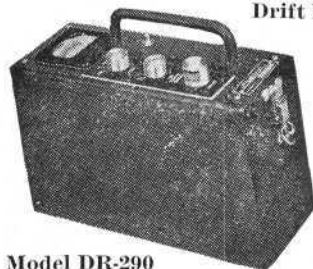
METAL DETECTORS—The Model 27 Deluxe (with meter) for prospecting for metallic minerals, gold and silver included (Depth range maximum 7 ft.)\$110.00

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Dr. Charles Riley of the geology department of the University of Nebraska spoke to members of Nebraska Gem and Mineral Club on "Crystals." He demonstrated crystal growth by dropping certain crystal formations into chemical solutions and showing his audience how quickly they multiplied.

Steve Ridgley related "The Story of Chrome" for members of the Gem and Mineral Society of San Mateo County, California. Ridgley reported that 81 percent of the previous month's supply of chrome shipped to Grants Pass, Oregon, western chrome depot, came from California.

"Cordilleran Horizons," the colored movie chronicle of their trip through the western United States, was shown at a Chicago Rocks and Minerals Society meeting by Mr. and Mrs. E. Goff Cooke. Cooke is president of the society.

A picnic supper at Evansville, Indiana's McClure Park was enjoyed by members of Evansville Lapidary Society at a Sunday meeting.

Dr. Albert Heimlich was invited to speak at the May meeting of Santa Barbara, California, Mineral and Gem Society. He elected to tell of his jeep explorations of Southern Utah and Northeastern Arizona, showing colored slides of the areas he visited.

Searles Lake Gem and Mineral Society, Trona, California, was forced to cancel its planned field trip to Horse Canyon upon learning that the site had been purchased by individuals who have closed it to the public.

Members of the Earth Science Club of Northern Illinois learned about botany at a recent meeting. Dr. Barbara Palser, associate professor of botany at the University of Chicago, spoke on "Rocky Mountain Flora." She showed colored slides.

"Rockhunting in Old Mexico" was Louis Vance's topic when he spoke to the Glendale Lapidary Society, Glendale, California. Vance told of visits to Queretaro for fire opal, Guanajato for amethyst, to Mexican iron and copper mines for crystals and mineral specimens.

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W. Walter Wells described and explained pegmatite occurrences, their locations in the United States, particularly in Arizona, and their value to industry on an evening program of the Mineralogical Society of Arizona.

President Vera Archer of Dona Ana County Rockhound Club, Mesilla Park, New Mexico, named new committees to serve during the coming year: Mr. and Mrs. Jesse Patty and Lesla Markley, library case; Newt Jones and Hugh Derham, field trip; Louise Taggart and Mrs. Roy Winsler, hospitality; Selma Jones and Clea Noles, hostesses.

Martin L. Ehrmann, graduate mineralogist of the University of Hamburg, Germany, was invited to speak at the May meeting of Montebello, California, Mineral and Lapidary Society.

Talc, mica, granite, marble, limestone, barite, flagstone, kaolin and other industrial minerals of the state of Georgia are described and different quarries pictured in the spring issue of the *Georgia Mineral News Letter*, organ of the Georgia Geological Survey. Another article describes the research activities of the Georgia Mineral Laboratory.

Field trips to the selenite fields near Bonelli Landing on Lake Mead; green jasper fields in Vegas Wash; Valley of Fire; Park onyx field near the Spearhead Mine, Henderson; and the flower agate field across the lake in Arizona were enjoyed by visitors to Clark County Gem Collectors Rockhound Pow-wow at Boulder Beach, Nevada.

May field trip of Santa Fe Gem and Mineral Club was to Hondo Canyon, New Mexico, for staurolite.



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Oremasters are built not only to find uranium, but also gold, silver, lead, copper, titanium, cobalt, nickel, etc., whenever they contain an ore associated with the hundreds of radio-active minerals, which they frequently are.

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Ruth Lodewick won first prize in a writing contest sponsored by the editors of *The Puget Sounder*, bulletin of Tacoma Agate Club, Tacoma, Washington. Her winning essay, telling how she became a rockhound, was published in the April issue. A second contest was announced for May.

"The earth is not a true mathematical sphere," Dr. Ben Hur Wilson told members of the Chicago Rocks and Minerals Society, explaining, "if it were, everything would be covered by water." Dr. Wilson's illustrated lecture was titled, "The Earth as a Planet."

Almost 1100 persons visited the recent show of Central Illinois Rockhounds Club, President George M. Davis announced. Thirty-five collections of minerals, gems and jewelry comprised exhibits.

"Let's go 'diamond' hunting," field trip leaders of East Bay Mineral Society, Oakland, California, urged fellow members. A May trip was planned to Napa County. The "diamonds" actually are shattered quartz crystals.

Ben Humphreys led members of the Mineralogical Society of Arizona on an April field trip to the prehistoric pipestone quarry in Chino Valley, Arizona, northwest of Prescott. Material from the ancient quarry was used in jewelry made by Indians in the vicinity in approximately 700 A.D.

Rear Trunk, bulletin of Nebraska Mineral Club, reports that Henry Reider of Nebraska State Museum has a "bonophone"—a musical instrument made of 25 petrified rhinoceros ribs.

Motion pictures showing the El Paso Natural Gas Company project, bringing natural gas from Farmington, New Mexico, to San Francisco, California, were projected by Frank Mangan, company official, at a meeting of El Paso Mineral and Gem Society.

A Memorial Day weekend field trip to Western Utah was scheduled by Colorado Mineral Society, Denver. Members hoped to find agate and gastroliths. Other summer field trips will be to the marcasite beds northwest of Ft. Collins, and to Del Norte and Creede for agates and amethyst.

Pyrite crystals, galena, copper specimens, chrysocolla, clear and mottled calcite, lime minerals, copper, silver and lead were among specimens members of Long Beach Mineral and Gem Society hoped to find on a field trip to Lone Pine, California.

First field trip of spring for Minnesota Mineral Club was to the Cayuna Iron Range at Crosby-Ironton. Members found various iron specimens and cayunite of good cutting and polishing grade.

May meeting of Shadow Mountain Gem and Mineral Society, Palm Desert, California, was "Braggin' Rock Night." Prizes were awarded for the most beautiful, the oddest and the rarest specimen.

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Slabs, per inch......30
Jade (Alaska), per 1/2 lb.....6.25
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"Mineral Guide No. 1" was published as a supplement to the May issue of the Mineralogical Society of Southern California bulletin. Jack Van Amringe told about mineral locations near Goodsprings, Nevada. Other guides are planned by the bulletin editors. The special sheets are punched for filing in a loose leaf binder.

San Francisco Gem and Mineral Society is conducting a contest to select a name for its monthly bulletin. The winning entry will be selected by popular vote of the membership.

Molly Maley told of her trip down the Colorado River, Bright Angel to Lake Mead, at a general meeting of San Diego Mineral and Gem Society. Members of the mineral resources division viewed a film, "Survival on the Desert," and the mineralogy division discussed San Diego County pegmatite minerals.

Wesley Maurie told members of Hollywood Lapidary and Mineral Society about fluorescence at a recent meeting.

A complete cabochon unit, including trimmer, 8-inch slabbing saw, grinder, sander and polisher, was set up at a Pasadena Lapidary Society meeting. Demonstrations provided the program for the evening.

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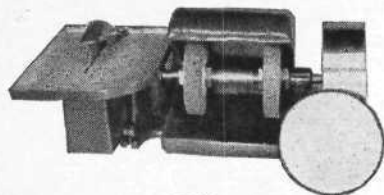


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Colored slides — not pictures, but thin slabs of rock mounted in 35 mm. slide holders—were shown to members of San Antonio, Texas, Rock and Lapidary Society. Represented were petrified wood, agate, palm, obsidian and galena.

A Memorial Day weekend trek into the Bullion Mountains of California was planned by San Diego Lapidary Society. Gem hunters hoped to find jasper and amethyst.

Mrs. Lester Sparks won the contest sponsored by Indiana Geology and Gem Society to find a name for the club bulletin. Her winning suggestion, "Geologem," now graces the masthead.

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10" 2 for 1.15; 25 for 11.00	3 for 1.00; 25 for 6.45
12" 2 for 1.65; 25 for 16.00	2 for 1.00; 25 for 9.45

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By RANDALL HENDERSON

I HAVE BEEN reading some of the entries in the bird contest which *Desert Magazine* announced three months ago—and have been amazed at the widespread interest in bird-watching and bird-feeding in the desert Southwest.

If anyone imagines that because this is a desert, we do not have many birds, they are far wrong. I doubt if any part of the United States has birds in greater variety or numbers than the desert country.

We have some migratory birds, but there probably are 150 species that remain here the year around because of the mild winters. They find an abundant supply of food here—seeds, insects and worms. Their main problem is water—and increasing numbers of desert residents are helping them solve that problem by installing backyard bird fountains and baths. It is a fascinating hobby — attracting birds to your home and cultivating their confidence.

Our radio never produces such pleasing music as the serenade which comes nearly every morning from the mocking bird that perches outside our window. And there are no commercials in the repertoire of the mocking bird.

* * *

Some folks have strange ideas about this desert. For instance, Val Peterson, federal civil defense administrator, is quoted by a reporter as suggesting that in the event of an atomic bomb attack the five million people in the Los Angeles metropolitan area could be evacuated to the desert. The FCD administrator failed to explain just where the five million would get their drinking water—especially if it happened in summer when a person exposed to the sun would need a gallon of water a day to offset dehydration.

Fortunately, the chances of Los Angeles being bombed are very very remote. I wish folks had more faith in the ultimate survival of that which is true and right. More faith and less fear would be good for all of us. I regard Gandhi as the greatest teacher of our times.

* * *

George Williams, writing in the *Southwest Review* of Dallas, Texas, believes that every community should work toward the building of a Natural History Museum. Wrote Williams:

"Under a management that had vision and was not bound to the thought-patterns of the nineteenth century, a museum of natural history could be one of the most useful, educational, and popular assets of any community. It would do more than any other institution to help solve what has become one of the most serious cultural problems of our age—how to help intelligent people spend

their leisure time with profit to themselves and without injury to society. Moreover, the need for this sort of institution becomes more pressing every day.

"The world of native forests, prairie, marsh, and stream—the world of native flowers and trees and grasses, of native mammals and birds and fish and reptiles and insects—is contracting every day; the world of pavements and factories, apartment houses and plowed fields and polluted streams is expanding every day; and, as a result of technical inventions, leisure is becoming more and more abundant every day.

"Museums of natural history cannot halt the advance of 'civilization'; but a good museum of this type can preserve for many thousands of people, living among the tenements and the sky-scrapers and the housing projects and the gasoline fumes and the tabloids, that contact with nature which can bring so much pleasure, so much understanding, and so much mental and spiritual uplift."

* * *

One of these days, when they get around to it, I hope some of the civic organizations in Blythe, California, will take up seriously the matter of protecting those rare Giant Pictographs found on the desert mesa along the Colorado River just north of the Palo Verde Valley. I have had a story about those amazing rock figures in the editorial files for years—reluctant to publish it because visitors would be dismayed when they discovered that pre-historic landmarks of such unusual interest had been allowed to deteriorate so badly.

* * *

I have on my desk a letter from a scientist for whom I have a very high regard. He wrote at some length to prove it is improper to refer to Creosote Bush—*Larrea Divaricata*—as "greasewood." He proved his case without a doubt. My answer to him:

"Fortunately, language is a living, changing thing—and I rather think that applies to scientific language as well as the words spoken by the layman. I know, botanists are stubborn about such things, and it probably is fortunate they are. In this instance I suspect the odds against them are so great that sooner or later they will have to bow to common usage.

"I don't like the word greasewood as applied to Creosote. I've grown very fond of the shrub during the 40-odd years I have lived with it. I don't like to see the word 'rat' applied to some of our desert rodents. But I am sure these terms are here to stay for a long time. You and I cannot change that, and there is no serious reason why we should try to do so. There are more important things for us to worry about. For my part I am going along with the greasewood fraternity—and love the hardy little neighbor nonetheless because it acquired an ugly name."

BOOKS of the SOUTHWEST

DESERT BOTANY FOR BOTH AMATEUR AND SCIENTIST

Of interest to botanists, both amateur and professional, is the new edition *The Trees and Shrubs of the Southwestern Deserts* by Lyman Benson, professor of botany at Pomona College, and Robert A. Darrow, professor of range management at A. and M. College, Texas.

This book is a revised and more permanent edition of a *Manual of Southwestern Desert Trees and Shrubs*, written by the same authors and published by the University of Arizona Press several years ago and now out of print.

The volume covers the entire range of perennial vegetation in the arid Southwest, from the below-sea-level elevations at Salton Sea and in Death Valley, to the 5000-foot level. An index that lists the common names of the species and families as well as the scientific classifications, makes the highly informative text readily accessible to the learner as well as to the advanced student of desert botany.

Some types of desert plants, like the cacti and agaves withstand drouth by methods of water storage. Others, such as ephedra and creosote bush have various devices for reducing the loss of water, generally by reduction of the leaf area. Some of the trees and shrubs, such as palo verde and ocotillo leaf out during rainy periods, and shed their leaves with the advent of drouth.

All of them have adapted themselves in one way or another to the peculiar conditions of their habitat, but in doing so they have acquired highly complex characteristics which make the study of desert botany a fascinating field of interest.

Geographically, the creosote-bush deserts are in one of three general desert categories: The Mojave Desert, the Sonoran Desert which includes the Salton Sea Basin, the Colorado Basin and the western portion of Arizona, and the Chihuahuan Desert which is approximately the lower basin of the Rio Grande and eastern Arizona.

Including lessons in flower, leaf and fruit structure, and key identification, the book has all the information a beginner in botany will need to undertake a thorough study of the perennial plant life of the desert.

Published jointly by Arizona and New Mexico University Presses. 115 illustrations including nine in full color. Appendix. Index. 437 pp. \$8.50.

NEW DEATH VALLEY GUIDE IS PUBLISHED

From William Lewis Manly and the Jayhawkers to Shorty Harris, the story of Death Valley's colorful and tragic place in western history is told in condensed form in a 56-page pictorial edition published this year by 5 Associates of San Francisco. The title is *Death Valley*.

The photographs, including eight pages in full color were taken by Ansel Adams, famous western photographer. The history is written by Nancy Newhall. A guide to points of interest and a descriptive check list of the more common species of flora and fauna are the work of Ruth Kirk, and a map of the Valley by Edith Hamlin provides the reader with a graphic presentation of California's most famous desert, both past and present, in brief form.

Published in 9x12 format with paper cover, the book is for those who would cover the span of Death Valley's history and scenic wonders in two hours' reading time. Fine photography, thorough research, and authentic guide information are combined to make the booklet an excellent handbook for the Death Valley visitor. \$2.50.

BOTH FICTION AND HISTORY IN ARIZONA MINE STORY

The Blue Chip, written by Ysabel Rennie, is a fiction book that contains much Arizona history—a book that breathes the spirit of a phase of a West at the close of the 1890s that has almost been forgotten. There are in it no thundering herds, no love-lorn lassies, no shootin' cowboys.

The Blue Chip is the story of the perpetually hopeful prospector who is eternally just about to strike it rich. Having lived for some years in the Globe-Miami-Superior district, the author knew her mines and miners. And in her dynamic descriptions you can smell the manzanitas in spring, see the summer heat waves dancing along the canyon walls, and feel the wait-a-minute tug of the catsclaw, and the slippery mat of pine needles as you climb up to the Pinal Mountains.

The story is told almost entirely in the first person by Tommy Packer. Tommy's father James Packer, a graduate engineer from Cornell, came with his wife and two sons to Arizona attracted by the great silver strike at Globe. Here prospecting got into his blood, and he became a wanderer of the hills. Eventually his path crossed

that of a lovable, uneducated, worldly-wise old prospector, Jake Feeley.

They found very rich copper ore and named it the Blue Chip. Taking in a third partner, Bow Miller, a banker from San Francisco, they launched the Cobre Valley Mining and Smelting Company. Sprawling along the walls of the canyon in typically Arizona style, the mine grew into the mining town of Jericho. Jericho might be Globe or Miami or Bisbee or Clifton—or a composite of all of them.

Published by Harper and Brothers, New York. 307 pp. \$3.50.

UTAH GUIDE BOOK IS IN PRINT AGAIN

After being out of print for several years, a new edition—the third printing—of the *Utah* book in the American Guide Series, is again available.

Originally prepared in 1941 by the Utah Writers' Project, the 596-page book is the most exhaustive work ever done on the history, geography, resources, industry and agriculture of the state.

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Books reviewed on this page are available at Desert Crafts Shop, Palm Desert

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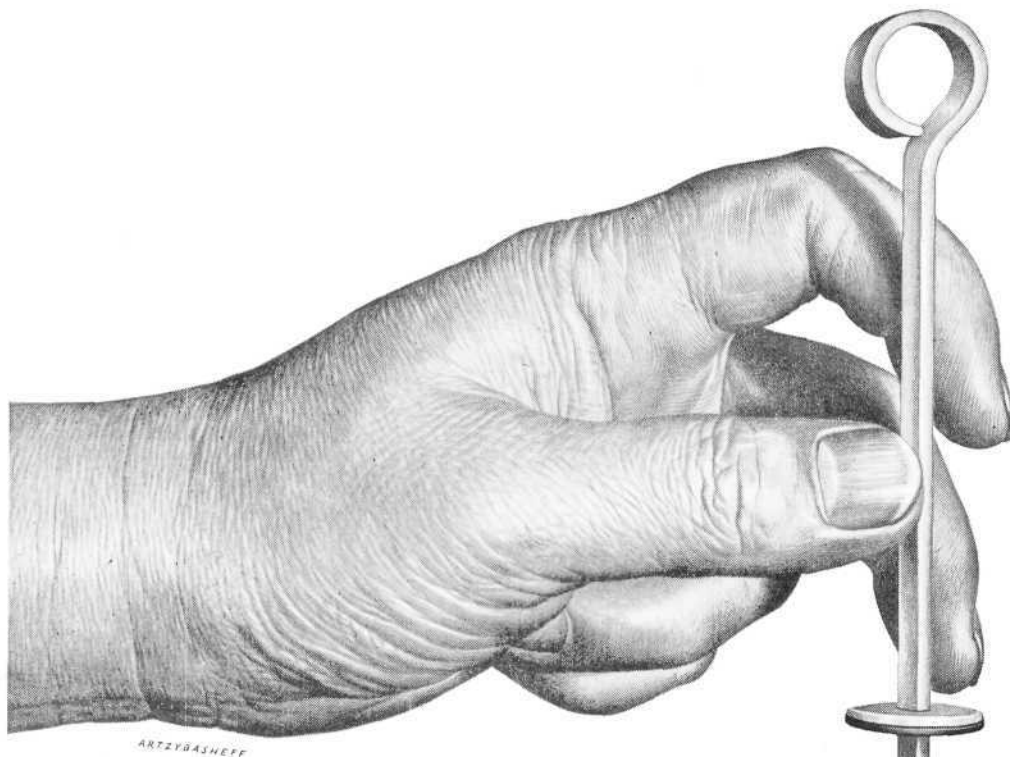
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